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# EDITED TRANSCRIPT

F - Ford Motor Co F-150 Advanced Materials Conference Call

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## PRESENTATION

**George Sharp** *- Ford Motor Company - Executive Director IR*

I think we're about ready to get started. My mic's live. Have a seat everyone.

Welcome. I appreciate everyone taking time out of their very busy day to come and meet with us, and let us fill you in a little bit more about the F-Series.

We're here because there's been a lot written about the F-150, and the vast majority of it has been very, very positive. But there have been some concerns raised as to -- why did they do aluminum? What are they getting out of aluminum? How did they go about making that decision?

So we're here today to talk about that. We're not here -- just to lay the groundwork with everyone, because I know everybody's very into numbers -- we're not going to talk costs; we're not going to talk revenues; we're not going to talk profits. We're going to talk about the truck, and the truck's capabilities, and why we ended up taking the approach we did on the vehicle, today.

So with me today and really doing most of the heavy lifting is Doug Scott, the Group Marketing Manager for Ford Trucks; and Pete Friedman, who is the Senior Technical Leader for Body Construction Research within our research group. So these are the guys who really understand what's going on.

Now, because we're not going to go into profits and numbers, I don't need to go through any of those normal caveats that you get tired of me saying before every presentation. So with that, I'm now going to turn it over to Doug.

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**Doug Scott** *- Ford Motor Company - Group Marketing Manager, Ford Truck*

Thanks, George. Good morning everybody. I see some familiar faces. I've been the Truck Group Marketing Manager now for 13-plus years. I know Chris; I talked to Chris many times before, and so it's a pleasure to be with you this morning. It's always fun to talk trucks, and we're always ready, willing, and able to do that.



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So I'm going to kick things off this morning and give you a foundation on the truck and a bit of an update on how we're doing so far. Clearly, launching from a position of strength is a real advantage. You may know that 2014 was the 38th consecutive year that F-Series was the best-selling truck in America; also the 33rd consecutive year as the best-selling vehicle -- car, truck, SUV, you name it.

It's a big deal when you do a new one, any time you do a new F-150. This is a particularly big one, and Pete's really going to expand on that today.

Over 750,000 F-Series trucks last year. So again, you've heard some of the stats: one every 42 seconds; stretched end to end they would cover the distance from Los Angeles to here to New York City. So again, it's a big deal; a lot of volume, and a big impact on the market and the economy, to be sure.

One of the things that I always talk about in terms of how we've earned this position of market dominance is customer insight. It's the strategic advantage that we really hold over our competition, this understanding of the customer, and then a mentality of continuous improvement.

We talk about it over and over, and I know it can sound trite, but we take it seriously. I think if you look at our product cadence, it's what's helped deliver this position. Because even with the new truck that we're going to talk about today, we have many other plans right behind us -- again, to stay at the forefront, to be in front of the customer needs and anticipating those needs.

You see some of those philosophies here captured on the slide. We're talking more I know at our senior levels about innovation, and there couldn't be a better representation of innovation than what you see not only with the truck but the process of building the truck and everything associated with it. And we'll certainly be highlighting a lot of that today.

We don't take anything for granted. That 38-year leadership string is, again, not something that's taken lightly. The entire team, cross functionally, whether you're talking to the designers, the engineers, the marketers, the finance people -- again, every day we're waking up and thinking of ways to make this truck better and strengthen that leadership position.

I talked about customer insight. This is a great slide; I've used it a lot of times over the last year: a farmer in a combine. One of the things that we know about our customer is they treat the truck as a tool, and as with any tool they're looking to have that tool be more productive. The tool earns its keep by being more productive, and they are always looking for better ways to do more and to do it faster at less cost.

So it's no different with our truck, and that's the thought process that we have with respect to the F-150 and the Super Duty, is: how can we make the truck more productive? Here, again, our customers -- this is a representation of one of our customers -- and our customers are using all kinds of new tools.

In this case you've got all kinds of computer technology, GPS to monitor moisture levels in fields. We've got farmers using drones to assess crop infestation; robotic milking machines; so just some of the examples of smarter tools and more productive tools that are being employed by our customers on a daily basis.

So they don't approach evaluating our truck any differently. They are looking for: how is the truck going to enable them to do more in less time for less money? So that's the thought process that we have as we're developing the new truck.

And my role as the voice of the customer and interfacing with the product development community, our order was: we needed more capability; we needed more durability; we needed more efficiency; we needed a smarter truck. So again, some of the insight that was brought to bear in developing this truck.

The result was the toughest, the smartest, and clearly the most capable F-150 that we've ever built and has ever been seen in a truck. We really think this is the new standard in full-size pickups, and certainly the future of tough that you've heard us talking about.

From a capability standpoint this is right at the core of who we are. This is first and foremost in our buyers' minds the most important purchase motivation.



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We now have reclaimed best-in-class towing at up to 12,200 pounds; best-in-class payload as you can see at 3,300 pounds -- and I'll talk about how our choice of light-weighting and aluminum helped enable that; and then of course the most fuel-efficient gas powertrain at 26 miles per gallon on the highway with our 2.7 EcoBoost.

Now, lots of awards are handed out. We're up to 28 and counting. Probably the biggest of those awards was the North American Truck of the Year that we received back at the North American International Auto Show in January. But added some noteworthy awards: the Kelley Best Buy Award; Truck Trend picked the F-150 as the Truck of the Year. So again, recognition throughout the automotive media and the popular media that this, again, is really the new standard in full-size trucks.

Now from a launch status standpoint, two plants: Dearborn and Kansas City. Dearborn started shipping back at the end of November last year and has been the single plant up and going. Dearborn is at full line speed over 60 jobs an hour.

Kansas City, the Job 1 ceremony is tomorrow on March 13, and that's important. I was talking to Chris just before we got started, talking about fleets. This week we had our largest 120 fleet accounts up to Dearborn for a fleet immersion on the new truck.

They are very anxious because, we haven't started shipping large quantities to fleet accounts yet, because many of them use the 8-foot box and the heavy-duty payload package, which are unique to Kansas City and come out of that Kansas City plant. So once Kansas City gets started tomorrow, we'll very quickly ramp it up to speed; and then we'll be at full go with both plants building the new truck.

Both of those plants by the way are three-crew plants, two 10-hour shifts, 20 hours a day, six days a week. So we will be cranking out a lot of new F-150s just as we have been.

Let me talk a little bit about how we're doing with the new truck. Again, December really was the first full month of sales, and we've built great momentum since launching in December. You can see some of the stats here on the slide.

Most recently in February the truck was turning in 18 days. That was 4 times faster than the average light-duty pickup.

Again, I talked about the fleet situation. From a mix standpoint I was talking to Chris about the mix. We've talk to you multiple times about this launch and in previous launches: we always expect a rich launch mix.

Those first customers are typically our most loyal customers that are waiting for the new truck, and they tend to buy the high series truck; and no different here. Doing exceptionally well.

Basically over 80% crew-cabs; over 85% four-wheeldrive. In the month of February, 73% of what we sold was either a Lariat, a King Ranch, or a Platinum; so that's our high series mix that generally on average, just for comparative sake, with the 2014 model usually runs about 30%.

Again that's not going to be something that we'll sustain. The mix will spread and even out as we get up to full volume. But as expected, that rich launch mix is coming home.

Let's talk a little bit just about the truck, a little more about the truck and the strategy. Again, keep in mind that this is a combination -- the overall strategy is light-weighting. What we were after was to take weight out of the truck -- and I'll show a slide here in a second -- that if you take weight out of a truck you're able to give the customer the ability to put more of their weight in the truck in terms of payload or more towing.

The truck uses more high-strength steel; we're triple, more than triple, the high-strength steel that was in the frame of the last truck, going from 22% high-strength steel to 78% high-strength steel. That high-strength steel not only enabled us to offer a more durable, stronger frame, but also a frame that weighed about 65 pounds less than the outgoing truck. So we got some weight save out of the frame.

On top of that frame is an aluminum alloy, military-grade aluminum alloy upper body. People go into detail, but essentially the whole upper body with the exception of the bumpers and the quiet steel dash panel is that high-strength military-grade aluminum alloy.



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That's where the bulk of the weight save is: on average 700 pounds of weight save. And that weight save allows us, again, to offer the customer more of the important attribute that they are looking for.

I'll talk a little bit about testing. This is a program that you know we've been working on for quite a period of time. I started working on the program back in 2008. A lot of pre-work or due diligence done to make sure that this was absolutely the right approach for our customer.

Part of what we did was back in 2011 we gave trucks with aluminum boxes to three companies: Duke Energy, Walsh Construction, and Barrick Mining. They didn't realize that the boxes were aluminum boxes. We told them to use them as they normally would.

They all fall into the category of being what we call severe-duty users, the 1%-ers. So the most severe applications and use that you can imagine.

Some of what you see -- this is a Walsh Construction site, building some overpasses and bridges. What you see on the right-hand side, that is something called a pintle hitch. One of the beauties of doing this, of giving these trucks to the fleet accounts ahead of time, was really to assess their use, learn from that, and make changes to the design of the truck. Well, that pintle hitch can weigh 50, 60 pounds; and in this particular case Walsh -- or we also experienced this at the Barrick Gold Mining Company -- they pull these pintle hitches out and they just toss them or heave them into the bed of the truck.

Well, you can imagine that that puts some stress on the bed of the pickup truck. And one of the learnings from that was we needed to further upgauge the aluminum alloy in the box floor. We did that as a result of that hands-on, real-world testing that they did.

So a lot of lessons learned. This was just some of the real-world testing that goes beyond the 10 million miles -- in fact we've completed 10 million miles of durability testing in this truck, which is 2 million more than the outgoing truck, and double the trucks in the early 2000s that we introduced. So much more durability testing than ever before.

Back to how this works and why this is such a good strategy for a truck, why light-weighting makes sense. Again, trucks have gross vehicle weight ratings. That's the bottom number there, the 7,000 pound number for simplicity's sake here.

So if you take weight out of the truck you're enabling your customer -- if you hold that gross vehicle weight rating, and in some cases we've actually raised the gross vehicle weight ratings with the new truck -- if you take the weight of the truck down, you enable the customer to put more of their weight and more of their stuff in the truck, whether it's payload or towing. You saw the previous slide; that's what we've enabled.

That's just one of the benefits, and we'll talk more about the handling and the agility benefits. You take the weight out and lower the center of gravity, like with any vehicle it's much more planted; it's much more agile; it accelerates faster; it brakes in a shorter distance. So many, many advantages to light-weighting.

One of those advantages is power-to-weight and performance. By taking weight out and looking at torque, max torque versus weight, the power-to-weight ratio depending on the powertrain is anywhere from 5% to 16% better than it was with the old truck. It enables you to bring into the lineup -- to essentially expand the lineup -- a 2.7 liter EcoBoost that I'll talk about in just a second that really optimizes for fuel economy, but delivers fantastic performance. Really, performance right there with the 5-liter V8, and good capability as well.

When you rack up all the advantages of weight savings this is a pretty good assessment: best-in-class towing, best-in-class payload, best-in-class fuel economy. I talked about handling and acceleration. All of those things add up to more productivity for the customer, going back to that original insight.

From a fuel economy standpoint, that 2.7 gives us up to a 29% fuel economy improvement over the outgoing truck with the 5 liter. From a powertrain standpoint -- I mentioned this a moment ago. We really have gone from a three-engine lineup with the 2014 model truck -- a 3.7 V6, a 5 liter, and a 3.5 EcoBoost -- to a four-engine lineup.



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In the upper right that 2.7 is what's really key. It really enables us to expand the market to a customer who says: I really want to be in a full-size truck; I may be this -- on a personal use basis this may be the guy who's the bass fisherman, who's going to tow a fairly light boat and trailer to the lake once or twice a month. So he needs that towing capability, but more times he's driving that vehicle without towing; he wants to maximize fuel economy.

He wants to be enabled to stay in a full-size truck despite generally speaking higher fuel prices. And we've enabled that with this 2.7 that gets 19 miles per gallon in the city, 26 on the highway, 22 overall. Still gives him 8,500 pounds of towing.

So we've optimized the towing for what he needed. That bass boat guy might need 5,000 pounds of towing, so he's got more than enough towing, great fuel economy, and yet he's still in a full-size truck with all that versatility that it offers.

But you can see the different users. The upper left is the base engine, the 3.5 base engine, 282 horsepower, 253 foot-pounds of torque. That's typically a fleet engine. That will be -- 15%, 18% of our mix will be that 3.5 Ti-VCT.

The 2.7 I've talked about.

The 5 liter is also a staple for some of the fleets that have more heavy-duty applications. It tows up to 11,000 pounds, 385 horsepower, 387 foot-pounds of torque. That's more capability than the 5 liter in the 2014 model.

And then the 3.5 EcoBoost is at the top of the lineup: 365 horsepower, 420 foot-pounds, is our max tower at 12,200 pounds. In four years we have gone from zero EcoBoost-equipped F-150s to over 600,000 EcoBoost-equipped F-150s.

So when you talk about we made a bet, Ford made a bet on EcoBoost, it was a very good bet, a very successful bet. And now we're going to add a second EcoBoost with that 2.7 liter.

From a pricing standpoint the 3.5 is the base engine; you walk up $495 to the 2.7. You walk up from there $1,100 to the 5-liter; and from there $400 to the 3.5 EcoBoost. So we've got what we call power of choice where, whether you're talking about a fleet or commercial application or a myriad of personal use applications, we have the right powertrain.

I talked about toughness and more capable. And now from the standpoint of the smartest truck: just loaded with technology. 11 class-exclusive technologies, things like the 360 camera, the BoxLink system, the inflatable seat belts, the 2.7 EcoBoost I talked about, the remote release tailgate. I mean, the list just goes on and on.

There is more feature content and more amenities -- massaging seats; who would've thought in a full-size pickup you could have massaging seats? So there is as much feature content and technology in this truck as there is in any vehicle on the road. And again this is something that our customers are really looking for, especially those high-series customers.

The last thing I'll leave you with and there's a --Bloomberg has an article out on this today. From the beginning we've talked about there were various people that decided to try to poke us on things like insurance costs and repairability. And we kept coming back to -- I said a number of times: when you look at cost of ownership, insurance as an example is 10% of the cost of ownership.

The big components in cost of ownership are depreciation and fuel. That's 70% of the cost of ownership.

Whether you're talking about -- some retail customers are probably doing that mental math. I can tell you all of the fleet customers, the 120 fleet customers we were talking to this week, they are all doing that math down to the cents-per-mile calculation.

So depreciation -- this is ALG data that's just out for March/April. 36-month residuals based on 15,000 miles a year, the residual percentage on the 2015 F-150 is 58%. Silverado and Sierra are 51%. The RAM 1500 is 46%.



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All that, if I take that residual value and I factor in the fuel economy advantages, we're talking about cost of ownership advantages to the F-150 of $4,000 over the Silverado 1500 and over $6,000 better than the RAM 1500. That makes a difference. And whether you're the fleet account who is doing the cents-per-mile calculation or you're the retail customer doing the mental math, you get it.

So this is what we said would come home. And again, a real advantage of aluminum, light-weighting, better fuel economy coming to work here.

So the last thing and I'll hand the ball off to Pete. We've already announced our next-gen Super Duty will also be high-strength military-grade aluminum for all the same reasons, to an even greater extent than what I just took you through with F-150. Because from a work standpoint and a capability standpoint, that ability for the customer to put more of their weight in the truck and us take weight out of the truck is even a stronger, higher demand.

So that's what's coming next. Stay tuned for timing, but that's the direction that we're going.

So in a nutshell, that's the toughest, smartest, most capable and what will help us deliver a 39th year as the best-selling truck in America. With that, I'm going to hand the ball off to Pete.

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**Pete Friedman** - *Ford Motor Company - Senior Technical Leader for Body Construction Research*

Thank you, Doug. I'm Pete Friedman I'm the Senior Technical Leader for Body Construction. I've been at research in Ford for a little over 18 years, primarily working on light-weighting of vehicle architectures with aluminum and advanced steels.

Just to further on what Doug talked about, we've got really an optimal use of metals here to really get the most efficiency. The backbone of the truck, steel: by going with 3 times the amount of the high-strength steel we've been able to widen and stiffen the frame while still taking out up to 65 pounds. And above the frame, the use of aluminum -- high-strength aluminum, and I'll talk a little bit more about our aluminum selection and the roadmap of how we got there -- but stamped and extrusions using high-strength alloys, both in critical areas and using really state-of-the-art manufacturing techniques in terms of stamping and joining to get there.

The road started probably more than 30 years ago in terms of looking at aluminum for automotive truck architectures. This was really punctuated for us in 1992 with this what we called the AIV program, aluminum-intensive vehicle program. We made over 100 bodies, and we really focused on not just delivering the weight save but also looking at the high-volume manufacturing capability of doing a vehicle.

Now we still have one of these. I still have it. It's really -- it's a storied looking vehicle; it's whatever, quite a bit old now. But the amazing thing is the body panels look brand-new. There's obviously no red rust on them; it's aluminum. It's really a proof point of the technology.

Since this time we've had a number of key points along the path to get to where we are now in terms of alloy development, in terms of manufacturing processes, joining, stamping, and so forth. If you look here we've got the AIV in 1992, which was really the culmination of a lot of work on alloy development and joining.

1995 we reintroduced the aluminum hood on the Town Car. Partnership for a New Generation of Vehicles, partnering with the government, we proved on the Contour body-in-white.

The X179 was an electric vehicle prototype. The hood on the F-150 has been aluminum for a very long time.

The Lincoln LS we went with more closure panels, fenders, deck, lid, hood. Then another partnership prove-out program on an aluminum SUV in 2001.

Then in 2002 the Ford GT: very low-volume vehicle, but some very, very unique manufacturing challenges. And then of course the Jaguar XJ, the first aluminum Jaguar.



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Our team at Ford -- back then we were with Jaguar. Our team really was the engineering center around the move to aluminum here, a lot of the manufacturing technology, the alloy development incorporated into this vehicle.

I think a lot of that was a very good proof point for us of what we could do. And I think since then we've really accelerated both in terms of alloy development, manufacturing processes, and efficiency.

Then to top it off, the Expedition liftgate was a very good application. And then of course now we've got the 2015 F-150.

So if we go back to 2008, which Doug talked about when he started on this program, we started thinking about the lightweight strategy. We really got the opportunity to build prototypes before we really had a program start.

The X0 was what we call a go-fast program. It literally was a very fast program where we took the outgoing model's frame and we -- very quick design and engineering cycle, we built an aluminum-intensive truck upper body.

Our weight saving target: 40%, which is where we think or where we thought at the time was optimal use of aluminum. We came very close with this go-fast program.

Lagging right behind that we had a bit more of a designed vehicle in this X1 prototype. This was very key for us. We had lessons learned from X0.

We built seven X1s. This went through really a full battery of tests; in fact we actually ran the X1 in durability 50% longer than our standard durability test.

We had that opportunity because it was before the program start; normally you wouldn't have that kind of time. And it just did exceedingly well.

We got to our 40% body-in-white weight save there. And then through the program and going through the design cycle we actually achieved a 45% weight save on the body structure. A huge accomplishment.

I want to talk a little bit about the evolution of alloys over this time. In the 1992 timeframe really the state-of-the-art of building an aluminum-intensive vehicle was using 5000 series sheets. These are non-heat-treatable alloys. And then using 6000, which responds to heat by an increase in strength just for closure panels for your hoods, your deck lids, your doors, for dent resistance.

Since then we've really flipped things around and gotten very aggressive with the use of high-strength metals -- more than I think anyone in the industry -- where we've got 80% of the vehicle now in heat-treatable 6000 series sheet. Very high-strength alloys, the alloys you typically see in aerospace and military application.

Then you can see there what's called PFHT. This is post-form-heat-treated. This is a process that we developed at Ford.

We were taking parts, both extrusions and stampings, and heat-treating them to a very high strength prior to body construction. For the sheet parts we have a Ford proprietary process where we take what we call the KD panels, the stamped panels, and run them through an oven.

It's a very fast, a very aggressive heat treatment and it's compatible with all our downstream operations. It essentially doubles the strength of the panels, and it's a key part of the vehicle architecture which I'll take you through.

You can see there's still 5000 series, where it makes sense for deep draw panels, where we just need stiffness. And then the steel, mostly in the quiet dash panel -- quiet steel dash panel.

One of the keys to getting there and being able to use these advanced alloys is the increased formability and not having the design inefficiencies. A lot of the migration in the 25 years of aluminum vehicles is parts had to be broken up because of the lack of formability.



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Well, we didn't have to do that. We were able to stamp the type of parts with really no design concessions over steel.

And a lot -- that's a long road of alloy development; it's a long road in die technology, both physical dies and our ability to simulate formability; as well as lubricant technology, stamping lubricant technology. We have a whole new class of lubricants we've introduced which really give us great formability.

It doesn't break down under high load so it gives us great formability. It also cleans up our stamping shop because we have no need for reapply. So it's a very effective lubricant that's applied at the mill and there's no reapply.

The door panel that's shown there is -- in the stamping world the door panel is sort of the Holy Grail of the hard panel to make. It's a deep draw panel; very aggressive.

This door design is really no compromise. You can see it's got an integrated window many aluminum.

Many car companies that have gone to aluminum have broken up their doors in two pieces; there's inefficiency here. Here we really have a no-compromise door inner.

Okay, here's an exploded view of the vehicle and just a few things I'd like to point out. One is you can see the amount of light blue; that's the 6000 series sheet. Really, a 6000 series intensive pickup box.

Then if you look at the orange and the green, you see these are really our high-strength members using that heat-treat process. Very key for the B-pillar shown in the top part in orange; the rocker orange piece.

And then you can see a hydroformed extrusion, that green piece. Now that green piece looks very small and it is very small, and that's why we have great packaging.

If you notice, the A-pillar is a very small A-pillar but extremely high strength. Well packaged. Airbag is in there as well.

And this piece is an extremely efficient use of an extrusion. It is all done within Ford and gives us excellent strength package.

I want to talk a little bit about material utilization and recycling. In a vehicle, a typical vehicle, the amount of metal that you actually put on the car from what you buy is in the 50% to 60%. So you're actually planning for 40% to 50% scrap: that's your planned scrap rate.

High-volume vehicles you try to do better. The new F-150 we're at 68%; we're actually 3% better than the outgoing model. So we've got an extremely high utilization rate. Obviously it helps the business case.

But also, what do we do with that planned scrap, that 32%? Now, aluminum is unique in that it's infinitely recyclable; there's no degradation; you can melt and use it over and over again. There's stats like 75% of the aluminum ever made in the last 150 years is still in use.

And it takes approximately 5% of the energy to recycle aluminum than it does to refine it from bauxite -- to mine it and refine it from bauxite. So it's just a great environmental part; it's also a great economic part of this truck.

So from the very beginning back in 2008, when we thought: okay, new truck, high volume; we get a chance to think about our specifications and really start over again. How do we get them? And how do we work with our aluminum suppliers to get it so that we can enable closed-loop recycling?

And that's really, really key, because the value of the scrap is high. If you can get all the steel out of it, no iron in it, it's higher. And if you can keep it to one alloy family and get closed loop, it's even higher.



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We have all of the alloys shown that come out of our Dearborn stamping plant can be binned in four compositions. We have four-way segregation in our stamping plant. So when we stamp, trim the trim parts, the scrap actually gets sucked up into cyclones, through cyclones through ductwork, and they get dumped into tractor-trailers; and those tractor-trailers then drive right back to the aluminum plants for melting into new ingots, into new coils of the same alloy.

Getting all of our aluminum suppliers to work together on the same composition obviously was a key part of this, and also having a dedicated aluminum stamping plant to do this. We've gone even to the point of having common trailers.

So the same trailers that bring our coils -- over 100 coils a day -- the same trailers that bring them, after they drop off the coils then go to Dearborn stamping, go into a bay, and literally get filled from the top down with scrap. Then they pull out, they drive it back; it gets melted and goes right back. That closed loop is a huge part of the business.

So with that I'll introduce George -- or give it back to George.

---

**George Sharp** - *Ford Motor Company - Executive Director IR*

Thanks, Pete. To make me feel a part of the team they gave me one slide to present. So don't worry, we're near the end at this point.

What I want to talk about here is the number of jobs that we've added in support of the F-150. This has been a point of discussion.

We've added -- in total we've announced about 2,700 jobs associated with this program that have been added over the past couple of years. Now, why did we add these jobs? Is the vehicle just less efficient? Does it require just more labor for a given vehicle versus the old one?

No. We added the jobs first because we've increased capacity, that -- we produced in 2013 about 650,000 F-150s for global sale. We sell the F-150 not only in the United States but in 90 markets across the globe. Last year as a result of the downtime that we had, primarily at Dearborn, we produced about 600,000 F-150s.

Once we get both of the plants up to full production, which will occur during the second quarter, we will be at an ongoing annual rate that is in excess of 700,000 vehicles. To support that we obviously need to have some labor additions.

Part of the capacity addition is in the assembly plants; part of it is in the stamping plants; part of it is in the axle plant to produce more axles. And the 2.7-liter engine, which is produced at our Lima plant, we added 300 people there, for example, to support that engine. And that engine will end up being used in more than just the F-Series; it's going to be in the new Edge, for example, that's just coming out.

We also have, as mentioned previously by Doug, those 11 new segment-first technology features. Most of them are new, and they add content to it.

In the -- from your perspective the right-hand side picture there is a picture of the testing of the 360-degree camera. That's a feature that our customers have defined that they really would value that type of thing, because this is a big truck, as you can see.

And something that customers value, customers are willing to pay for. It require some added content. We also have a number of those other features, such as the BoxLink cargo management system, the step-in tailgate, which adds content to the vehicle.

We've also done some insourcing of parts that previously were done outside, and we paid for that. We're doing them inside to better control the output and to protect some of the intellectual property we have in the construction of this aluminum-intensive vehicle.

At the bottom of the slide is summarized where the adds have been. They've created as I said added capacity and added value to the consumer.



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With that, that's our summary of the toughest, smartest, most capable F-150 ever. And I'd like to invite Doug and Pete to join me up here, and we'll open it up for questions.

We're going to have a mic coming up, because this is being webcast. Could you please identify yourself, just so everybody on the webcast knows who's speaking?

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## QUESTIONS AND ANSWERS

**Jamie Albertine** - *Stifel Nicolaus - Analyst*

Jamie Albertine from Stifel Nicolas. Thank you again for having this, this morning, and the in-depth nature of going through the new strength of the alloys and so forth. Just a follow-on to the last point you made, though, with respect to insourcing and in light of some of the newer technologies.

Can you just in a nutshell help us understand, the new truck versus the old truck, how many suppliers you rely on that are outside of Ford now versus for the 2014 model year?

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**George Sharp** - *Ford Motor Company - Executive Director IR*

The number has been reduced somewhat, but it's really being driven by the continuing improvements we're making in implementing our aligned business framework throughout our supply chain, that we're still in the process of bringing those down, and our target remains to get down to about 750 suppliers. We really haven't defined exactly how many suppliers we had previously to now. But again, we thought it made sense to bring some of the intellectual property in-house.

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**Emmanuel Rosner** - *CLSA Limited - Analyst*

Hi, Emmanuel Rosner from CLSA. Thank you for hosting this event. The biggest question I have really on the F-150 is the fuel economy improvements. I think we've done a decent amount of work on the whole transformation and change of materials; I certainly understand some of the things you've done.

I just -- by the time the MPG ratings came out, I thought that the incremental improvement when you take a like-for-like truck, not one with a smaller engine, just the same one, it just seemed very small compared to the investment that was required. Can you maybe explain what's behind that?

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**Doug Scott** - *Ford Motor Company - Group Marketing Manager, Ford Truck*

Sure, yes. Back to -- and you're absolutely right. That 5% to 29% improvement I showed you, the 29% improvement is the 2.7 compared to the 5-liter. If you take that out of the equation and you do a true apples-to-apples you're talking about a 5% to 15% improvement on the other engines, which are more or less apples-to-apples: the base V-6 to the current 3.7; 5-liter to 5-liter; and then 3.5 EcoBoost to 3.5 EcoBoost.

The key point -- and I hope it came through in my presentation. When you look at this customer -- and again, something that we said right from the beginning when we revealed in January 2014 is not just about fuel economy. We employed light-weighting to deliver benefit across all of the attributes that our customer is looking for.

So more capability, more durability, better handling, better agility, better performance: all those things are important to our customers. So it wasn't solely: take the 700 pounds out and reinvest it in just a fuel economy improvement, because the customer wants more than that. And a number of these other demands, like capability, are much more important to our customer than fuel economy.



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**Emmanuel Rosner** - *CLSA Limited - Analyst*

I appreciate that. Just to follow up and pardon my non-engineering background, but I just don't fully understand the concept of, like, reinvesting it. Because back to your slide, it seems like if you shave off 700 pounds of weight -- which is, I don't know, what? 15% of the original weight? -- you should be able to get 15% fuel economy no matter what happens after that to payload, torque.

Essentially it just seems like you wouldn't have to choose between the different attributes in order to get that fuel economy. Am I thinking about that wrong?

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**Doug Scott** - *Ford Motor Company - Group Marketing Manager, Ford Truck*

Well again, the point is you're doing things in order to support a greater capability -- greater towing, greater payload -- you're upgrading other components: axles and other elements, brakes and other elements of the truck to deliver that higher capability.

If you have to stay within the gross vehicle weight rating then again you're -- when I say reinvest, we're redeploying that weight save to give our customer more of those other attributes in addition to the improved fuel economy.

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**Pete Friedman** - *Ford Motor Company - Senior Technical Leader for Body Construction Research*

I can also add to that. If you look at the whole gamut of weight engineering in vehicles, round numbers, a 10% reduction in curb weight typically gets about a 3% improvement in fuel economy. Now, if you can go out and reengineer the thing from the ground up and match capability, a 10% maybe gets you a 6% to 7% fuel economy increase.

Obviously with the F-150 it's somewhere between there. It's take the weight out, not match capability, but improve capability.

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**Ryan Brinkman** - *JPMorgan - Analyst*

Hi, Ryan Brinkman from JPMorgan. Thanks for taking my question. It's obvious that this vehicle has been designed and engineered with the consumer in mind, and that there are a lot of benefits for the consumer. My question relates to design and engineering for manufacturing.

Is this an easier or more difficult truck for you to manufacture? Does it require more or fewer labor hours per vehicle?

And when your plants are fully up and running and similarly staffed as prior -- I know there's going to be some shift differences. But when they're similarly staffed as prior, will the capacity at the plants be the same, or more, or less? Thanks.

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**Pete Friedman** - *Ford Motor Company - Senior Technical Leader for Body Construction Research*

I can try to answer that. I think the complexity hasn't really changed. I think we use obviously different techniques for the materials.

One instance is in stamping. While stamping of aluminum is -- it's got different challenges than steel, we've improved some things by the use of not having to reapply lubricant, which is a major step in stamping development.

If you look at the body construction part of it, we are primarily using mechanical fastening self-piercing rivet clinches with adhesive, to get a combination of a spot and continuous join, as compared to heavily relying on resistance spot welding. Both resistance spot welding and self-piercing rivets have advantages and disadvantages. I think what we did here by having a clean slate was able to put the right -- with respect to joining, put the right joining process in the right spot.



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A good example of that is the truck box. If you look at the truck box floor those are spot welds, resistance spot welds to the cross members.

It's perfect. It gives a beautiful clean floor.

But on the other side, for some very thick structural joints, riveting is a more effective and efficient process. Gives a very strong joint, works very well with adhesives.

So we've used 3 times the amount of adhesive than we did on the old truck, and that's got us a lot of the body efficiency and the stiffness that we wanted. So I'd say it hasn't increased complexity; it is different.

Some ways have been -- are easier and lower cost, and some the other way.

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**George Sharp** - *Ford Motor Company - Executive Director IR*

And on a constant-content basis we've said the labor hours are about unchanged, the new truck versus the old truck. There are additions in content that we talked about, and those additions in content require some additional labor to deliver that added content, which delivers value to the consumer, which should deliver revenue from the consumer.

From the capacity standpoint I gave the overview of where the capacities are going. On a jobs-per-hour basis Dearborn is right now very similar to the outgoing old F-150 jobs-per-hour. Dearborn was already on what we call mass relief -- or tag relief, excuse me, replacing mass relief.

At Kansas City, because we see that there's some need for added capacity even beyond what we had put in place at last job, we're going to be taking Kansas City to tag relief instead of mass relief. That will generate increased capability out of that plant to produce more vehicles. It requires an additional amount of labor to have tag relief versus mass relief, but you get the added output for it.

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**Rod Lache** - *Deutsche Bank - Analyst*

Thanks. Also a capacity question from my end. You're going from 650,000 to -- I think you said a little over 700,000; so 50,000-plus. A question on just -- does that allow you to keep up with the pace of the market? Will you, with that, be able to go back to past F-150 market shares?

Because obviously this has been an end market that's been doing very well, and expected to continue to do so. Or is the idea to be a bit conservative, not add as much capacity as you could, just to keep breakeven points lower?

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**George Sharp** - *Ford Motor Company - Executive Director IR*

Our goal is to have production that is equal to the consumer demand. So we have added some capacity as I just described to the vehicle, and we'll certainly be going through the process optimization once we have both plants fully launched to see if there are other opportunities, naturally, to add cost-efficient capacity.

But we're not looking at this point in time going beyond the two plants, both operating at three crews.

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**Rod Lache** - *Deutsche Bank - Analyst*

Thank you.

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**Rod Lache** - *Deutsche Bank - Analyst*

I was hoping you can -- it's one big question, but there's three little elements that I wanted to clarify. One was just you mentioned during your presentation that there was a $6,000 difference in the depreciation for your F-150 versus Silverado. Can you just clarify exactly what you meant by that?

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**Doug Scott** - *Ford Motor Company - Group Marketing Manager, Ford Truck*

7 points. The ALG residual call is 58%; 51% for the Silverado and Sierra 1500; 46% for RAM.

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**Rod Lache** - *Deutsche Bank - Analyst*

51%, 56%, and --

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**Doug Scott** - *Ford Motor Company - Group Marketing Manager, Ford Truck*

58% for us; 51% for GM; 46% for RAM.

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**Rod Lache** - *Deutsche Bank - Analyst*

If you think about your most sophisticated customers, the fleets that actually do the analysis on residuals -- I'm not sure whether they use ALG or whether they come up with their own. But can you go through the most sophisticated customers, when they look at their expectation for residual value, their fuel economy savings, plus however they measure utility -- I'm not sure if that actually is part of it. But how are they conveying the incremental that they would be willing to pay for all of those benefits?

Is there a way of that they're conveying to you that this truck is worth this much more to us because of X, Y, and Z?

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**Doug Scott** - *Ford Motor Company - Group Marketing Manager, Ford Truck*

Well typically -- and the cost of ownership calculations will vary to some extent from fleet to fleet. But besides depreciation and fuel economy, insurance, you've got taxes, you've got maintenance costs, etc., that are all part of that calculation. They typically will be expressed to us by fleet accounts in terms of cents-per-mile based on their use: here's my cents-per-mile for our particular fleet.

Now in some cases, are there utility aspects to that calculation? Yes. But they vary depending on the use for that particular fleet.

But generally speaking we'll hear -- it will be expressed to us by fleet accounts in terms of: how does our F-150 compare on a cost or cents-per-mile basis to the competition?

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**Rod Lache** - *Deutsche Bank - Analyst*

Can you give us an example of how -- maybe some anecdotes that you've heard on the cents-per-mile for this versus --?

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**Doug Scott** - *Ford Motor Company - Group Marketing Manager, Ford Truck*

At this point we haven't heard. I didn't hear any specifically this week, so probably can't answer that specifically.



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**Rod Lache** - *Deutsche Bank - Analyst*

All right. Then just lastly, is there from your perspective a significant amount of price elasticity? Because it seems like everyone is adding content into their product, and we've seen average transaction prices for this category go from the low $30,000s to the low $40,000s.

Is that something that is significant when you think of just basic economics, pricing being a barrier to consumption at all in this industry?

**Doug Scott** - *Ford Motor Company - Group Marketing Manager, Ford Truck*

Well, I think we've seen a couple of things. First of all, the mix and that transaction price change has been largely driven by shifting preferences for cab type. So that's probably the biggest single factor, is that as the market has migrated from regular and extended cabs to a much higher rate of crew cabs that's really driven those transaction prices.

We've further taken advantage of that by adding more high series. So as we've added Platinums and King Ranches and other feature vehicles, we've built that, and the demand has been there for those kinds of trucks. It's further fueled the transaction prices.

I think we're all to a degree somewhat surprised that we continue on that very steep upward climb on transaction prices. So we're mindful at the same time that, while the transaction prices are growing, we can't leave behind or ignore the more value-oriented end of the market.

I think if you look at our price band, our price band has really grown. We're base priced anywhere from $26,000 all the way up to over $50,000. And we have -- the high-end Platinum fully equipped will transact in some cases over $60,000.

So our price band has stretched, recognizing that we've got to be mindful that this probably is not never-ending in terms of the increasing growth of these transaction prices. At some point you're going to see some sort of a plateau.

We've speculated: as the economy improves you have more of that low and mid series customer coming back to market. That would be -- they would be disproportionately represented.

The people that have been in-market the last several years have been more affluent, and therefore more high series oriented. So we're mindful that the gravy train doesn't go on forever, and we have to protect the entry-level or more price-conscious part of the market.

**Dan Levy** - *Barclays Capital - Analyst*

Dan Levy, Barclays. Thank you. I actually just want to follow-up on that point. Can you just give us a sense, when you were running normalized the old truck what your mix of the high-end trucks was exactly, what that was? And based on the early indication exactly where that mix may normalize and when it may normalize? Whether it's the high-end trucks, whether it's crew cab.

Then similarly I would ask what was your -- how does this compare to competitors, how their mix has shifted, and if that changes also with regard to fleet versus retail?

**Doug Scott** - *Ford Motor Company - Group Marketing Manager, Ford Truck*

Sure. So ongoing -- and again we've talked about this in the past. Ongoing the high series that we would define would be Lariat and above; so in today's truck, Lariat, King Ranch, and Platinum. On an ongoing basis that's been about 30% the last several years.

I talked earlier about in February that high series mix was 73%. Again enriched launch, quite a bit higher.



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What you generally will have with the vehicle program, your high series mix is going to be richest in the initial first couple of years, obviously, of the product's lifecycle. Now, we've done other things like bring in feature vehicles, as I talked a moment ago, to help sustain that high series mix so that you didn't have a decay or a fall-off in the high series mix. That's certainly our plan to continue doing that going forward.

Now, relative to competition, Chevrolet with their truck, their current truck which was new for the 2014 model has moved their series mix to a degree. We were typically double their high series mix; it's probably more like -- their high series mix is probably in the 20% range today.

And then RAM is about half the high series mix, the way we look at it, in terms of their Laramie and above. We were in the high series truck business back in early 2000s, well before our two main competitors really thought about it, and we've been able to develop that over time.

With -- again, you think about we've added Platinum, we've added a Limited, we've had Harley Davidson. I could go on and on. Raptor is not only an off-road truck but certainly part of that high series mix. So we would continue that plan to develop that high series business.

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**Dan Levy** - *Barclays Capital - Analyst*

And the fleet mix, is there any indication that that may shift?

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**Doug Scott** - *Ford Motor Company - Group Marketing Manager, Ford Truck*

Ongoing fleet is anywhere from 20% to 30% of the business. The reason I give you a range is that, if you just looked at the straight-up commercial or fleet deliveries it's probably 20%; but then you have to account for that customer that we call the 24/7 customer, that is using the truck for their occupation during the week and then it's their personal vehicle on the weekend. That probably adds another 10 points of call it fleet commercial mix to F-150.

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**Patrick Archambault** - *Goldman Sachs - Analyst*

How does the 58% compare to the outgoing truck with the residual value?

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**Doug Scott** - *Ford Motor Company - Group Marketing Manager, Ford Truck*

I think in the article today, Bloomberg article, it's 11.5% better. Now that's -- I think it's 11.5% better in terms of calculated, not percentage points. But that was the headline in their article.

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**Patrick Archambault** - *Goldman Sachs - Analyst*

Can you give us a feel for, A, what drove the improvement from old truck to new truck; and maybe how ALG thinks about the spread? It's a pretty big spread between RAM at 46% and you guys. So what really drives that?

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**Doug Scott** - *Ford Motor Company - Group Marketing Manager, Ford Truck*

They look at things like fuel economy. They look at net pricing incentives and anticipated incentives. They certainly look at quality. Those are the biggest factors that go into that assessment that ALG makes.

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**Colin Langan** - *UBS - Analyst*

Colin Langan, UBS. You talked a lot about the changes to the truck. Any color on the manufacturing?



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Looking offline it looks like the plant was pretty much wiped out and then rebuilt. What are the major technology changes that were required to go to aluminum that you think are a competitive advantage?

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**Pete Friedman** - *Ford Motor Company - Senior Technical Leader for Body Construction Research*

Yes, so we have to be a little careful there, because some of the things we did like new stamping lines would have been done either way, steel or aluminum. So replacing old equipment.

But what has transformed and how we're manufacturing this vehicle is essentially a new stamping plant, Dearborn Stamping. We've in-sourced a lot of the stampings because of that; so new stamping line. Again that probably would have been the same for steel.

The four-way segregation process is aluminum-specific. That enabled the closed loop and obviously is a very good financial decision; it's an environmental decision as well.

Then in the manufacturing shop it's essentially a new body shop, which is very common when you have a completely new vehicle, a new platform. The difference is in this new body shop we don't have a lot of welders; we have rivet guns, clinch guns, and things like that.

The overall way -- what we call the bill of process, how we build the body structure -- hasn't really changed. We cycle it through in the same basic way: building up a floor, building up a body side, and pulling it together.

So I'd say on a large macro scale it's a new body shop like any platform. But the individual joining technologies have changed.

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**George Sharp** - *Ford Motor Company - Executive Director IR*

Just one thing to add, that the extent of change in final assembly was much less pronounced than what you saw in the video which was focused on just the body shop.

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**Colin Langan** - *UBS - Analyst*

Got it. Just one follow-up question. Any color on how you thought about getting pricing for all the content that's being added? Any color around there, frame in terms of balancing that versus meeting fuel economy standards?

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**George Sharp** - *Ford Motor Company - Executive Director IR*

Well, obviously we are going to price for the capability that we're adding to the vehicle. But you can't price for costs; you can price for capability. We will use price in part, particularly now, as a driver to allow us to have the production equal to the final demand.

And if final demand is greater than the production we have in place presently, we'll balance out pricing to bring that more into alignment.

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**Doug Scott** - *Ford Motor Company - Group Marketing Manager, Ford Truck*

I just would add to that, you know who the leader has been in average transaction price over time by quite a bit. And that's us.

And that's because we've delivered more value to the customer. What I think I took you through today, every meaningful attribute that our customer is looking for we're giving them more of. So more capability, more durability, more fuel efficiency, more performance.



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So on down the line we've improved the value equation, and with that we believe will come pricing. Yet at the same time we're not losing sight of the fact that we need to participate and compete in the whole range of the market, from the low-end entry series all the way up to the high series business.

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**Colin Langan** - *UBS - Analyst*

Thank you.

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**Unidentified Speaker**

We have time for two more questions.

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**Sal Tharani** - *Goldman Sachs - Analyst*

Sal Tharani from Goldman Sachs. Just a couple of technical questions. One of the things we hear about is the issue of about the fixing or body shop, what's going to happen. If I look at just your picture over here, your outside panel is 6000 T-81, the tow panel. Just give us an illustration.

If something goes into this panel, how would the replacement happen versus steel? And what is the cost between labor and the actual part?

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**Doug Scott** - *Ford Motor Company - Group Marketing Manager, Ford Truck*

Sure. Let me take the first crack at that. When you look at parts pricing, let's start, there are a lot of parts that are the same, old truck to new truck. That pricing is exactly the same.

The parts that are comparable have been priced with a minimal increase. And then the all-new parts, in some cases driven by new technology, have reduced pricing.

This week I mentioned the 120 fleet accounts that we had for fleet immersion on a new truck back in Dearborn, and we took them through analyses that both State Farm and Mitchell's had done on the cost of collision repair. Like a front corner collision that you're describing, comparing our 2014 model to the 2015 model truck; and both of those analyses showed that the repairs were less expensive with the new truck.

Now, part of that is being achieved by -- this is probably the most modular truck that we've ever built. So there are a number of -- like the front apron tube that Pete showed in his presentation that would be right behind that front fender, the shotgun; basically that's got I think four rivets and two bolts, and you can replace that in 15 minutes. If you have to replace the B-pillar because you got a side crash, you no longer have to take the roof off to do that; you can change that B-pillar without doing that.

So the labor time has been reduced as a means of helping to manage that overall repair cost. And I might also -- some of you may have seen the Edmunds stunt with smashing the side of the truck with a sledgehammer, and if you did -- go online if you didn't see that -- then you can see the Consumer Reports response. Which basically their conclusion was that the cost of repair was going to be, as we have been saying, comparable to the outgoing truck.

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**Pete Friedman** - *Ford Motor Company - Senior Technical Leader for Body Construction Research*

The only thing I'd add to that is we've had aluminum closures for a very long time, so we've known how to do that. I'd also say this vehicle is better in dent and ding than the outgoing vehicle. Dent and ding, which is obviously a big reason to repair panels, comes from -- it's controlled by the strength of the material, the thickness of the material, and the design.



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If you think about thickness, obviously we've upgauged. Every panel on this truck is thicker than the outgoing model. But aluminum is essentially one-third the density of steel, right? 2.7 versus 7.9 grams per cubic centimeter, so it's a third the density. So you can go thicker and still save weight.

And so much of dent and ding is controlled by thickness, panel thickness, so that's a key part to why we've improved or how we've improved the dent and ding.

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**Sal Tharani** - *Goldman Sachs - Analyst*

The other thing I want to ask you is you mentioned a couple of times about proprietary alloys. I was just wondering if these alloys are your -- do you have a proprietary on it, or is it Alcoa or Novelis?

Also the [dasip] technology like 951, is it yours or is it Alcoa's?

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**Pete Friedman** - *Ford Motor Company - Senior Technical Leader for Body Construction Research*

Great question. The alloys are not proprietary to Ford. The processing that we do once we receive them, like the heat treat I mentioned, is intellectual property that we have. No; the alloys are not.

How we specify the alloys, we have intellectual property around the method of specification. But the alloys are not.

In terms of the A951 pre-treatment, which is key for long-term durability of adhesive bonding, we have partnered, brought that in a large-scale with Alcoa to production. It is available commercially through the partner that they chose, Chemetal, and we believe that we will be seeing other competitive products out there that will do the same type of conversion coating for aluminum.

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**Unidentified Speaker**

Okay, final question.

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**Christopher Ceraso** - *JPMorgan - Analyst*

Thanks. I have two things. Do you get to skip or avoid like an E-coat treatment or something to help prevent rust because it's aluminum?

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**Pete Friedman** - *Ford Motor Company - Senior Technical Leader for Body Construction Research*

Great question. Theoretically you don't need the paint for a protective layer like we do with steel. You scratch a steel vehicle, you better act on it right away, right?

With an aluminum vehicle you don't. We have a test truck with a gouge on it for three years now and it looks brand-new.

However, our paint systems and the durability of our paint systems are all built around E-coat. The other part of E-coat is it provides heat to the vehicle, and heat is a key part for a lot of the manufacturing process, just like in steel: curing adhesive, increasing the strength of the metal.

So it's part of our production process, key to the paint process. So we are keeping the traditional process.

With that being said, the paint process that we've implemented here, because we have an essentially all-aluminum front-end cab and box, has been optimized for aluminum. So we have really just made huge gains in our durability of our paint systems.



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**Christopher Ceraso** - *JPMorgan - Analyst*

Then George, you mentioned -- I just want to clarify something you said about the 360 camera. Did you bring people in-house to do the camera in-house, or were they just there to test it and you're still outsourcing the camera?

**George Sharp** - *Ford Motor Company - Executive Director IR*

The camera, my understanding is it's outsourced. There are installation costs associated with the camera, and of course the testing of the camera; and that adds some degree of added labor content to it.

But that's just one example of the 11 new technologies -- or segment-leading technologies -- that we have on the truck of added content compared with our competition that provides value to the consumer.

**Christopher Ceraso** - *JPMorgan - Analyst*

But now that the testing is done, do you still have those people installing it?

**George Sharp** - *Ford Motor Company - Executive Director IR*

No, no. We're testing each as it comes through the assembly process --

**Doug Scott** - *Ford Motor Company - Group Marketing Manager, Ford Truck*

That's a calibration, Chris. What you saw on that slide, that checkerboard around the vehicle, that's a calibration. The 360 camera gives you a 7-foot-wide swath on all four sides of the vehicle. So what that guy's doing at the end of the line is calibrating the camera; so every truck that has a 360 camera is getting calibrated.

**George Sharp** - *Ford Motor Company - Executive Director IR*

Okay. Well, I'd like to thank everyone for joining us today. I hope you found this useful; and the people who've listened in on the Web, I hope you find it useful. If you have any follow-up questions please contact myself or any member of my team. Thank you.

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