Behind the Wheels Podcast Transcription
Episode 8: American versus European Wheels with Marc Minoli

ANNOUNCER
You're listening to Behind the Wheels with Doug Mason, Dave Walters, and Mike Yagley. This is a show where we talk about heavy truck and medium duty axle ends. Doug, Dave, and Mike bring close to 100 years of experience and expertise in the transportation business.

Join us once a month to learn new things about axle ends. Sponsored by Alcoa® Wheels, the global leader in aluminum wheel innovation.

MIKE YAGLEY
Well, welcome to another episode of Behind the Wheels. I'm Mike Yagley.

DOUG MASON
And I'm Doug Mason.

DAVE WALTERS
I'm Dave Walters.

MIKE YAGLEY
Today, very excited to have Marc Minoli from our Alcoa Wheels, Europe. Well, Marc, I'll let you introduce yourself. Why don't you give us a little bit of your background and what you do there.

MARC MINOLI
I'm Marc Minoli, and I started with the Alcoa Wheels in 1993 as a area manager, so occupied with sales and the marketing. And throughout the years, I had various positions, be working in the Benelux and later on started working in Europe to the Middle East to it. And, now I'm hosting technical stuff, as well as after sales, as well as provide strings to internal external staff. That's more or less in a nutshell what I've been doing so far.

MIKE YAGLEY
Well, I would say, Marc, you're being a little bit humble. I guess my impression of your work there is you are probably one of the industry... You are the industry expert when it comes to wheels, especially with wheels. But, you also have a great understanding of the whole axle end. I would say you are probably the equivalent of what Dave Walters does here in the U.S.

MIKE YAGLEY
And, so really, really happy to have you on the show, and looking forward to talking to you a little bit about what's going on. We'll probably have a few shows on this. Let's start out with a discussion on the differences between North America, which are, most of our listeners are going to be in North America, and Europe. What are the differences between the two markets?

MARC MINOLI
Well, I have not been in States lately, but the one big difference in terms of, if you look at highways, if you look at the fleets, is that in the United States, you have these typical U.S. American trucks as we call them over here. And in Europe, you mostly see cab over designs as they call it.

MARC MINOLI
You may want to explain that a little to the audience, but this is all also do with the regulations in terms of length in Europe. The majority, or all of the countries have a maximum length for both tractor and trailer.

MIKE YAGLEY
We see a few cab over designs over here, but they're not real popular. So, I'm going to take a crack at trying to describe what a cab over is. In the U.S. You'll see them occasionally. They are basically a flat face to the front of the vehicle. The driver is sitting directly over the steer axle.

MIKE YAGLEY
It gives a much rougher ride than what we call here in the U.S., we call it a conventional cab design. But the cab over, because you're sitting directly over the front axle, it's really difficult to damp out the vibrations. It is a much, much rougher ride. Marc, any other comments on cab over design?

DOUG MASON
Well, I think it would be good for Marc to describe what some of the benefits, and the reasons for the cab over design in Europe. I think it has to do with some regulations and just some practicality.

MARC MINOLI
The major reason of course is that there is a maximum length, and we have dense areas, very populated areas with high density of traffic, and small curves, lots of roundabouts. That's also a trucking industry's complaining about, that we have an enormous amount of roundabouts. Conventional trucks, huge lengths in terms of tractor and trailer that will not fit certain roads, especially inside some areas.

MARC MINOLI
The other benefit of it is that the space that is limited is being used quite well in this case. So that's more or less what's happening. And in terms of smoother rides, it is quite interesting to see that the trucking industry and truck OEMs is doing a lot for the comfort of the driver. So all these cabs actually have air suspension. Also, majority of drive axle have air suspension as well. Part of the front axle are air suspension. So in terms of drivability and comfort, it is improved. But again, if you talk to fleets, if you talk to drivers, they really love the conventional trucks, what you have over there in United States.

MIKE YAGLEY
Are you seeing more sensitivity to wheel balance, those kinds of issues in cab over design, especially on the steer axle versus... like here in the U.S most of the fleets don't even balance their wheels. What do you see over there?

MARC MINOLI
It's not only about balancing. It's also about the [INAUDABLE] axle. So we have out of some truck OEMs, five of them do balance the wheels, wheel drive assemblies on the front axles. They have certain values they are looking at. Drive axles are not balanced on these trucks or tractors. So the balancing mostly is restricted or taken care of. If balance go beyond 50 grams, 100 grams, or even 160 grams. It depends on the brand. It depends on the make, but the major concern is that they have a very good wheel with a very tight tolerance in terms of radio and axial run-out. And that's where we kick in quite well, as our wheels are perfectly round and we've never had any issue in that area of... We may have a couple of remarks or a couple of questions during the year about this. So effectively our wheels do very well in this area. So balancing, yes, it's done. But mostly, they are looking at the tolerances of tires and wheels and assembly as a whole.

DOUG MASON
Marc, is the load rating any different on the steer axle in Europe than in North America? Is there any difference in terms of what we utilize for the wheel and tire on the front axle typically?

MARC MINOLI
Most of the heavy-duty trucks, and if I'm well, you're mentioned this class 8, most of them we'll see a load rate of 8 tons and half, 9 to 10 tons. That's more or less the load rates you encounter here on trucks.

MIKE YAGLEY
I'm going to do a little bit of conversions here for our listeners. Marc mentioned a 50-gram weight. That's about an ounce a half, 1.6 ounces. So you get sort of an idea when he says the spec is 50 grams are looking for balance of less than 1.6 ounces. The second thing I wanted to highlight with the tons, when we talk about European tons, that's actually different than a North American ton. A North American ton is a 2,000 pounds and a European ton is 2,200. If I remember right when Marc is talking about tons, you have to increase that by what you think. It's another 10% higher.

MARC MINOLI
It's metric tons.

MIKE YAGLEY
Metric tons.

DOUG MASON
There you go.

DAVE WALTERS
But I guess my question to you, Marc, would be when you run your 8.5 to 9-ton steer axle, do you guys run 9-inch wheels and 315 tires?

MARC MINOLI
Yeah, exactly. That's another difference, Dave. What I see your portfolio is quite solid in 8.25 wheels. Whereas at the majority of the tires being used in Europe can only be mounted on 9-inch wheels. So effectively a vast range of tires for conventional wheels is only to be mounted on nine inches and 9-inch wheels. Whereas there is still one tire size left in Europe, 295/80 series that is using the 8.25. So 8.25 is effectively being used only on certain coaches, intercity coaches. So buses that run between two major cities. On trucks, you can still see them, but you're hard to see him as the regular specification for a tire at this moment, as a standard is 315/70, but you also meet 315/80, if height doesn't matter, or even if you look at volume type of transport, you will be looking at 315/60 or 305/60. So that's more or less the standard tires at this moment. But we even go down in volume to 45 series.

DAVE WALTERS
Okay. Which makes sense, because technically in this country, there's no way you can load the steer axles up very heavy in this country because of the configuration of a conventional truck and what we run. We run all 6x2s or 6x4s over here, 6x4s is very prevalent where the 6x2s are coming, but a different configuration of trucks. So I mean, our load ratings are really different.

MIKE YAGLEY
And it seems to me like everything is being driven by that compact package, the length law seems to drive. I'm just guessing here, but it seems to me like that length law drives the high loads and the steer axle, of course, but it drives pretty high loads at all locations and all the way around your vehicles.

DOUG MASON
I mean, Marc, do we see higher loading per axle, more axles in Europe than in North America?

MARC MINOLI
Well, yes. To go back to one of your remarks from Dave. So you're looking at a load of 6x4. What we do see here in Europe is the majority, or the vast majority is 4x2. Then we have a three-axle trailer that is also what I would say standard over here. So a 4x2 tractor and a three axle trailer, tridem as we call it.

MARC MINOLI
And furthermore, in terms of higher loads, low because the governments are well aware about the axle loads, but also about the, the roads as such, in terms of maintenance, in terms of wearing down. They know that axle loads is very important. So we even have in a number of countries a system, which is called weighing in movements. So effectively trucks are being weighed as they are driving. And there's cameras on the roads that take a picture of any truck that is passing by that has a high axle load.

MARC MINOLI
So they more or less seem to take care not only about the gross vehicle weight, but also about the individual axle loads. So that's quite important.

MARC MINOLI
In case... And we do have a couple of countries where they're able to take benefit of the truck as such being quite efficient, transporting more goods, they add length, but they also add axles. So in the end, the axle loads will still remain the same, but they can increase the gross vehicle weights, like you have in Scandinavia and Sweden or Finland, you may see weights going up to nine axles, going up to 70 metric tons plus. So there the roads are not that dense and quite long. So they have more space and room to allow these long trucks running. In some dense areas in Europe, some experiments are going on with similar road trains, as they call it over here. But these are limited to certain highways and certain routes where they can operate.

DOUG MASON
You were talking about the 9-inch on the steer, about the drive and the trailer sizes. Are those different than in the U.S. as well. I was thinking there was more of a wide base being used on trailers over there than the standard 8.25 here in North America.

MARC MINOLI
The majority is a wide based wheel. The one major wheel size that will be the 22.5 by 1175, hosting a tire with a dimension 385/65 or 385/55. And I know that this is a bit different from what you see in North America, because you have this 12.25 wheel over there for the same tire sizes. So that's similar, small difference so to say.

MIKE YAGLEY
The trailer guys have pretty much standardized on that 1175-wheel design. Last time I was over there, I don't recall seeing anything but 1175s on the road. Is that pretty much your experience also?

MARC MINOLI
Yeah, when it comes down to volume transport, you may see 19.5 by 14 inch. Initially, we had several offsets, but later in the level of the 120-offset kicked in, we have a wheel for that. We had a period where we have seen 22.5 by 15 offset 120, pretty much in our area where we have the weight-sensitive trucks. We have this 1175, 22.5. And when it's volume related or a mix of volume related or weight-sensitive transport, you will be looking at 19.5 by 14 inch, 120 offset.

MIKE YAGLEY
I didn't realize they were still making vehicles with 15-inch wide wheels.

MARC MINOLI
There are the kind of situations where the weight and heights of the trailer didn't match very well. Availability of the tire size and the tire sizes for that wheel, the maximum height for loading wasn't good enough for the majority of transportation operated for volume transport. So the inner clearance of the trailer just did not catch the three meters, which has become the standard in, for instance, transportation of white goods. So washing machines, and that kind of stuff. So it didn't become that popular, so effectively what happened is that the 19.5 by 14 inch with a 435/50 or 445/45 tire gained much more popularity for this type of transport.

DAVE WALTERS
My next question was, do they run any low profile, wide base, 22.5s by 14, a wide base at all? Or is it still the, what I would say the old... No low profile. We run all low profiles. That's on wide base here. That was kind of my question.

MARC MINOLI
We have a 13 inch, 14 inch 22.5, But these are really used on trailers. You don't see them on drive axles or buses to say on the drive, 13 inch, 14 inch, 15 inch as well are being used on trailers in countries where you specifically have an allowance to run with a 10 ton, even 11 ton load on a trailer axle. And then of course you will be looking at tire sizes 425/65, 445/65. But it is kind of rare. So we do have them in the program.

MARC MINOLI
The other typical thing, one needs to know that countries do allow 10 ton, or 11 ton, in case the distance between the axle trailer are long enough. So the closer the axles in the tridem are together, the lesser you are allowed to have trailer axles. So for instance, in some countries where the axles spacing are less than 1m30, the load would be on the tridem 8 metric tons per axle. If it is between 1m30 and 1m80, the load is allowed to be 9 tons per axle. And if you go beyond 1m80, it is allowed to have 10 tons on such axles. So depending on the legislation in a particular country, they will apply this setup for a trailer. So that's where you have 425 or 445/65 tires or 13-inch or 14-inch wheels kicking in.

MIKE YAGLEY
I'm going to just try and do some quick calculations here. You mentioned a 10-ton axle. An axle that takes 10 metric ton.

MARC MINOLI
Yeah.

MIKE YAGLEY
That's 22,000 pounds in that one axle. You said at one point that you could go as high as 11 tons. There are some applications that use an 11-ton axle, which is 24,250 pounds on one axle. Those are pretty healthy numbers. So it's obvious. Yeah, you're going to need more carrying capacity on every axle end is basically what I'm getting to here. Those are very, very robust numbers for an axle. I guess I'm trying to think if we have axles here in the U.S. that we're carrying 4,000 pounds on an axle.

DAVE WALTERS
In this country, what is rated is permitting from the States, it became extremely big. And permitting means, "Hey, I got a truck and trailer that's heavier than 80,000 pounds." And they can get it permitted. Our axles do get that tight.

MIKE YAGLEY
Okay. But I know the States will permit to go pretty high loads. Marc, when, when you say it's 10 ton, that's, that's a pretty common load on an axle. Isn't it? 10 metric ton.

Marc Minoli
Yeah, you can, you can see again, it depends on which country you are. So what you see here in for instance, Germany, we have a five axle, a combination, two axle tractor, three axle trailer. You are allowed to carry 40 tons, 40 metric tons on that vehicle. So if you will be looking at how is it distributed, you will be looking at 18, 19 or 20 tons on the tractor and another 24 ton, 27 tons on the axles of the trailer. However, if you put everything together, so the individual axles may have a higher load, but the total amount is always a little bit less because you cannot always, how shall I explain, distribute the weight evenly and exactly. So there is some tolerance per axle. So that's 40 tons. For instance, Germany and Belgium, for instance, you will be looking with the same configuration you will be looking at 44 tons. Same configuration in the Netherlands, which is a little bit on top of all of them, you will be looking at 50 tons.

MARC MINOLI
So to reach that 50 tons, you would need three tons on axles on the trailer to get to that 50 tons. So if you would fully take advantage of the legislation in the Netherlands, a Dutch truck with a tractor would have three, 10 ton axles on the trailer. However, as soon as this truck is going abroad into Germany or into Belgium, the 10-ton axles become very obsolete because you're only allowed to have 40 tons in Germany or 44 tons in Belgium.

MIKE YAGLEY
So I'm always doing this, but I'll just help our listeners out a little bit of 50 metric ton load on a vehicle, what Marc is talking about is about 110,000 pounds. Here in the U.S that would be handled through a special dispensation from the state, but it's there in Europe and correct me if I'm wrong here, Marc, but in Europe, it's just the standard legislation that allows you to go in certain countries. In the Northern Scandinavian countries, you're going to be allowed to go 110,000 pounds over the road without having to get any special write off from anybody.

MARC MINOL
Affirmative.

MIKE YAGLEY
Yep. Okay.

DOUG MASON
Now we were talking about axles here, but I think one of the things that comes up quite frequently as a major difference and something that's kind of equalizing here in the U.S. is the use of disc versus drum brakes. Now, it's been a long time since there's been drum brakes in Europe. Is that correct, Marc?

MARC MINOLI
In 1996 Racine's Trucks were the first to introduce a disc brakes. And not very soon after you start seeing them appearing on the trailers as well. The production went quite fast and nowadays drum brakes are a rarity so to say. Disc brakes all over the place.

DAVE WALTERS
Assume you have stopping distances. Like a truck loaded at a certain load has the stop within a certain amount of distances, that's what we can kind of go by over here. The stopping distances.

DOUG MASON
Is that what drove it in Europe, Marc, or what drove it to a disc brakes in Europe?

MARC MINOLI
Good question. The disc brakes, one of the drivers was maintenance, ease of maintenance. Easy exchanging and lower weight. The one and only area so far, it has been against the use of disc brakes is the low deck trailers where you will be looking at 17.5-inch wheels and tires because disc brakes do have the disadvantage that heat can easily go up quite fast and at higher temperatures compared to drum brakes. So therefore, we have a tire manufacturer and, or some tire manufacturers being giving some resistance against mounting their tires on 17.5-inch wheels with disc brakes. So again, it's easy replacing disc brake pads, it's easy in maintenance and it has a lower weight to compare to drum brakes. So that's basically what's driving disc brake now.

MIKE YAGLEY
That's interesting, Dave, here in the States, I have, I don't recall ever hearing that ease of maintenance drove any growth fleets to go with disc brakes. So have you seen that in the field?

DAVE WALTERS
We talk about that quite a bit when we talk about disc brakes, but what has happened in the country was our stopping distances is what dictates the fleets to do that. And our drum brakes over here has became so much lighter and more to meet those stopping distances.

DOUG MASON
Yes, so what you're saying, Dave really is the fact that the benefit is not huge. It's all driven pretty much by the stopping distance from an implementation cost. The drum is still cheaper here in North America. Even though there are advantages that Marc's noted, it's still slowly building, but not spread in Europe yet.

DAVE WALTERS
Absolutely. The big market and disc brakes here right now is like the fuel haulers. I don't know of a gas tank truck that doesn't have disc brakes all around. Cryogenic gas people, [inaudible 00:26:18] the whole way around. I mean, it's becoming more and more prevalent, but the markets that really need to stop quick. When you're on our interstate system here, stopping is not what you want to do whatsoever. It's not as critical. So the critical markets have already changed over to the disc brakes here. The over the road trucks, which is the bulk of our markets certainly have not.

MIKE YAGLEY
Right. Well, I think that's about all we have time for day. Marc, I want to thank you for joining us. This has been a great conversation. I hope we'll be able to get you back to have some more discussions about Europe. I think that the European market is a fascinating market. The little differences between North America and Europe, I find fascinating. It's just interesting to see how the European market has developed and also with the knowledge that the European market seems to be much more influential globally. And so the key to understanding the global market, I know China, Japan and South America have pretty much followed the European design model. And so I think it's always valuable to get a really good understanding of Europe to just get that view on what is happening in the rest of the world. So I hope you'll be able to come back and join us again. Any final words you'd like to share with us?

MARC MINOLI
Oh, yes. I'll be happy to support you and my findings, share my knowledge from what I can see here in Europe. And if there's any listeners or any customers from your side that would like to have some stuff addressed or have some questions about it, I'll be happy to serve them and to reply to their questions. Yeah, sure. And I'll be looking forward to hear and see you again and join this team again. So thank you for your time. I thank you for the interest and the questions. Very interesting.

MIKE YAGLEY
Yeah. Thank you, Mark. Well, that does it for another episode of Behind the Wheels. Thank you all for joining us. We'll see you next time.

ANNOUNCER
Sponsored by Alcoa® Wheels, the global leader in aluminum wheel innovation, manufacturing and technology. Inventing the first forged aluminum wheel in 1948, it's team of experts continue to develop the most lightweight, efficient, and high-performing commercial vehicle aluminum wheel products, bringing you revolutionary innovations like Alcoa Dura-Bright® wheels, Alcoa Dura-Black™ wheels, the new Alcoa wheels hub bore technology, and the lightest truck wheel on the market, Alcoa Ultra ONE®, 22.5 x 8.25 wheel. Alcoa Wheels, the global leader in aluminum wheel innovation.