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Thank you. And to you techs here today, congratulations. Right now, in this room, you sit among some of the very best technicians this industry has ever produced.

*It’s not just that you’re good at what you do. It’s that you’re good at what you do at a time when doing it may be more challenging than at any time in history.*

The challenge is driven by the rapid changes we’re seeing right now in the way trucks are built, and in the components they are built with. It’s also in the way those components work together, and in the new tools and techniques required to troubleshoot and repair them.

20 years ago trucks were a lot simpler. A truck was an assembly of mostly mechanical parts and components, each with a discrete function.

Things work differently today. New functionality has been added, and components talk to each other, manage each other, and work together as systems.

In 1998 an engine had 3 - 4 sensors. Now there may be 20 to 30 on an engine, and close to 100 on a whole truck. Sensors are everywhere monitoring things, including other sensors, and sending signals to various components. Everything seems to be talking to everything, so techs must know which conversations matter most when a problem arises.

Engine de-powering? We can no longer assume it’s got anything to do with the engine. You might want to check for a problem in the traction control system…

When electronics are controlling components, when a fault in one area can impact multiple other areas of vehicle operation, and when we have pressures, temperatures, injection precision and other functionality operating within tolerances we’ve never seen before, it’s safe to assume that the old rules of thumb on maintenance may no longer apply.

*Preventative maintenance is more critical today than it’s ever been, because things that may not have mattered as much in the past can matter a lot more now.*

According to the American Transportation Research Institute, maintenance and repair costs are *up over 50% since 2008*. Much of the blame for the rise in costs has been attributed to the new technology for emissions. Some fleets now identify emissions related maintenance and repair as their single greatest expense – exceeding tires - and we now have data showing emissions parts as the single largest parts sales category in many markets.

*But what if the emissions technology isn’t really the problem?*

A clean looking battery with sparkling terminal insulation may hide a small amount of powdered calcium oxide that signals corrosion. You may have to peel insulation back and look carefully to find it, but not everyone does. A little bit of corrosion hasn’t historically been that big a deal, so it’s easy to give it just a quick look ... or no look at all if you’re under time pressure.

But todays trucks are full of sensitive electronics that can be impacted by any little change in voltage. Corroded terminals can cause many types of concerns, including a voltage drop on engine control modules and sensors…

… which can cause an engine to over fuel…

… which can accelerate plugging of the DPF …

… which can trigger the after treatment control modules to try to fix the problem with more dosing to clean the DPF …

… which accelerates the plugging.

Throw in a sub-optimal DPF cleaning process and it doesn’t take long before we’ve wrecked another $1800 DPF filter... leaving us cursing DPF filters.

*Maybe we should be cursing the battery corrosion.*

*Maybe the new normal is that we have to be much more on top of things now.*

*Perhaps the new technology is fine, and the real problem is that we just haven’t yet nailed the process of correctly maintaining it…*

Earlier this year we started a project to see if we could find ways to reduce after treatment maintenance and repair costs. The good news is that we now absolutely believe it’s doable. In fact, we think the cost increases we’re seeing could be reduced by as much as *80% - or maybe more - with improved maintenance processes.*  The application matters more now.

Seems the maintenance processes just haven’t caught up with the emissions technology changes yet.

*Not in the shops …* *and not in the published guidelines*.

To get costs back under control, we’re going to need to up our maintenance game. Strong electrical current matters more now. Clean air in an engine matters more now. Clean fuel matters more now.

*And increasing tech training and development to better handle the new technology matters more now than ever*.

It’s safe to say that no matter what issue we’re tackling, the future is pointing towards a need for a higher level of diagnostic and troubleshooting skills across the board.

We’ll need to get better at understanding not just how all the new component technologies work, but of *how they work together*. We’ll have to be able to effectively utilize service information, but also know its limitations.

Mastering a wider range of critical electronic diagnostic and troubleshooting skills will help us, and a new generation of powerful electronic diagnostic tools is perhaps arriving at exactly the right moment. In many ways these tools make things easier. They’re looking at multiple components and systems simultaneously, offering instant access to diagrams and schematics, and will help us troubleshoot by pinpointing areas of potential concern - you just need the tools and the know how to fix it right the first time.

But while the new tools will give us a lot of help, we also need to brush the dust off of some older, proven diagnostic methods that have become more important again.

One of our trainers was recently called upon to help with an engine problem. The engine in question would start up… then immediately shut itself down again. It was throwing an “ECM low voltage” related code, but the digital multi-meter showed that voltage was fine during a cranking voltage test.

The tech was stumped.

The manufacturer was stumped.

Our trainer pulled out an oscilloscope – something shops may have available but often don’t use much – and discovered that for *20 milliseconds* the starter had allowed the battery voltage to drop below the minimum threshold and that was enough to fail the enabling criteria for the code. The digital multi-meter only measured to 100 milliseconds.

They replaced the starter and it was fixed. The bottom line is that after two days of analyzing, diagnosing and replacing parts, the right person with the right tool de-coded the problem in less than a half hour.

We saw the same thing recently on an injector problem – a tech with the right diagnostic tool and skill fixed a problem in 10 minutes that had stumped others for four days straight.

The technology, the maintenance and the repairs aren’t necessarily getting harder, but the changes are coming at a faster pace, which makes *keeping up* harder.

*One thing for certain: Those who’ve mastered the* critical skills will be the masters of shop productivity.

And that brings us back to the importance of organizations like TMC, and the importance of programs like SuperTech.

TMC is all about identifying, defining and above all *sharing* best practices. The combined wisdom and experience in this room is staggering to think about, and yet here it is, together in one place, because of TMC.

And SuperTech is where the learning process gets put on steroids. Thousands of techs studied regionally to try and get here – preparing in a myriad of ways to be counted among the industries best. Not everyone made it, but each one learned more in the process. Companies are increasingly supporting SuperTech because they know that those that make the effort to be here, whether they end up in this room or not, care about being counted as professionals and about being the best at what they do.

And we can add you student competitors to that list – we know you’re the future, and we know you are anxious to be recognized for being at the top of your game too!

This event recognizes and rewards our successful tech professionals. But it also pushes the boundaries of what’s possible in technical training, shop productivity and service quality. You are the cutting edge in driving change and professionalism for the entire industry.

Congratulations to those of you who came here to compete, and good luck to each and every one of you. No matter what, the fact that you are here, the fact that we are all here, means that as an industry we’ve already won. \*\*\*\*