

Oklahoma Innovations Radio Show

Air Date: June 7, 2009

Guests: **George Durham**, director, Fires Battle Lab - Fort Sill

[Music]

>> From the OCAST Radio Network, this is Oklahoma Innovations, a weekly science and technology radio magazine brought to you as a service of OCAST, the Oklahoma Center for the Advancement of Science and Technology. OCAST is the state's only agency whose sole focus is technology, its development, transfer, and commercialization. OCAST mission is to identify and find promising research and technologies that allow Oklahoma to compete in a global market economy from our own backyard. This program features some of the state's most gifted and talented scientists, inventors, entrepreneurs, manufacturers, and business leaders who all have one common goal, developing technology based economic growth for all Oklahomans. Now, here are your hosts, Gary Owen and Steve Paris.

>> We are on the road once again this week, and Steve and I have had the pleasure of taking in a really cool facility. We are down in the Lawton area and we're actually at Fort Sill and we tour the Fires of Battle Lab. What an exciting event we took in today, huh?

>> You know, Gary, if you just could have some understanding of what this facility means, what it means to the military, not just the army but to all the branches of military service, and even to our allies in other countries. We have seen things today that I think would boggle your mind and challenge your imagination, and we're gonna talk about that here in just a few minutes with George Durham, who is the director of the Fires Battle Lab at Fort Sill. And he's a historian of sorts and we're gonna ask him about some of that here pretty quickly. But before we do, George, we need to know just who you are. You have a career in military and then here we are, you're in the private sector now working under contract, I assume, with military. Explain that relationship and explain your background to us a bit.

>> Well, I am a retired field artillery officer. I originally joined the army as a private in 1960, retired from the army in 1988, but I am a Department of the Army Civilian. I am not a contractor and--

>> Okay.

>> I run the Fires Battle Lab as you said. We're focused on technology and we try to look out to the future.

>> Yes, you do.

>> And we're looking in the period of somewhere around 2017, 2020. That's the timeframe we're usually working right now.

>> Wow.

>> And if I may, just kind of an overarching comment here, some of the things that you're trying to accomplish is to help keep our military officers and enlisted men alive, helping them effectively conduct battle operations and do it in a way to try to save lives and not--and in addition to achieving the mission. And one of the things that I saw and I kept hearing as I went through on this tour is we're trying to help our soldiers, you know, mitigate losses, collateral

damage, save civilian lives, while at the same time conducting an effective battle. Is that kind of an overarching concept of what we're trying to do here?

>> That's exactly right, and we do basically two things. As you saw, we have a training system that we've been working on for quite some time and we have another training system that we've had here for a long time, both of them using computer generated training facilities. And we also do computer existing--or excuse me, computer assisted exercises where we examine concepts, organizations, things like that, again, trying to give the best product we can to the soldier.

>> Very good. Now, we're gonna talk more about that. But I wanna switch gears on you just a little bit. Now, I wanna talk to George Durham, the historian. Here we are at one of the most, to me, one of the most interesting historical sites in the nation, and we're talking about Fort Sill. It's been around for many, many, many years. Tell us a little about what this post is all about.

>> Well, of course, Fort Sill goes back to the mid 1800s. It was originally designed to help keep the Indian tribes on the, at that time, the Indian Territory. And interestingly enough, the main post was built by the 9th and 10th Cavalry or the Buffalo Soldiers. Most of those stone buildings that they constructed are still in existence today and being used. Sheridan House is the home of the CG, and we have facilities around post. If you go out on West Range, you'll see towers out there that were designed in World War I to observe the effects of artillery. A lot of things that people may not know about Fort Sill is originally it was the School of Musketry, I'll spit that outright.

>> Okay.

>> Was the infantry school, not the artillery school. It was until the beginning of World War II--or I rather, that became the School of Fires or the Field Artillery Center. Also Army Aviation was born at Fort Sill.

>> Oh, I didn't know that.

>> Yeah, Army Aviation was born here. We flew balloons. We had a--and at World War II we actually had blimps here and there's still an existing blimp hangar out by the airfield. And so we've had a lot of first here at Fort Sill. And, of course, being the home of the Field of Artillery, you can go back to World War I to Korea and all those and Fort Sill has played a major role in training artillery men, both marines and army. The marines have trained here since 1953.

>> Very good. Now, you've left out a few names here, and maybe you did that on purpose, but Buffalo Bill Cody, Wild Bill Hickok, Ben Clark, and Jack Stilwell served as frontier scouts--

>> Yes.

>> --at Fort Sill. And it was named for Brigadier General Joshua W. Sill, who was a--he was killed during civil war and was a good friend of Major General Philip Sheridan, who pretty much oversaw the creation of this post, is that right?

>> That's correct.

>> Okay.

>> And if you go out to the Fort Sill cemetery, you'll see a lot of the names of American Indian chiefs that are buried here on Fort Sill. And if you go out on West Range, there's the Apache cemetery where Geronimo was buried. And there's also Kiowa cemetery on Fort Sill. So there's a lot of history here and it goes back both Indian and army history over the years.

>> Now the building we're in is labeled I-See-O. Talk about that real quick.

>> I-See-O was the last Kiowa Indian scout that was hired by the United States Army, and he was a scout for many years and he was retired. He held the rank of sergeant of scouts when he retired. And again, as you said, the building is named after him. Building next to it is Poolaw Hall. It was named after an American Indian and he was a Medal of Honor winner, 30 years service, Sergeant Major Poolaw.

>> Wow.

>> Interesting.

>> Fascinating history and, you know, when you talk about what it means to this area, to the City of Lawton and the surrounding communities, the number that I keep hearing is 1.9 billion dollars a year is what comes through as a result of this military installation being here.

>> Well, I believe that's a right number and it represents salaries and construction and just the maintenance of the facility. But Lawton Fort Sill is--in addition to that money, it's probably got one of the special relationships that you don't find in every community, and that's the Lawton-Fort Sill relationship. Most of the units on post have a sponsor downtown.

>> Wow.

>> And they work together. They do things together. Sometimes it's just a barbeque. Sometimes it's a charitable event. But there's a real good relationship between Lawton and Fort Sill, one that isn't found in every military city and community.

>> Strong bond between military and between the City of Lawton. There's so many things that we're gonna be dealing with here. Let's get some of the business part out of the way before we hear more and more about the Fires Battle Lab. Everyone hears about BRAC. Everyone who has a military post kinda gets a little nervous sometimes when they hear the term BRAC because that represents kind of a reorganization of missions and it's an ongoing effort. How does that impact Fort Sill?

>> Well, Fort Sill, I guess we would say did very well as part of the BRAC process. I mean, we maintained our status as the Field Artillery Center. But in addition to that, the Air Defense School is moving up here. In fact, the first course will be taught in August of this year and it's bringing the two schools together. Interesting enough, if you're a student of history, in 1968 when I was commissioned, both the Field Artillery and the ADA branches were collocated here at Fort Sill and they separated and, as time went by, we're back together again.

>> There you go.

>> So I think it's a--it will be a good thing for everybody concerned because the two branches have a lot in common and they're gonna do a great job working together.

>> And to carry that out is as we tour the facility, it became very apparent that Fort Sill is not just an island in itself. It's very much connected to several military post, military installations around the country, and we're gonna talk about who gets trained here and where they go in their reach.

>> But again, it's a tremendously cooperative arrangement that goes on here. We hear about military post and we think, "Okay, they're after by themselves." No they're not.

>> No, no.

>> Very strong connections. Talk a little bit about that if you would.

>> Well as I mentioned, the Marine Corps has trained all their artillerymen here since 1953, I believe is the date--

>> But this is an army post.

>> Well, but I'll tell you what, there's no difference between an army field artillery and marine field artillery.

>> There you go.

>> Other than the name and there's a lot of good natured ribbing--

>> Ribbing.

>> --going back and forth. But they're both trained here at Fort Sill. Many of the instructors that are around the platform here are Marine Corps instructors. So when army guys goes into a classroom, he could be trained by a marine or vice versa. We've had falcon range here at Fort Sill since I believe 1970, '72 timeframe. The Air Force has been training here for a long time. We now have what they call the joint observer program, a JFO joint observer. That's been going on for several years. A lot of Air Force cooperation with that. The Oklahoma International Guard flies in support of us. We have missions where Air Force will land out at Henry Post Field or one of the other emergency or improvised air fields around Fort Sill and do exercises. We've off loaded the [inaudible] off C-130 and fired it after we off loaded it. So there's a lot of cooperation between air force, army, marines. And since we get Lawtonka a little bit deeper, we'll have the navy at their field.

[Laughter]

>> Very good. He's talking about Lake Lawtonka, which is also a very important part of this area. Well--well that, you just--what you said just goes to show that, you know, there maybe some friendly interactions, some competition between the branches and service but when the tips are down, they work together. Do they not?

>> Oh, they do.

>> And that's the way it should be. We're gonna here again talk about the Fires Battle Lab, and hear more about. I want to mention someone, Nancy Elliot, who's Chief Media Relations Branch at Fort Sill Public Affairs Office. She played a major role getting us together for this radio program and we wanna thank her for that here on the air while we can. And she put together a bunch of information. And for those out there who's not had an opportunity to tour, I don't think they're in the business here of giving tours, but if you ever do that opportunity, you need to come and see what we're doing here. Now we talk on Oklahoma Innovations about [background music] what's happening right here in our own backyard, the technology that's being developed, the R and D that's being done, the technology that's being applied and this is a classic case of things that are coming together right here in Fort Sill, Oklahoma and it's happening right at our own backyard as we say, Gary.

>> And one of the things to think about when you think about military facilities is all the troops out there in the field training. What you're gonna find out when we come back is how the training in the labs on Oklahoma Innovations.

[Music]

>> It's a scientific fact plants have a positive effect on our world, creating oxygen, beauty, and a healthier environment. [Background music] Plants make all kinds of chemical compounds that affect human health. Scientists like those at the Noble Foundation, a biology research center in Ardmore, Oklahoma are examining how genetically enhanced plants can produce their own chemicals for greater potency requiring fewer manmade chemicals. The end result will provide for more effective medicines and vaccines. This genetic study holds promise for plants and crops that will be naturally resistant to bugs and disease. The Oklahoma Center for the Advancement of Science and technology or OCAST invests in projects like these at the Noble Foundation to help Oklahoma scientists continue their quest for new discoveries and development of innovative technologies. Investing, partnering, and promoting Oklahoma science and technology, that's what OCAST is all about. For more information call 866-265-2215 toll free. OCAST, planting seeds that blossom into technology-based economic development for Oklahoma.

>> It's all about Oklahoma technology's research, science and commercialization. This is Oklahoma Innovations on the OCAST Radio Network.

[Music]

>> As we mentioned at the beginning of the program, Steve and I are coming to you from the Lawton Fort Sill area and we're delighted to be talking with George Durham, Director of the Fires Battle Lab. And before we move on, I wanna say a special hello to our Lawton Fort Sill affiliate, KCCU FM. And those of you who live in the Duncan, Clinton, Chickasha, Ardmore, Altus areas as well, the fly ship for all of those facilities is at the Cameron University and we certainly appreciate all of you who listened on those stations. Steve?

>> And don't forget Woodward and Wichita Falls.

>> Yeah.

>> Do I forgot, we had some Texans that get to listen to us.

>> We do. Our friends down Texas get to hear about what's going on up here in Oklahoma specifically a lot in Fort Sill. Fires Battle Lab, when you hear the name, the title you think, "Okay, I think I know what that means," then you start thinking about it and think, "Well maybe I really don't." And so we have George Durham who's here to tell us about what the Fires Battle Lab is and what it means for America's fighting soldiers.

>> And what we might do per preface before we get started is put your mindset into videogame mode. It's a lot bigger than that but in the graphic sense of things, that's probably a good way to help set the listeners mind for this.

>> Okay, well, you know actually the Battle Labs go back to 1993. We were formed by General Franks who was the trade out commander, and the purpose was to take a look down the road if you will. Take a look at technology, how to insert technology into the army, how to insert technology into training. And over the years we've--we'd done a number of different projects. In 2003, we started something that we called the Joint Fires and Effects Training System. And we did that with the University of Southern California and a congressional plus up by Senator Inhofe to get us started. And what we were looking at was, what is a better way to train? Most everybody knows bogging into a classroom, looking at the blackboard, hearing somebody talk. Our idea at the time was what if we got people into an environment? In the case of a soldier, you

put him into a room that looks kind of like where he's gonna go fight and you have the terrain that he's gonna fight in rather than the terrain at Fort Sill. And you give him the tools with simulation to do things that he might not be able to do in the classroom. For instance, he's sitting there with his binoculars or something that looks very much like his binoculars and a radio and he's talking to other people and he's having to make decisions. Now, we call that cognitive training, cognitive thinking, but it's the idea that you have to do something besides procedure. We want, you know, this person say, "Okay, do I fire that mission or do I not fire that mission, because the situation has changed?" So we've been working on this for a number of years. We have another laboratory downstairs that we call our JCATS, and it allows simulation games to be played. Now, games not in the terms of video games.

>> That's right.

>> But games in terms of an exercise that's computer-driven and computer-supported.

>> Almost life sized simulation.

>> Yes.

>> In a lot of these.

>> And for instance if you go into our open terrain module, you could be--you could do most of the training that you do out on the field in that module, and the nice part of that is if it happens to blown very, very hard like it does in Oklahoma from time to time and there's a fire hazard, you can still train. If something breaks, you can still train. On the other hand, we always remind people that simulations never replace field training.

>> That's right.

>> You still got to go out, get a little dirty, you know, get down and close personal to the ground, but this gets you ready to go to the field. And that's what our simulations training is all about, get you ready to go to the field, getting you ready to go into a different environment than you're comfortable with.

>> And way too good for our listener's mindset. I was trying to do this for Theater of the Mind is imagine walking on to a Hollywood sound stage, you know, in a smaller environment than large sounds. Maybe you have your own professionally designed environments where they're sitting actually in a situation as though they were like in the Middle East for example.

>> Right.

>> And they have this huge screen that surrounds them and these live monitors that surround them with all of the natural environment. It's almost like if you've ever been to an IMAX Theater. Take that thing--that experience on IMAX and put that in a training module and that's kind of what you're experiencing, right?

>> Exactly, and then think about you can put the desert terrain up on the screen or if you're going to some place else in the world, you can put that terrain up on the screen, so people are working in the environment where they are going to--and usually fight.

>> And you're dealing with ground and air applications.

>> Exactly.

>> So it's like the real world in a simulation situation.

>> And again, while we're training in that environment, you can do things that you can allow a person to make a mistake because that mistake doesn't cause anybody their life. Nobody gets hurt. It's a good learning objective. Conversely, you can put situations together or a person has to make decisions similar to what he has to do out in the field. Again, a very realistic environment as close as we can do. As you said, we use Hollywood's--We've used the Hollywood set design. We're using the best of technology right now. And the nice part of that is, is it can change.

>> And here's the cool part. All of the training that is going on is recorded so that when the--

>> It can be critiqued.

>> It can be critiqued in a classroom environment. They can go back and look at the mistakes, look at the good things they did. It's all evaluated and then you go back and do it again and hopefully make improvement.

>> We do the AARs, and as we tell everybody we look at the good, bad and the ugly.

>> Now tell them what an AAR is?

>> After action review.

>> Okay.

>> Very good.

>> Here we go.

>> We got about a minute left here.

>> Just under a minute.

>> Okay, well let's--along that same thing, this theme rather, what you're doing is you're training military personnel enter into a very difficult environment and preparing them in a much safer place to make decisions that might impact who's [background music] injured whether they have issues with friendly fire, whether they have to make decisions based on whether it's going to impact civilian lives, innocent lives. And at the same time, you're doing this in a way that saves the United States' taxpayer a lot of dollars. George, we're not gonna have time. We're gonna have to come back then after the next segment.

>> Back in a moment on Oklahoma Innovations.

[Music]

>> Now in its 13th year, this is Oklahoma Innovations on the OCAST Radio Network.

>> Breast cancer is the most common cancer among women in America. The good news is the chances of a woman dying from breast cancer are declining, thanks to early detection. In Oklahoma, biotechnology research is instrumental in the evolution of a new innovation that will assist doctors in detecting a woman's risk of breast cancer at any stage of her life. There's support from the Oklahoma Center for the Advancement of Science and Technology, a biotech cancer risk and treatment company developed an oral mouthwash designed to collect DNA for cancer gene analysis that can identify women who are at risk. Improving health and wealth, that's what OCAST is all about. We're looking for Oklahoma researchers serious about investigating new products, services and processes that improve the quality of life and the economy for Oklahomans. For more information, call OCAST toll free, 866-265-2215. Monitor the heartbeat of our state's research, it's the pulse of a healthier Oklahoma.

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>> Research and development, technology transfer and commercialization creating high paying jobs in Oklahoma is what OCAST is all about. This is Oklahoma Innovations on the OCAST Radio Network.

[Music]

>> This program we're learning about the Fires Battle Lab at Fort Sill, Steve.

>> That's exactly right. You know before the break, Gary, we--I asked George Durham a series of questions and didn't give him time to answer before we went to the break. That's my fault. I apologize, George. But tell you what, we were talking about the savings not only in lives but in cost to the taxpayer. Talk about that if you would please.

>> Okay. Well again, in simulations you can do a lot of things. You can fire as many rounds as you want to and guess what? Those rounds don't cost anything.

>> There you go.

>> You can fire rounds that you might not wanna fire in other locations. For instance, again I come back to Oklahoma in the summertime. The winds are blowing, it's dry conditions and all that. Sometimes we don't wanna set the place on fire. So again, you can do things in simulations that you might not be able to do in the field at a particular time of the year. We can run aircraft in simulations and they can drop their bombs and they can do all the things they wanna do in helicopters. And again, the operational cost per hour for a live helicopter or a live airplane is expensive. Simulations cost pretty much no cost other than the operator. So, there is a great savings on this. But again I wanna emphasize that it's a training system that gets you prepared to do certain work and it gets you ready to go to the field and getting ready to go to combat. Sooner or later, you still have to go out there and do the real thing once in a while.

>> You do, but let's talk about realism and we've touched some of that a little bit already. I can say from personal experience having been through it just not too long ago, I was looking at a period that I was sitting in the cockpit of an A-10 commonly known as a Warthog I guess.

>> Yes.

>> I think they still call them that, an A-10 attack plane. And he went inverted, and I suffered a little vertigo while I was in that simulated situation.

>> Oh yes, and I mean there's driver simulations that allow a soldier to learn how to drive big vehicles like an M1 tank or something along that line. And again, you can drive 50, 60 miles on one of those, doesn't cost anything and you're not turned up the equipment while you're learning to drive. You know then when you actually put the soldier in the vehicle, he's pretty much prepared to drive. We don't like to do things that are gonna damage equipments. Some of those things have to be done but you can do them in a simulation environment and not tear up the real equipment. But I think the real place where you're going here is that you have simulations now that allow people to work together. You went into our Fires an Effect Center and you notice there were--set up in there where a group of people would be working together and they would be planning operations and they'd execute the operation. And again, you have an opportunity to see their planning process. You can film it, go back, review the planning process.

>> You can execute their plan, and again you can critique it based on, not something that somebody thought they saw, but you can pull it back and you say, hey, this is exactly what happened, this is--look good, or this isn't so good.

>> That's right.

>> So it gives you a real opportunity to not only train but to critique people's training and where they're going with all that. What's the future in simulations, who knows, you know what I mean.

>> It's wide open, isn't it?

>> It's wide open. It's kind of what your imagination lets you run with. And that's the nice thing about being in a battle lab is that we have the opportunity to do that. We're not limited by, well, this is our requirement for the day, you know. We can sit there and say, gee, what if we did this, where is it gonna go?

>> Now you mentioned something at the beginning of the program about how far to the future that you're doing a battle planning. And some of our listeners may say, well, how do you know what the terrain's gonna be like? How do you know what the scenario's gonna be like when you plan that fire in advance? Why do you do that?

>> Well, we look at projected organizations. Terrain is--somewhat terrain. I mean, if you look out there, you say, okay, the world is divided into 4, 5 different types of terrain. You can look at that. You can say, okay, where do we wanna go with weapons? What do we need in a weapon? We're looking at broadly something called electromagnetic gun. We're looking at directed energy, things like that. And we're doing it in simulations. I mean, we don't have an electric magnetic gun to play with right now. We don't at Fort Sill. And there are directed energy things that are out there, some of them are non-lethal. You can disperse a crowd with directed energy and not hurt anybody but you sure don't want--they don't wanna hang around there, and that does the thing.

>> It's more intimidating or anything.

>> Yeah. So, you know, again we have an opportunity to do that in simulations. You know, some of it works, some of it doesn't work, you know, but it--again, we're doing it in simulations. We're doing it checking out concepts. Are we always right? Probably not, but we're not always wrong either so it gives you an opportunity to say, what if.

>> That's how you learn though.

>> Yeah, and that's how you learn.

>> Well, I wanna talk just a minute about what I refer to as the room. And what I'm referring to is a room that has been designed to look much like any room in our current theater of war which would be in Iraq and--or possibly Afghanistan. And I understand that we've had soldiers who have come back from Afghanistan and Iraq and have gone to this room for training and have told you that this looks very much like what we experienced when we were over there. So, what's the benefit of that?

>> We built what--and we called it our urban training module, but we built it with the idea that it was not particularly Iraq, not particularly any place. It was just kind of a representation of that part of the world. The nice thing about it is, is you can take that room, change the interior decorations a little bit, put a different terrain in the windows out there, and all of a sudden you could be in Europe, you could be some place else in the world. So it's a very versatile type of training environment. But what it does get you used to is the idea of fighting in an urban environment.

>> There you go.

>> It's not particularly important where you're fighting it. It's that you're fighting in an urban environment and it gives you the challenges of fighting in an urban environment. And again, this is designed for field artillery men and what they do, but it could be just as easily converted over to an infantry man--

>> Sure.

>> --or other branches as a service that have similar problems in an urban environment.

>> You're using cognitive learning to teach soldiers how to deal with very difficult situations, making decisions, and under a lot of stress. You can even raise the temperature in that room to 120 degrees much like it would be in the desert.

>> Exactly. And we've done another thing that I think is very interesting and it's gonna be some time down the future, but we have linked our simulation capability with Fort Rucker where Fort Rucker has a flight simulator and that guy that's flying his helicopter is linked in to our close air support module and we were linked in to Fort Benning at the same time. So if you take that to the next level, you could have 4 or 5 schools, the officers training at those schools or the soldiers training at that school all working together in a simulated environment all from their home stations.

>> Wow.

>> Now, that's pretty powerful when you think about it.

>> Many hundreds or even thousands of miles apart.

>> Well, and you know, it's not a technology issue. It's simply a scheduling issue.

>> There you go, getting everybody's schedules arranged--

>> And we know we can do it technically.

>> You bet. Well you said about, since day one I guess, I've heard the number about 9,000 troops not only from just the United States but from some of our allies had been through these training simulators. Is that correct?

>> I believe that's the right number. You know, we always talk about the--our friends from Canada come down here probably 4 times a year to use our facility. We've had soldiers from just about every division come here to Fort Sill to use it for pre-deployment training. And most recently, we've had 2 units that came to Fort Sill to do what we call reset training. In other words, they came back from theater and they're trying to get their skill sets brought up to standard and they come here to use that facility because it's pretty unique and it's--and it allows them to do that type of training.

>> There you go, which brings up the question of other countries. I mean, we've got a lot of allies out there who help us and it rely on us to help them and we make this available to them. Now, we don't give them the equipment. We don't sell or anything like that, at least we haven't up to this date. But we do make it available for training purposes. Is that right?

>> Well, yes and no.

>> Okay.

>> I have to tell you that if I had the sales rights on this thing, I probably could have sold it to every allied--

>> Not bad.

>> --visitors that's come through Fort Sill.

>> Yeah.

>> But we don't do business that way. But most people that come through would very much like to have it. The interesting thing is there's nothing in there that's proprietary, so I mean, they can take that idea, go back to their country, and say, okay, build something like this. Everything that you saw in there was designed, could have been done by anybody but it has just happened to be done by the University of Southern Cal, and the equipment is off-the-shelf technology. So I mean there's nothing in there that is unique other than the software and some of the software and stuff that we've designed here at Fort Sill, some of these have been designed at other locations. But the software is something that I think justly so we're very proud of because it's combination of taking off-the-shelf technology or technology [background music] that's already been built for the army, improving upon it, and it's been done in many cases by people that live right here in Lawton, America.

>> Now I wanted to think for a moment. Imagine taking the applications that we've been talking about here and putting them into the public classroom. We're gonna talk about that and more about education when we talk with George Durham, who's the director of the Fires Battle Lab here at Fort Sill, when we return on Oklahoma Innovations.

>> This is Oklahoma Innovations on the OCAST Radio Network.

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[Music]

>> Steve Paris and Gary Owen in Fort Sill, we are at the Fires of Battle Lab. We're talking with George Durham whose director. And Steve and I have just a great time of touring of the facility today and actually it was almost wild kinda get to experience what this military people are going to [simultaneous talking] in training, you know.

>> Well, it's a--Gary it's a great eye opener to understand the type of technology that's being applied here and what it means not only to America's fighting troops but what means to local economy, what it means--

>> Absolutely.

>> --for the state of Oklahoma, the City of Lawton. And again, George Durham has a good grasp for that and he have some things that, I think he wants to tell us about the future. Working on concepts, trying to figure out how to develop organizations so that we're best prepared as best as we can be to get--so that our troops can have an effective plan. Talk about that George.

>> Alright, you know, one of the things I think is important to remember too is a lot of what you seen downstairs in the training labs is local contractor support. We have Stanley and Techmasters Incorporated, the Eagle. They've all been part in partial with the development of this and some of the software innovations down their. I'll tell you, you're second to none. I think we have the good fortune of having some very, very talented people in this area that truly understand how all that stuff works and making it work. So, you know, you're not talking about, well we have to go out to California, we have to go some place else. A lot of that is locally grown. There's some stuff that came in from my favorite contractor named Buzz Makete [phonetic]. But [laughter] that's an outward up in Oregon.

>> There you go.

>> But a lot of good folks here Lawton, Oklahoma made that happen.

>> And those folks hire other people?

>> Yes sir.

>> And that improves the economy. So that's a very important part of what's going on here too. But--

>> Yeah. Now the other thing, you know, I don't want to over look is that while we have a great time working simulations and training devices, and all that, you know, our primary mission is to take a look, as I mentioned earlier, to take a look out in the future. Take a look at those future organizations, weapon systems, and really experiment with them and come away with best information that we have so that we know that an organization as we envision it will work or the technology that we envision for that organization really adds to it or we know where we need to

fix, communication or a particular piece of software. So that's our main mission and we sometimes keep talking about the training simulations and forget about our main mission. But we're ready to start an exercise called earth, wind, and fire.

>> Heard a little bit about that one.

>> Alright, we're gonna start that in September. We'll have about 350 folks here will be linked with Fort Rucker, Fort Bliss, the Air Force, and we'll be looking at real world problems in terms of aerospace management, organizations, and we'll experiment. We have the right people looking at it. We'll put it together. We'll do 6 or 7 battle runs. And from that, we'll put together a very detailed report that not only goes back to our boss here at Fort Sill but eventually we'll be brief with the army Air Force war fighting talks in January of next year. So we have a very crucial mission that is real world oriented towards the force of today.

>> And goes way beyond, this installation, goes out actually to--around the world, when you deal--when you're talking about the impact it could have on US troops around the world.

>> Sure. And again I--you know, the fact that we're gonna have army, marines, navy and air force personnel, all working together to solve those problems is pretty unique.

>> There you go.

>> Yeah.

>> George is--when we first talked this morning, you mentioned you're interest in education, how some of the things that you're being applied here at the Fires Battle Lab, could have an impact on common education and other areas of education. I'm just gonna just let thought open and say, tell us what you know?

>> Okay.

>> Okay.

>> Well, now that you've been through it, you probably understand now how I can have this thought that, you know, kids today grow up on computers. They're very computer oriented and all that. So if you had the ability to take this immersive training environment that we've created out here, sure you're not one to teach kids how to shoot things, but what you are interested in is creating an immersive environment where--and I always use the example of the young person was in a room that looked kinda like some place in Philadelphia, and they were talking to virtual players while they were growing up to constitution of this country. You know, I think a child would understand far more about why the constitution was written the way it was, the bill of rights, how that came about, or jump over to physics. And you're actually sitting there discussing with Isaac Newton, his theories or you're talking to Einstein. And this is all possible in simulations. And some how or the other, I think you know, that might be a little bit more interesting than just--

>> Yes.

>> --in the classroom--

>> Oh, yeah.

>> --looking at the chalk board or a whiteboard as we call it today, and somebody saying, read pages 20 through 50 and report back tomorrow, what you read. So I think that what we're doing

here at Fort Sill for military training has a direct application in education. I particularly think Oklahoma has a unique opportunity because we have a lot of capability as far the fiber network around the state and we have a lot of rural schools that could probably benefit from--

>> Yes.

>> --getting that type of education opportunities. So, you know, if OU or Cameron, or OSU, anybody have that capability and could broadcast it, you know, for other schools, I think that would be a gigantic step forward. And that's--as a tax payers of private citizen that's what I kinda like to see as take this whole thing that we've been developing out here, 'cause I think there's a real place for it in public education and it would be nothing but a vast improvement over the way we do things today.

>> But one of the things we know is that young people learn better by interactiveness.

>> Exactly

>> And so, and you are giving them a technology that they are already used to, they're comfortable with, and they do learn faster. So I've been proven that--

>> Sure

>> --with computers, you know.

>> And you know, today you turn on the TV or you watch a movie, virtual players are all over the place. I mean, that's pretty basic technology today. And so taking the step from Thomas Jefferson and Ben Franklin or somebody like that into a virtual player is not a step too far. And again, I think, kids would relate to that.

>> If I can over simplify, it's one thing to sit in a warm classroom where you're, you know, a little bit sleepy maybe, we've all been there and you have a teacher who may or may not be committed to what they're doing. They maybe thinking about the next class, telling you that George Washington cross the Delaware in a boat, that's--you might remember that for a little why, but if you got to sit in the boat, virtually, and experience that with George Washington, you are gonna' remember that. And that's I think to you're point is that if you actually experience it or at least simulate the experience, then that's gonna be something that we retain, and that's what you're finding in you're training effort here in a military situation.

>> Right.

>> All the soldiers that go through this kind of training will tell you in a heart beat, to use my favorite expression, that you know, they really--they learned.

>> Yeah.

>> And soldiers that use it for the first time will say, "Gosh, I wished I'd had this--

>> Yeah.

>> --before I deployed, to be getting such a great training opportunity."

>> Help them--yeah.

>> So you just can't help but wonder if you could take that to--out to the public education sector, you know, whether you wouldn't get the same reactions, the same experience. And I think that's kind of the future of what we're doing.

>> There you go.

>> Well, I'll tell you. You never know who's listening to this program. There are probably some software designers out there, right, going "I had to find out how to get a hold of these people, see what they're doing," you know.

>> And maybe some ledge sluggers [phonetic] out there listening too.

>> That's right.

>> Maybe something they need to about. George, you've been an absolute delight. This has been an enlightening day for Gary and me and we appreciate this opportunity. We always ask this, and you've already touched on it a little bit, but less--instead of just preparing our trips for the future, let's think about the technology. Let's go out 5, 10 years down the road, where do you see this going? More wide spread maybe?

>> Oh, I think it's gonna get more wide spread. I think that--goes back to my point about linking two or three different schools together, where you have infantry artillery, intelligence officers all training at the same time, army aviation guys all working at the same time. You take that to the next level and you're gonna see the Majors and Lieutenant-Colonels that are in school, service schools, maybe they link together working exercises together, you know. The future is unlimited. It's just a matter of, you know, where your imagination takes you and how much you want to do it.

>> That's really awesome. And I have to tell you, we have our own radio simulator here. Did you know that?

>> We do?

>> Yes, I'm gonna put myself in a helicopter. [Background noise] [Laughter] And you are below the ground and you're firing, you know. So no, I'm just kidding.

>> He just made that up.

>> I did. [Laughter] Well it's been a lot of fun and we had a great experience here and we thank you so much for your time George. A wealth of information here and well, I certainly like your vision on education, that's marvelous. Steve we've got to get out of here.

>> Okay Gary.

>> And we hoped that you have learned something and have a bigger appreciation of what's going out here at Fort Sill, [background music] and the Fires Battle Lab. See you next week on your science radio magazine, Oklahoma innovations. Have a good week.

[Music]

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