

Radio Show

Air Date: August 15-16, 2015

Guests: **Marty Quinn**, Oklahoma State Senator, and **J.R. Ruparecht** and **Casey Norris**,
HE&M Saw

>> From the OCAST Radio Network, this is , 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 science and technology. The OCAST mission is to identify and fund promising research and technologies that allow Oklahoma to compete in a global market economy from our own backyard. This program features some of Oklahoma's most gifted scientists, inventors, entrepreneurs, manufacturers, educators 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 Tessa North.

[Music]

Thank you so much for joining us this week on . The last time we were in Pryor we were at the MidAmerica Industrial Park, and we're back in Pryor once again. We call this Phase Two of our tour, wouldn't you?

Yes, I would say so.

Yes, we have an interesting subject later in the program. Now you would think how can you take a radio show, like ours, and talk for nearly an hour about band saws? But this is such a cool organization, we had a cool tour.

Absolutely.

Learned some fascinating things about how this company evolved and where it is today, and I think you're going to find the program very, very interesting, so stick with us. But before we get started the Oklahoma Technology Showcase coming up pretty soon in Broken Arrow, and you, and we have Leah Maloy back with OCAST to talk about that. So, ladies, I'll let you take it away.

Yes, that's right. Well, as Gary mentioned, the Tech Showcase is coming up very soon on August 26th at the NSU Campus in Broken Arrow. We have Leah Maloy here to talk about the Showcase. She has been part of the Planning Committee for it so, Leah, could you give our guests a little bit of a review of what the Showcase entails?

Absolutely, I can. This is our fourth year to have the Showcase and we're excited to be back in Broken Arrow this year. We're going to start out with One Million Cups of Coffee from Tulsa, it's a new organization and they are a group of entrepreneurs. They get together and kind of talk about their ideas.

And that's not actually serving one million cups, the organization is called One Million Cups?

Right, I think they try to serve one million cups across the country, but after that we'll start the Showcase and we'll have six companies from OCAST that will be giving their story and talking about their journey and their struggles and where they are now and their excitement to tell their story. Those companies, I'll just run through them really quick, they're Compression Solutions,

Live Pet, We Go Look, Moncierge, and Advantage Controls, and also TechTrol. So we try to get companies from across the State to have a good variety and a good representation.

And these companies are all vastly different.

Vastly.

We've got some hotels, service, and pet foods and all sorts of new things.

Exactly, all over the board. At lunch we're going to have Google as our keynote speaker. The Mayor of Broken Arrow will also be there to give a little talk. And then after lunch is done we're going to have a robotic show, so should be pretty fun.

Yes, the Showcase will end with, like Leah said, with the robotics demonstration and I think actually there's going to be a competition aspect to part of that.

Yes.

And then there's also going to be a dessert reception.

Yes.

And we're giving away some scholarship money to some undergraduate interns, so I think it's going to be a cool event. It's a three-quarters of a day thing, two-thirds of a day event, high impact, lots of time for networking and lots of great companies from all over the State that will be here for you to learn about, talk to, perhaps partner with in some way.

Awesome. Leah, you brought a special guest ...

I did.

... too, because this is kind of his region.

Right.

We're delighted to have Senator Marty Quinn. Nice to have you aboard and be a part of our show. I understand you're a regular listener of the program.

Been listening to you for a long time.

Great.

I didn't know what you looked like, but ...

Well, see, and I spoiled the figment of your imagination, didn't I? Most people think I'm about 6' 5", weigh 280 - I'm sorry to disappoint you.

I thought you were blonde.

Yes, sorry about that. So tell us a little bit about you because you've had quite a tenure in the Legislature, so tell us about your background?

Just managed the fifth year at the Capitol, this is my first year as a Senator. Was fortunate enough to spend four years in the House of Representatives, made a lot of good friends on the House, a lot of quality people over there. I enjoyed building those relationships and the rapport that you have to have to move legislation. Hated to leave in many ways, but at the same time I felt like being a Senator for District Two and representing Rogers and Mayes County, when you look at the opportunities for Northeast Oklahoma much of that involves Rogers and Mayes

County, so a world of potential and just felt like it was the right move. Hated to leave my good buddies on the House side, but we've made a number of friends on the Senate and hope to be even more productive there.

I've got to tell you we've been very impressed with the layout at the MidAmerica Industrial Park, the economic growth and all the exciting things that are continuing to happen here in this region. You should be very proud of that, I'm sure.

Absolutely, I mean you've got so many good people, whether you're talking to Dave Stewart or the individuals that are involved in the career tech or those things that you're looking at to expand some of the University system. There's just a world of potential available and until you actually get out here and do some of the touring that we were fortunate enough to see today, Oklahoma is more than capable of meeting some of the world needs that we have, whether it's from manufacturing standpoint or whether from the technology standpoint we're more than capable and it's reassuring to see that.

Did I hear - we were kind of collaborating before the program with some of our guests here today - that you have a real strong interest in transportation, is that right?

Sure, you know, I think it's one of the basic needs. Obviously, we need education, as well. I have worked - because some of the projects that I worked on as far as a House Member was concerned - Secretary Ridley is someone who has done a tremendous job for the State of Oklahoma. On the House side I was there for four years on the Transportation Committee. And it's just one of those things that you saw the magnitude of work that they do, the improvement that they made once they got the proper funding available to the transportation. And there's still a lot of work to do, whether you're looking at new bridges, repairing bridges or repairing roads there's lots that they still need to accomplish, but Secretary Ridley and Mike Patterson have done a tremendous job. And it's just something I think it's a basic need that our communities need if we're going to thrive, whether you're talking about Broken Arrow, whether you're talking about Northeast Oklahoma, that's just one of the things that I have an interest in, along with a number of other areas, education being one of those. But it's - we've been very fortunate to have the leadership that we've had at the Transportation Department.

I know Leah has been working at the State Capitol on representation of OCAST, along with her boss, Chad. Talk a little bit about your collaborations when it comes to science and technology and how it all integrates together with like for example this region? It's incredible what we've learned so far.

Right, our job basically is to make sure that the Legislature knows what we're doing and what's going on in science and technology. So that means that we're at the Capitol every day attending committee meetings and meeting with members to make sure that they understand the needs and the opportunities that are out there.

Cool.

Senator, you mentioned that you have - you're keenly interested in education, and I think one of the things that we learned when we visited the MidAmerica Industrial Park was that they have a really strong or they're developing a really strong relationship with public schools here. They are reaching out to students at the high school level to start to expose them to all the opportunities that are available here in Pryor and the surrounding area, and I think that's really cool and I think that speaks a lot for the future of these communities. You know, they are making an active effort

to really teach these children all of the opportunities that are available here and then to give them the skills that they need to go to work in these high skilled jobs. So I think that's really cool and it seems like your region is on a really good trajectory and hopefully we will continue to see growth in our skilled high-wage jobs here because the community here is sort of - they're teaching, they're starting to grow their own, making a conscious effort to do that.

That's a great point. I mean we are fortunate - I'll use two school districts as an example and there's more - but locally Don Raleigh is the superintendent at Pryor, first of all, he's a quality individual and I couldn't say enough about Don, but he's very capable in the job that he does and has a passion for the kids, themselves. I think that that's extremely important, and he's just done an overall good job. And he's working with Career Tech, for example, and it's already been mentioned in some of the conversations we've had that not everyone is college ready, not everybody needs to go to college, and some of our folks at Career Tech have stepped in and made some improvements in that sector to where that they can specifically design what it is that this community, MidAmerica Industrial Park needs to fit those needs. It's not any different when you move over to Claremore, Superintendent McClaren, there's lots of successes educationally at that location. They, themselves, have done a good job in producing a good product in many ways. So when you look at the Industrial Park at Claremore, the one here in Mayes County, and then you go down to the Port, I mean there's thousands and thousands of jobs that are there.

Yes.

But there's also thousands of jobs that are needed.

Right.

So it's going to be important for those educational models to produce the product. I mean when we go out and shop we want to buy what it is that we want to buy, and it's not any different for that manufacturer to say this is the type tech person that I need, this is the support that we need, these are the kind of individuals that we want to hire. And then it's up to our local communities and our local education systems to be able to go and sell that to those individuals, those young men and women that are in the classrooms and say, hey, here's an opportunity. You no longer have to go to the university system to make \$100,000. You take three years or four years or whatever training in this area and you can be very successful without the college degree. We want a college degree if that's what that person's makeup is, but if they're more of a hands-on individual then here's an avenue that you can be successful at, as well. And I think we've missed the boat on letting those young men and women know that you can be extremely successful in a different avenue.

Well, the beauty of this area, too, is the quality of life because it's rural in many aspects and a lot of people enjoy that. They're not fighting the hustle and bustle of the big cities, but then there's a lot of young people who that's what they want, they want that lifestyle, they want to live in the heart of a downtown metropolitan area. So Oklahoma in general I think, whether it's Oklahoma City, Tulsa or you're taking an area like Claremore or Pryor the opportunities, diversification I guess, take your pick, what lifestyle do you want? You still have a high-paying job, you can raise a family here, and you don't have to leave the State to do that. And because of the economy we have built here in Oklahoma and we continue to diversify that even makes it more attractive. Now when we look at attracting business from outside the State to grow jobs and high-paying careers here, let's take for example Google, who has implanted themselves and from

what I understand planning to continue to grow at the MidAmerica Industrial Park. That says a lot for a major organization like that of what we have here in Oklahoma, right?

I agree. Leah and I were talking on the way over that when you look at the corridor of Northeast Oklahoma you have a huge recreational component, you've got Grand Lake just up the road, and as you go down the eastern side of Oklahoma there's lots of water, that's going to become a huge topic in the future. But people, resources, recreation, housing, labor force, it's all here.

Senator, we appreciate you taking time out of your busy schedule and, Leah, thanks for coming back and being on the program ...

Absolutely.

... and bringing the Senator along. When we come back we're going to be talking to a couple of people who represent HE&M Saw in the Pryor area, and I'll tell you what, what you're going to learn about the band saw manufacturing business is really fascinating, what we didn't know and what we took for granted. When we return on your Oklahoma Science Radio Magazine, .

[Music]

>> When I invented my new product I faced a lot of challenges from securing capital, to recruiting qualified employees. It's a very complex path from innovation to the marketplace and I needed some help navigating the process.

>> The Oklahoma Center for the Advancement of Science and Technology and its strategic partners, the Oklahoma Manufacturing Alliance and i2E help entrepreneurs. They support existing and startup companies so they can succeed and create jobs, increase per capita income and grow the State's economy. In its 26-year history OCAST has funded nearly 2,500 research projects and provided support to hundreds of Oklahoma-based companies. The investments made in these businesses yield high returns for our State by strengthening and diversifying our economy. Advancing innovation is investing in a positive future. That's what OCAST is all about. For more information call OCAST toll free at 866-265-2215 or visit us on Facebook or our website at ocast.ok.gov.

>> Now back to with Gary and Tessa on the OCAST Radio Network.

[Music]

Once again, Tessa and I are coming to you from Pryor, Oklahoma, and now we're going to speak with Casey Norris, who is IT Manager, and J.R. Ruparecht - is that right, did I pronounce that - Ruparecht -- that's a hard name, the way it's spelled and the way you say it - Ruparecht, I've got to remember that. Okay, and you are the Applications Engineer, right?

Yes, sir.

And this guy has got one whale of a history with the company.

Definitely, he has been associated with the company for, I don't want to date him but for quite a long time and he has been employed by them for almost three decades, which is pretty amazing. And, of course, that company that we're talking about and that we're here visiting today is HE&M Saw here at the MidAmerica Industrial Park.

See, that's hard to say ...

It really is.

... when you're trying to say it real fast, you can't say that - MidAmerica. Okay, so let's start with J.R. because you've got a long tenure, I mean you started as an Associate and then you came aboard as a fulltime employee.

I was a user.

You were a user, what does that mean?

I had the good fortune of being involved with custom steel cutting and was in the market for a band saw, and a fellow associated me with Jerry Harris, the Founder of the company. I met him in 1976 at a machine tool show in Chicago, and in March of '77 I made my first trip to Pryor, Oklahoma. And met the folks at Harris Engineering & Manufacturing.

And that's where HE&M ...

HE&M Saw, so we're an engineering company first and a manufacturing company second, and what has separated us from everybody else in the industry has been our engineering.

Yes.

We've held more patents than anybody, and in my opinion for whatever it's worth Jerry Harris absolutely revolutionized the band sawing business.

Now he started this company in 1964 in Livermore, California, right?

He did, in a two-car garage under his house.

Really?

With slave labor, 10-year-old son, 12-year-old son. Graduated from there into one of those little strip places where you have 1,200 square feet.

Wow.

He had 1,200 here, 1,200 there, pretty soon he had five or six of them. And in 1976 we had put on a dealer here in Oklahoma, our first one outside of the left Coast, and he interested the old man into coming out and visiting Pryor. We still had this - the guard towers were still up back then.

Oh, my.

Because this was a POW camp back in the day.

That's right.

And the Germans were the POWs and they rented the Germans to the Amish folks to help them farm.

No, kidding, yes.

Yes, and so when I made my first trip out here we still had the guard towers up and some of the fencing, and I thought to myself as I walked into that 6,800 square-foot facility with 13 people I thought what am I getting myself into?

Yes.

And look at us now.

Yes.

We are the number one company in the country.

And you employ just under 200 people, the building's square footage is, what, 250,000 square feet combined?

More.

Or more, yes.

Way more, it's more like three-and-a-quarter.

Wow.

And so you - we're here located today, in Pryor like we mentioned, but you guys also have a presence throughout the nation, is that correct?

Throughout the nation, and we employ regional sales folks that take care of a territory and then we also have - I think we're up to 16 service techs that are strategically positioned throughout the country and that are our employees and, therefore, we can control the quality of the work and when it gets done, as opposed to our perceived competition who uses their dealers and their service folks. We control everything. The old man was a control freak, I mean it was tough, it was tough, but I'll tell you the way he built the company with cash only, the way he created comfort levels for the employees by knowing that we weren't going to go out of business due to debt.

Still that way today, by the way.

It's still that way today. We are a cash only company, and I know that's unheard of in today's - but there's a lot of comfort for the employees to know ...

Oh, sure.

... that we're not indebted to anybody ...

Security, absolutely.

... except the employees and the people we work with.

Speaking of employees, before we go to break I want to get Casey Norris on, your colleague who is IT Manager. Casey, nice to have you on the show.

Hello.

Tell us about your - how you came aboard?

I came aboard, I went to a robotics tournament awhile back. I was involved in robotics in high school and in college, and I went to a tournament that my brother was competing in in Arkansas, actually. And during lunch I was just talking to people related to the team we were watching and talking about my college experience and what I was doing now because I had recently graduated college, maybe within two years. And that's when I met a person that introduced me to Pryor, Oklahoma and HE&M Saw, and that was Doug Harris, our current Owner. And he was just kind of asking me where my career was headed and what I was doing, and I was trying to find a fulltime placement at a job. I was part-time at an employer at that point, and he said, well, come on out to Pryor Monday, we'll let you talk to some people, we'll get you a spot. And, you know, chin hit the ground. And he said, well, you do know who I am? And I had no clue and, truthfully, I didn't know where Pryor was and I didn't know the MidAmerica Industrial Park was here, but I

learned very quickly. I called up Monday, I made an appointment, and by the end of the week I had a job.

Wow.

And it was by happenstance, I kind of giggle, you know, you'd been dressing up for two years trying to get a job, putting on your pretty face, and I went out to Arkansas in a hoodie and jeans, you know, hair pulled back in a ponytail and I got a job. So it was pretty interesting.

Wow. And you carry a pretty heavy responsibility yourself, tell us what you do?

Oh, I manage a Department of five people, but we do handle all of the technology in the whole company, so everything from pulling cables to programming custom software. So we support all the service techs, we do integration, web design, social media, just a little bit of everything. We kind of laugh and say if it runs on electricity it comes through my Department, so.

Wow. And I understand, JR, that every employee is required to be on the floor at least a week, is that right, to get kind of ...

Well, the old man had a policy that when you came onboard you had to run a band saw for a week in the Cutoff Department so that you knew what we did for a living.

Yes.

And some of that has gone by the wayside, of course, but I want to tell you something, it's nice to know what you do for a living.

Well, yes, you've got to - you have to know the system for sure.

Absolutely.

Listen, we're coming up on a break, but I tell you for our listeners where we're going with this is when we come back I want you to think about, look around where you are right now, whether it's in your office, in your car, if you wear glasses, if you wear jewelry, it doesn't matter. Somewhere down the line in manufacturing a band saw was involved in what's in your world. We're going to learn more about that when we return on .

[Music]

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

[Music]

For over 50 years HE&M Saw has been the leader in new band saw technology, setting the standard with more patent innovations than any other band saw manufacturer in the world, and they're located in Pryor, Oklahoma at the MidAmerica Industrial Park, which is known as the State's largest industrial park. Our guests, two popular people around here, Casey Norris, who is the IT Manager, we just talked to right before the break, and J.R. Ruparecht - did I say it right that time? Okay, who is the Applications Engineer, but he wears all kinds of titles because he's been around a long time. Guys, let's kind of talk about your customer service. I think this is what sets you apart, what makes you unique. J.R., take the lead on that because this was a fascinating story as we took the plant tour.

Well, anytime you have a mechanical device it's going to wear out.

Sure it is.

Or it's going to break down.

That's right.

Or it's going to suffer the abuse of somebody that doesn't understand. So when a fella buys a band saw sooner or later it's going to wear out, break down or suffer abuse. Our perceived competition rely on their dealers, who may or may not have well trained service technicians or they rely on contract labor, which they have no real control over. We, through our Parts Department and our Service Department, we control everything that happens to a HE&M Saw after the sale. We think we do a better job than our perceived competition. We know that we have the best parts delivery in the industry, typically in the 88% to 90% range, 24 hours or less.

Well, and you said during the plant that you have parts that most manufacturers won't even provide you.

We service saws that are 40 years old.

Wow.

And it's nuts, I mean I have a 50-year-old automobile and I go to get parts for it and I've got to pay through the nose.

Yes.

So I'm saying to the boss, you know, Doug, if I have an antique saw and I have to have antique parts why don't I pay antique prices?

Yes.

And he says because we're not that kind of a company. So, you know, it's just been a real pleasure to be associated with these guys over the years, and we really take pride in what we do. We take pride in our product, we take pride in our people. Just two weeks ago the boss, himself, got on an airplane, flew to Chicago and spent three days walking the floor of a customer who wasn't completely pleased.

Wow.

Turns out that the problem was more the customer's problem and their management ...

Oh.

... than it was ours, but at the same time can you imagine the impact it has ...

Oh, sure.

... to have the owner of the company, the second generation take enough pride in his business to get on an airplane, fly to Chicago with a techie for the controls, and for this old 72-year-old saw guy and we walk the floor and made everybody happy. Nobody else can.

Bottom line.

And in reality anytime you purchase a piece of industrial equipment that's a very large investment.

Very much so.

To your company, so it's crazy out there, that we service saws that are 30 years old, but we do because people depend on those saws. And we were speaking earlier, your whole shop really depends on the accuracy of your saw and the up time, right? So if your saw goes down it bottlenecks your whole production, so our customers are dependent on us to be able to fix that saw or provide those very important pieces in a timely manner. And after their people have looked at it for a day or two trying to fix it, by the time we get involved they really need those parts as soon as possible. So it's important for us that they call in, they talk to a helpful person, and then we can turn it around within 24, 48 hours. We pride our self that, like he was saying, about 90% around that range go out within 24 hours and they get that customer up and running because they are down we're not talking a little amount of money, they're spending thousands of dollars just sitting waiting for their piece of equipment to be fixed.

Right.

And we fix those saws, these aren't saws that are going to break down in a year or two, these are saws that are going to run sometimes for the life of the shop that they're in, so that becomes really important for their users that it's reliable.

Well, when Tessa and I and Debbie Cox, our Producer, came to take a look at the plant, when you think band saws, you know, you have no vision of what they look like.

Not a clue.

How big or small they are. So Tessa is like her eyes just almost popped out of her head when she sees these massive machines.

That's right, in fact, as Leah was ascending the stairs on one, there are stairs on these saws they're so large, to look at it, you know, I joked to Debbie this saw is big enough that it could be used in like excavating dinosaur bones. They're massive things and you have 30-foot ceilings in most of your warehouse, I believe.

Correct.

That you had to build on because some of your saws are too big to fit in that 30-foot high ceiling space.

Yes, our normal factory space is right like 30, 32, 34, and it just wasn't big enough to host some of our custom jobs, so they had to build on two specifically separate attached buildings just so we could fulfill the clients' requirements.

And the first saw that we built that was talk like that was built outdoors ...

Oh, wow.

... because we didn't have a building.

Right.

And the old man took the down payment and poured concrete and then we built the machine outside that Electrical Department ...

Wow.

... which was the shop, and then when the customer paid for the saw he put up the building around it, and that was our first 24-foot under hook.

Wow.

You know, I have to paint a picture for our listeners when we talk about a saw this big. The one we're talking about is a plate saw for plates.

Correct.

Now to give you a description of how big this thing is take a large apartment, okay, just a large two-bedroom apartment, it's bigger than that, I mean in looking at the specs just the main unit, itself, right?

It's the plate, the bed of the saw is 240 square feet.

Wow.

Yes, if you're interested in taking a look online we do have a YouTube account, we have a Facebook, and we just have hemsaw.com, that's just h-e-m-s-a-w.com, and you're going to find videos specifically on YouTube. The one we always point people to is - I guess they got bored one day and they decided to cut a truck in half.

Oh, my goodness.

So the biggest machine we've ever produced, they got a little - I guess, I don't know if they were bored or they just - just because ...

It was Japanese because we just wouldn't do that to an American car.

So they decided to roll the truck up there and they cut it in half. So we still watch that video. It's not the most high speed because band saws aren't ...

Fast ...

... particularly high speed, but it's not every day. There's a band saw blade, a seller in Texas that recently used one of our band saws to cut another car in half, and I guess he got a little flack because he didn't realize the car was a collector's item.

Oh, my goodness.

So they weren't actually associated with our company, but I did, you know, someone said, hey, isn't that your saw on this advertisement? And we were like yes, yes, and it kind of got back to us. It's a really impressive cut, but he cut this car in half. It's interesting because you don't see it every day.

Right.

I know some of this - some of these saws, the technology behind them is proprietary, but you had mentioned that the machine that you guys are customizing right now is going to go in three pieces to ship it. Because we're looking at this stuff, right, Tessa? And how do you get this out of the shop, number one?

Right.

And how do you get it on a truck or a train or wherever you're going to send it? I mean how does that work?

It comes apart in three pieces, each part will have to be shipped on a drop deck truck.

Wow.

To clear every - all the bridges ...

Right.

... and things necessary. And we make even bigger stuff, too. We just shipped a saw that was darn near 20 feet tall.

Whoa.

I have to ask what on earth are these saws used to cut other than collector cars?

Think about the front bumper on your new car ...

Uh-huh.

Yes.

... back in the olden days it was a piece of steel that was approximately eight feet wide and it was shiny chrome and it weighed X number of pounds, and now we've got the front bumper on a car and it's not steel, it's made out of plastic. Well, that plastic has to be molded with an

injection mold. Well, the mold that they use to make that bumper with is a piece of steel that will be approximately 10 feet wide, approximately 40 inches wide, and approximately 40 inches tall, and then they hollow that out. Well, you have to cut it down to start with so you need a saw that will cut this 40-inch chunk of metal. So you call HE&M Saw, the foremost authority on how to cut metal with a band saw.

And it's really interesting, I heard that we are in construction sites cutting I-beams, I've heard that we have racecar teams that use our saws to do their custom alterations with the racecars.

My goodness.

What else? Oh, there was a metal company that specialized in making custom metal mixtures and every so many ingots that they put out they have to quality control it so if they cut it in half and make sure the mixture is the consistency all the way through. So we had to custom build a band saw - correct me if I'm wrong, J.R. - it was like 20 tons, it was some giant. And that personally was one of my favorites. We stayed late, we were here till midnight making sure it was all perfect for the customer the next day because it was custom.

Can we say the customer?

I don't know, I might want to ...

That's up to you.

It was Kaiser Aluminum.

Oh, my gosh, wow.

It was a billet that was - we built a saw that was 75 inches wide, it would cut a billet 75 inches wide by 20 inches tall.

Wow.

And it's custom built because they have custom super-hard metals, we have to make sure that we can cut that metal, otherwise it's no good to them.

That's what they do is custom work here, guys. We're talking about HE&M Saw in Pryor, Oklahoma. A lot more fun stories when we return on Oklahoma's Science Radio Magazine, and I don't know about you but I like Pryor ...

This is a very exciting place.

We'll be back in just a moment on .

[Music]

>> Gary and Tessa will be back after the break with more interesting conversation. This is on the OCAST Radio Network.

>> As a police officer one of the most dangerous parts of my job is arriving on a scene where an armed suspect has barricaded himself or where we suspect some type of booby-trap. We're most vulnerable when we don't know what kind of explosives or weapons are on the other side. It can be deadly.

>> Tactical Electronics, an Oklahoma-based company, invents, manufactures and sells tools, such as under door cameras and video fiberscopes that are used by law enforcement officers, military, and counterterrorism personnel around the globe. The tools allow areas and packages to

be inspected from a safe distance, which reduces the risk of injuries and death. With the support of OCAST the company is developing image recognition software that scans packages and within milliseconds identifies what's inside. OCAST is advancing science and technology that not only improves, but also saves lives. For more information call OCAST toll free at 866-265-2215 or visit us on Facebook or our website at ocast.ok.gov.

[Music]

We're coming to you from Pryor, Oklahoma and right in the heart of MidAmerica's Industrial Park, the State's largest industrial park. We're at a company called HE&M Saw, HE&M is actually the correct spelling of the organization. Here's an organization that, well, with their some 200 employees and a space of about 250,000 square feet they manufacture over 70 different models of production band saws for the metalworking industry, including vertical, horizontal, plate and double column saws with capacities ranging from 12" by 12" to 80" by 80" - I mean and it just goes on and on and on. Material handling tables and some other timesaving features available. And it's all American design engineered and manufactured right in the heart of Pryor, Oklahoma. Good work, guys.

I have to wonder, when we came to do this show I was thinking to myself, albeit, I don't know a whole lot about saws, but I was thinking how can you really revolutionize a saw, it seems like a pretty simple thing, how much technology can really be into it? But what we have learned here today just from talking to you guys and from touring around is that there is a heck of a lot of technology involved in a band saw and that you guys are implementing a lot of really cool innovative things. J.R., can you talk a little bit about the evolution that you've seen?

Well, back in the old days, and that's a phrase that I use probably way too much, but you get to a point in your life and everything was the old days. And back in the old days we'd get a sawblade and it would be a four pitch or a six pitch, and then in the mid-70s the band saw people came out with the variable pitch blades. And I'm pretty deaf and I can't - I always say I'm deaf because it was either 40 years of singing saw blades or rolling stones tenth row center 1973. The point is back in the old days you couldn't make these sawblades quiet, you had to play with them. And now with the advent of the variable pitch blades we could tweak and tune them and you could actually stand beside a bandsaw and talk.

Wow.

Well, then now we've got these high tech materials, you know, you get into like car axle shafts is a 33-40 or a 41-40 grade material and it's 40 carbon and it can be hardened, and you have to cut it differently than you would cut, say, the stainless steel that you use in surgical tools. So with all the different kinds of material that need cut we need different technology in the sawblades and with the lack of experience that we're experiencing with operators these days we're trying to come up with controls where a guy can plug in the material grade and tell it how big it is and the saw sets itself up. And we're one of the leaders in that. Now we've got a long way to go, we're still tripping over ourselves someday getting there ...

Sure.

... but because there's so many different kinds of materials, but the fact is now we can take a person who is absolutely uninformed about material grade and they can look at a work order, plug in the material grade and the size of the material and say go and the saw sets itself up, and it's all done with a touchscreen. Now whoever heard of a touchscreen? My God, where have we

come from, you know, I mean it's just - for me it's one of the most exciting times in my life as a career with the band saw.

Well, sure, because you've seen so many changes over the years.

Oh, yes.

In control boards and ...

Absolutely.

... and development of saws and the materials the saws are made from, and now they're getting more precision and the impact of the saw usage, they're lasting longer because the materials are better because of the engineering of the saws and the controls and the components and the productivity is so much better. So, yes, that's great. What about you, Casey, where do you see all of this?

Oh, my gosh. Even, not even getting to the awesome touchscreens and the PLCs, I mean I'm astounded a lot. I learn absolutely every day, and I'm kind of nosy so that helps me out a lot because I learn stuff so much. I sat through a web meeting by chance because they needed tech support during the web meeting.

This is a great story.

So the company that does rebar, and they weren't sure if we could help them out. And then we had a lot of experience on our team, so then our team goes out and they look at what they do and they come back, and you wouldn't think of just changing the clamp on the material handling would do that much, but within a week or two of that saw being put into place on their - in their machine shop, we have this very nice long letter from the company owner just talking about the efficiencies that it's had. And that's pre-technology, that's pre-PLC, that's pre-touchscreen, and that is experience of our guys.

There's something else I want to squeeze in here because we're short on time. I want you to talk about - because during the tour you talked about how you had to make communication changes here at the facility because you didn't have a lot of connectivity to the internet. I want you to tell that story?

Yes, we're a growing company so we actually have three locations. Our farthest one is about three miles away, it goes one mile and then three miles, and before Google - now we have Google so our infrastructure is getting leaps and bounds better, but before Google we couldn't achieve the speeds between our buildings that we needed. We talked to a lot of local ISPs and they just weren't building out in the area at the time, so we had to learn about transmitters. And so we hit the books and hit the internet, and I learned how to buy a tower and I learned how to rent a 120-foot crane and we put up microwave transmitters and that is now what connects all three of our buildings.

Now I think that it's interesting to point out that your background from school is not in any way really related to what you're doing now, so you have a background in social sciences.

Yes, I graduated the University of Tulsa with a Psychology Degree and under - a Minor in Sociology and a Gender Study Certificate.

And look what she's doing now, she's building saws and designing saws and ordering cranes.

Right.

She's an IT Manager.

Pretty amazing opportunities that you have here. One thing that I just want to underscore really quickly and I know we've touched on it a lot during this episode is the fact that you guys, you don't just build saws, you customize anything that a customer wants related to a saw.

We never say no.

Right, I think you told a really interesting story during the tour about having to build a saw for a customer that had some very - so this is a gigantic saw, but it had a very small window through which it needed to fit in order to be installed in its final location, and then it had some perhaps training issues because you guys weren't able to go to that location and train the users on how to use that saw - can you tell briefly - talk a little bit about that story?

That was one of those proprietary stories I think.

Yes, it was basically in a cave, let's say.

Yes.

And the access was very small and the people that were allowed in there were very well trained. Specialized.

They were specialized and they were very concerned with safety.

Sure.

So they had many, many layers of safety gear between them and anything else that they came in contact with.

So we designed a saw that could be shipped in pieces and then installed and put together by people that don't know how to build saws. We designed the saw based around one of our basic machines, designed it to be in pieces. We brought them out, they were here when we assembled it. They took it apart. They prepared it for shipping. And when it went to the installation they were able to install it.

It basically had to pass through a conduit that was just around four feet by four feet, I believe.

Oh, my, wow.

So you can imagine fitting - this saw is about the size of a room and then you have to redesign it to break down so that it can pass through this opening. And then the gentlemen don't have a lot of experience, so they had to take it apart and put it back together a few times without ...

Under your supervision.

Yes, under our supervision with our expert builders and without their safety gear, and then we had to make sure that they could put it together with the safety gear. So they were here a couple days getting it put together and it's a challenge, and they did it. It was pretty amazing, so it took a lot of work.

I think that just speaks volumes to the kind of company you guys are here. Obviously, you're very interested in customer service, which is amazing, it really goes a long way with building customer relationships that, hopefully, will last forever.

Yes.

And that's probably, aside from your quality product, I'm sure that is what contributes to you guys being the world leader.

I want to talk about their people. We only have about a minute-and-a-half left here. I want to talk about the HE&M staff here because you've got a diversified staff, a family of machinists, welders, engineers, assemblers, electricians, sales and service technicians. And one of the things that Tessa and I was impressed with is a good chunk of your employees are female, women.

Sure.

There were lots of diversity of women and there's a reason for some of that, real quick?

Women are more dexterous than guys.

Little hands.

Yes.

Absolutely, so our Electrical Department is staffed by women.

That was the first thing we walked into ...

Yes.

... and I was really impressed at the number - you know, that's something that was mentioned that the Park, as a whole, has a pretty high proportion of women working here.

Yes.

Our Accounting staff are largely women. The person that runs it is a woman. I run the IT Department and I'm a girl. What else?

But, you know, there's ...

The woman runs the Electrical Department, she's a girl.

I was going to say, but you see and a lot of Administration you would kind of think that was common, women being in Administration, but in manufacturing, when it comes to electronics and those kinds of things, that's what I found quite unique.

I think it surprises a lot of people.

It does.

That they walk in because industry has that air around it ...

Yes.

... like burly men, and you walk in and we handle it just as well as they do, so.

Well, Casey, J.R., you guys have been great guests. We enjoyed the tour and we would highly encourage our listeners to go check them out online. It's actually HE&M, H-E and the & sign - so HE&M, Hem Saws, as they call it, in Pryor, Oklahoma at the MidAmerica Industrial Park. Thank you so much. We learned a lot more about band saws, that's for sure. And who knows what we're going to have next week. We'll find out on . Have a great week.

[Music]

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