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SPRING 2018 TOYOTA
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GAME CHANGERS

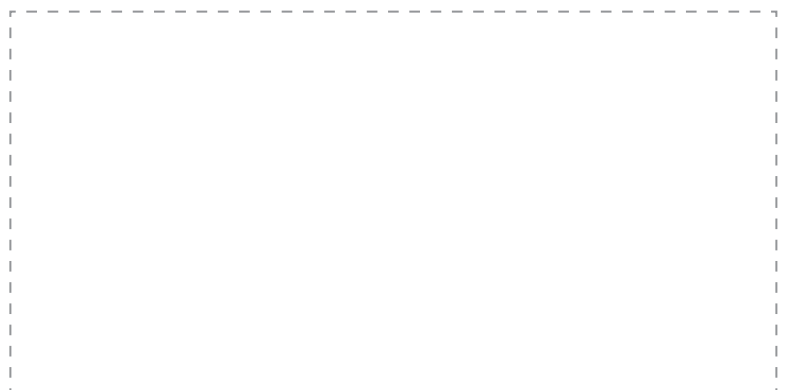
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Bringing two vehicles back to
consciousness after an accident



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SPECIAL SUPPLEMENT

TOYOTA COLLISION PROS

Toyota's 2018 Great Summer Rebate is featured in the latest edition of Collision Pros and online at toyotapartsandservice.com



WEB EXCLUSIVES // ABRN.COM



ENSURE YOUR COMPRESSED AIR SYSTEM IS EFFECTIVE FOR YOUR SHOP NEEDS, DESIGN

Brad Gravenhof, a Sales & Technical Dan-Am Air Specialist with the Dan-Am Company, discusses the importance of a properly equipped and designed compressed air system and how Dan-Am can help.

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Dedicated to
Promoting Quality
Collision Repair of
Toyota Vehicles

Spring 2018



Toyota Rethinks How to Build Vehicles

Toyota's mission to reduce the number of architectural platforms is revolutionizing the manufacturing process

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Protect your customer and your shop by conducting pre- and post-repair scans

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It's the Only Scan Tool Software Approved by Toyota

When repairing Toyota vehicles, only Techstream 2.0 and Techstream Lite make sense

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Contributors to this edition of *Collision Pros*: Ryan Bacsafrá, Agustín Díaz, Michael Kramarz, Alphonso Baker (not pictured) and Rusty Brown (not pictured).



REVOLUTIONIZING THE Manufacturing Process

Streamline, simplify, optimize—our story about the Toyota New Global Architecture (TNGA) is a classic case where less is more. We explore how reducing the number of architectural platforms will simplify the manufacturing process while making it possible to offer customers a wide array of options and more efficient collision repairs for shops. If meeting OE standards on all repairs seems complicated, we're here to tell you it's not. In our article about OEM scan tools, you'll see that by using the right tools and relying upon the best resources, it's easy to ensure that each Toyota you repair is restored to factory standards. Further, it's really your responsibility to your customers to follow OE standards—after all, what's more important than their safety and your shop's reputation? Our articles on following OE guidelines, along with our recommendations about pre- and post-scanning all repairs, emphasize the importance of quality assurance and technical compliance. We also offer some helpful tips when it comes to repairing a vehicle equipped with Entune 3.0 and Service Connect—helping to keep your customers satisfied with both the repair and the repair experience.

Our new website, www.toyotapartsandservice.com, is your newly updated Toyota Wholesale Parts resource where you'll find Genuine Toyota collision and mechanical parts, application charts, parts support programs and OE training opportunities. There's a lot to explore! Visit for yourself to see how convenient it is to find and order Genuine Toyota Parts. 📄



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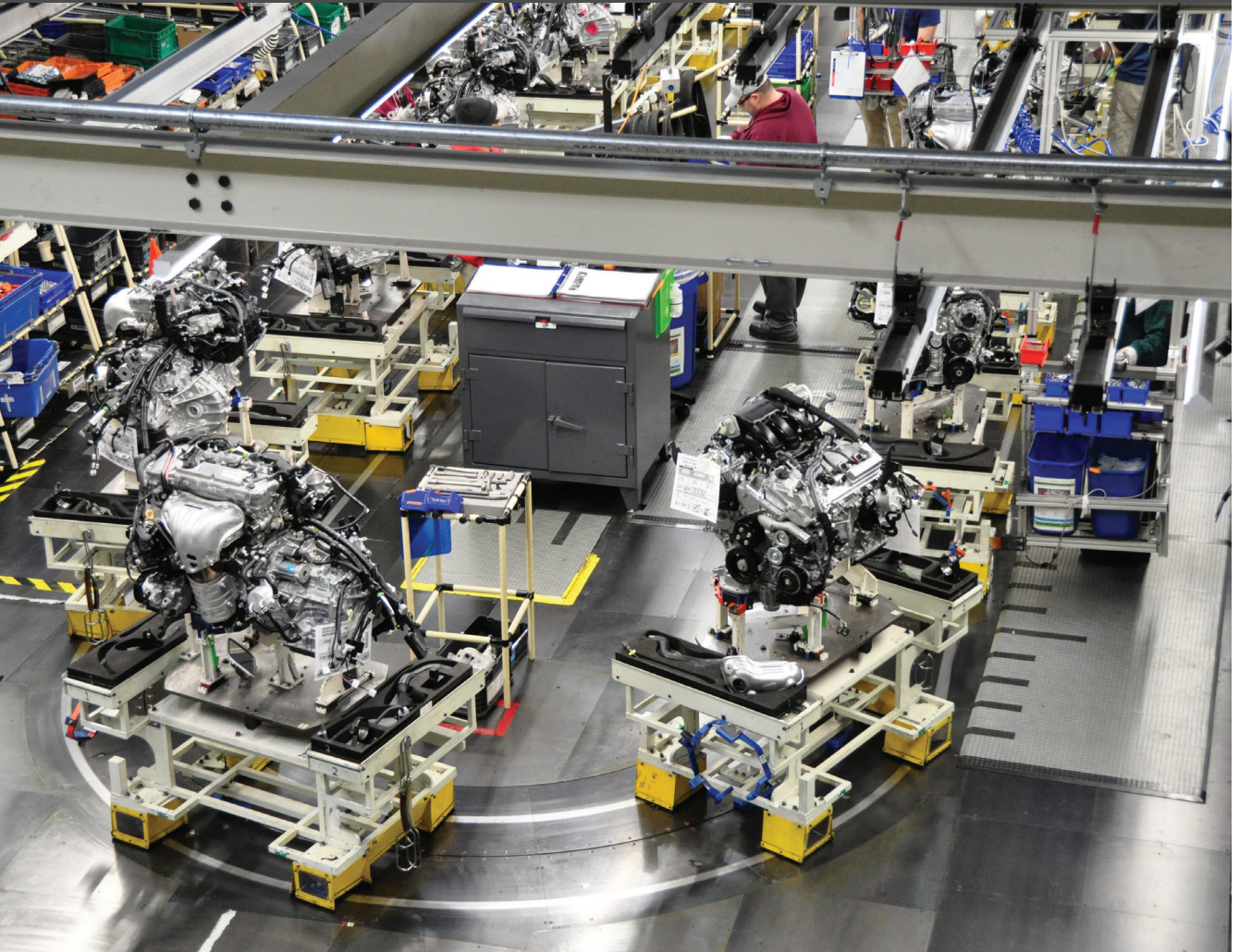


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Where the Pros Go for Genuine Toyota Parts





TOYOTA HAD 105 DIFFERENT ARCHITECTURAL PLATFORMS. NOW, THANKS TO TOYOTA NEW GLOBAL ARCHITECTURE (TNGA), THE NUMBER OF PLATFORMS WILL BE REDUCED TO FIVE.



Toyota Rethinks How to Build Vehicles

A CASE WHERE LESS IS MORE

As a collision repair facility, you must work on a variety of vehicle body styles as well as different chassis configurations (unibody as well as body-on-frame). To streamline the development of new models, as well as to make them easier to repair, Toyota has been on a mission to reduce the number of architectural platforms used to build new vehicles.

INTRODUCING TOYOTA NEW GLOBAL ARCHITECTURE

Up until recently, Toyota had 105 different architectural platforms. Now, thanks to Toyota New Global Architecture (TNGA), the number of platforms will be reduced to five. Just as athletes build their core strength to maximize their performance, Toyota is working on improving the vehicles' core components. To accomplish that goal and to enhance each model's unique features, these new platforms will share their highly functional core components.

The end result will be vehicles that deliver improved agility and dynamic performance thanks to possessing a stronger core. They will be compact, but efficient, and feature progressive design. This is a total rethinking of how to build vehicles: It's about building

[Continued on page 4]



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better vehicles on common platforms with common parts. The aim is to make Toyota's manufacturing plants more flexible and responsive to changes in the marketplace. This flexibility will lead to cost savings that can then be reinvested in future technologies, giving rise to the next generation of Toyota vehicles. Accomplishing these goals will also make these new models easier for your shop to repair as it will only have to be proficient with these five platforms.

THE FOUNDATION OF TOYOTA NEW GLOBAL ARCHITECTURE

The platform is the basic core around which the rest of the vehicle is built. In addition to more than a hundred different platforms, globally Toyota currently uses more than 800 different powertrains, including engines modified to fit those different platforms. By adopting TNGA, Toyota can cover the entire range of vehicles—from compact sedans and sports cars to SUVs—with just five platforms.

In addition, all key interior components such as steering wheels, gear shifters, pedals and airbags will be dictated by five standardized seat heights. Designers will select a seat height and the vehicle's purpose (whether it's a sedan, sports car or SUV), which will lead to a concise decision tree of accompanying components. Then, thanks to unique interior finishes combined with bold exterior styling, this simplification of the platforms becomes invisible. That's because TNGA is built on two pillars: core strength and emphasized personality. Core strength relates to increased chassis stiffness and a lower center of gravity to improve the basic performance of the core (or essential) parts and raises the level of all Toyota vehicles. And by sharing high-performance components, chief engineers are able to focus on accentuating the appeal of each model, giving them more personality.

Using standardized platforms, powertrains and major components will help Toyota make cars that require fewer resources to build and provide a safer and more enjoyable drive with even greater fuel efficiency.



The aim is to make Toyota's manufacturing plants more flexible and responsive to changes in the marketplace. This flexibility will lead to cost savings that can then be reinvested in future technologies, giving rise to the next generation of Toyota vehicles.



EXAMPLES OF TNGA IN ACTION

The 2017 Prius represents the first vehicle built with TNGA. The result is a vehicle that is more powerful and fuel efficient, produces lower emissions, and weighs less thanks to the use of lighter materials. In addition, this Prius delivers enhanced visibility and legroom and features a lower and wider stance, more responsive steering, and improved ride and handling, all with more athletic and aggressive styling.

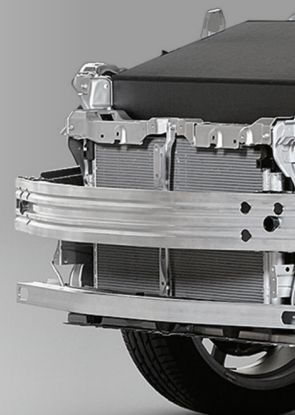
The 2018 Toyota Camry is the first North American TNGA assembled vehicle.

Moving forward, TNGA will help shorten the development cycle for vehicle improvements and getting new vehicles to market.

TNGA SEGMENTS

Currently, there are two primary TNGA segments:

- **GA-C Platform**—applied to the fourth-generation Prius, second-generation Prius Prime (PHEV), 2018 C-HR and the upcoming 2019 Corolla
- **GA-K Platform**—applied with the 2018 Camry and 2019 Avalon



TNGA LEADS TO NEW ASSEMBLY TECHNOLOGIES

In refining the design and manufacturing process, TNGA has led to the adoption of various new technologies:

- Paint shops are designed to use less water and reduce plant waste by shifting to lower-sludge-producing metal oxide phosphate paint chemicals.
- Shared parts and components mean multiple vehicles can be assembled on the same line.
- Hot stamping and new adhesives create a stronger, more rigid chassis.
- Laser screw welding instead of traditional spot welding also contributes to a stronger chassis.

Another example is bumper production: A new plastic mold machine makes one-piece bumpers using new adhesives that improve body stiffness, which contributes to better handling. And, this machine can produce a Camry bumper, then an Avalon bumper, then a Camry bumper based on production demand vs. batch production, improving assembly line flexibility.

TNGA'S FIVE DOMAINS

TNGA affects owners in these five areas:

1. **Driving Quality:** Making vehicles that are satisfying to drive
2. **Comfort:** Comfort that makes drivers want to keep on driving by creating an enjoyable total sensory experience
3. **User-Friendliness:** Smart technology that enriches the daily driving experience—including everything from luggage space to fuel consumption
4. **Pride of Ownership:** State-of-the-art environmental performance teamed with sophisticated styling
5. **Security:** Creating a strong body that protects the driver and passenger, then adding world-class security features 🚗



What TNGA Means for the Collision Repairer

Through TNGA, Toyota is revolutionizing the manufacturing process. It also represents a pioneering of the design and development of future automobiles for the coming decades. Put simply, a greater focus on standardized parts and components means Toyota's future vehicles will be more attractive and more engaging to drive. They'll be easier to design and develop and will deliver more quickly. What it means to you, the collision repair facility, is that it's also more efficient for you to repair vehicles, as you'll be working with only five basic platforms. Fewer repair procedures and simplified repairs—proof that less is even better than before.





THE IMPORTANCE OF Pre- and Post-Scanning

IT'S ALL ABOUT UNDERSTANDING WHAT'S GOING ON INSIDE A VEHICLE

Imagine this: You go to the doctor. The doctor comes in, asks a couple of questions, writes a prescription and leaves. The doctor didn't even take your temperature or use the stethoscope to listen to your heart, but he gives you a diagnosis anyway. How would you feel?

You'd probably feel like the doctor wasn't doing his job.

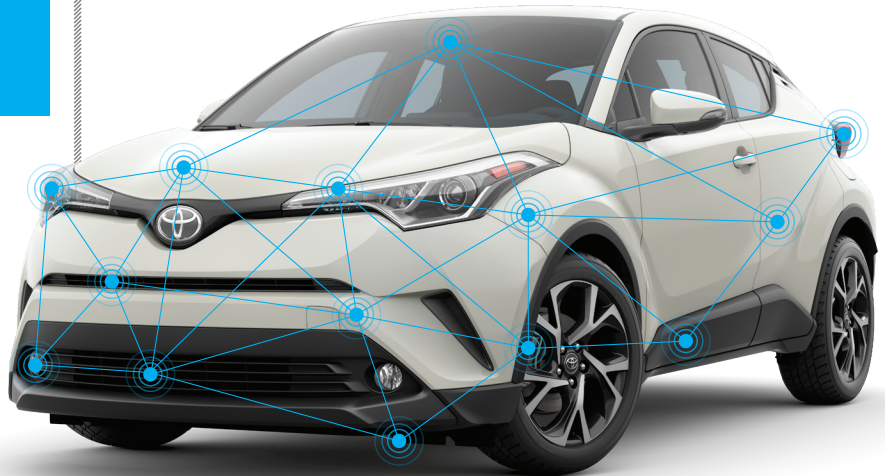
Your customers may feel the same way if you're not scanning vehicles when they come into your shop and if you're not scanning the vehicle once the work is complete. How have you verified that the vehicle is really repaired correctly?

SCANNING PROVIDES A SNAPSHOT OF WHAT YOU CAN'T SEE

Today's modern vehicles are complex, with multiple computers, sensors and state-of-the-art technology. To monitor the integrity and functionality of these systems, manufacturers have created scan tools that plug into the vehicle and electronically monitor each system, noting any issues via Diagnostic Trouble Codes (DTC). The challenge is that a lot of shops don't scan vehicles before repairs are started or after repairs are completed. One reason why scanning is so important is quality assurance, to help ensure



Running a collision repair center is difficult enough. By pre- and post-scanning every vehicle that comes into your shop, you're better equipped to fix them right the first time and maintain a higher level of customer satisfaction.



the vehicle is in optimum operating condition when it's returned to the customer.

IT STARTS WITH THE PRE-SCAN

Let's go back to the doctor example: If you don't tell your doctor about a pre-existing condition, then the diagnosis and remedy could be wrong. The same may apply to a vehicle that's been in an accident—something may have been damaged that isn't obvious to the naked eye.

Here's an example: A Camry comes in with a damaged passenger rear quarter panel. It's decided that the damage doesn't warrant a pre-scan, so only the quarter panel is repaired. The customer picks up the Camry, sits in the car, and discovers that something is not functioning. The customer claims the damage occurred as a result of the accident or while the vehicle was in your shop, and they want you to pay for the repairs. That leaves your shop in a precarious position, because you do not know if it was a pre-existing condition or if it did, in fact, occur during the repair process at your shop.

Now, had the shop performed a pre-scan when the car was dropped off, the technician would have noted any DTCs,

and those issues would have been listed on the repair order and could have been addressed during the estimating phase, thus limiting shop liability.

PREVENT CHANGE ORDERS

Another advantage of pre-scanning is that you know what DTCs have been set, what issues need to be addressed and what parts need to be ordered to complete the repairs. If you only scan vehicles after repairs are complete, then you run the risk of discovering additional damage that can create delays and upset customers, as you may need to have parts shipped overnight, which adds to the cost and the repair time. It also means that you have to contact your customers to tell them the repairs won't be completed on time.

Case in point, a vehicle comes in with a deployed driver's airbag. A new airbag is ordered, but the vehicle was not scanned, so the shop didn't detect damage to the seatbelt pretensioner, which also needs to be replaced. Now there's a change order to the insurance company to account for the difference between the final cost and the original estimate, and the repairs are delayed while waiting for

the part.

Another benefit of conducting a post-scan it can reveal if something failed during the repair, and it can be addressed before the vehicle is returned to the customer.

LONG-TERM CUSTOMER SATISFACTION

Toyota has always been about fix it right the first time—whether it's a mechanical issue or collision repair—and for good reason. After an accident, it's easy for customers to lose faith in their vehicle, the dealership, and your repair facility if things are not fixed right the first time. By conducting pre- and post-scans, your shop can identify the problems before you start work and confirm that they have been addressed before returning the vehicle to the customer.

Running a collision repair center is difficult enough. By pre- and post-scanning every vehicle that comes into your shop, you're better equipped to fix them right the first time and maintain a higher level of customer satisfaction. 🐾

WHY GENUINE TOYOTA

OEM Scan Tool Software Makes Sense

It's the Only Scan Tool Software Approved by Toyota

TECHSTREAM SOFTWARE IS THE OFFICIAL OEM DIAGNOSTIC SOFTWARE USED DAILY BY TOYOTA/LEXUS DEALER TECHNICIANS to diagnose and service Toyota/Lexus vehicles, so why not use what the dealers use?

FEATURES AND BENEFITS:

- Techstream software offers diagnostic support for most 1996 and newer Toyota/Lexus/Scion vehicles with DLC3/OBDII diagnostics
- Supports ECU reprogramming for most Toyota/Lexus/Scion ECUs on 2002 and newer vehicles
- Offers a vehicle Health Check function that provides DTC, FFD, Calibration, Service Bulletin and Campaign data for each vehicle with one click
- Provides access to factory level (C-Best) vehicle customization settings
- Allows most computers, ranging from netbook to a fully featured PC, to use factory diagnostic software

Techstream software provides some advantage over the aftermarket by integrating functionality between the diagnostic software and TIS, the Toyota Technical Service Information Site. For example, being able to pass vehicle information directly from the diagnostic software to the TIS site for quicker service information searching.

Techstream software can be downloaded and installed on any laptop/PC that meets minimum PC requirements and when combined with a Techstream Lite kit (MongoosePro MFC 2 cable) provides a low-cost OEM level scantool alternative. For more information about Techstream Software please visit <https://toyotaade.snapon.com> and/or call by phone at 1-800-368-6787. 📞



When it comes to working with the complex electronics on Toyota vehicles, using Techstream software makes sense.

<https://toyotaade.snapon.com>

Live up to your image. Your customer's safety and your shop's reputation are on the line every time you repair a vehicle. To ensure you're restoring a vehicle to pre-accident condition use Toyota's resources like Technical Information System (TIS) and be sure to follow all of Toyota's repair procedures.

REPAIRING TO OEM STANDARDS

TOO GREAT TO IGNORE

RECENT EVENTS IN THE COLLISION REPAIR INDUSTRY have caused us all to stand up and take notice. Whether you're an owner, operator or technician in a collision repair facility, the need to follow OEM repair procedures has become too great to ignore.

YOUR SHOP BEARS RESPONSIBILITY FOR REPAIRS

Gone are the days of body shops caving to insurers' requests to reduce expenses by not following OEM repair procedures.

Safety is the number one priority in returning a vehicle to its original factory standard.

Insurance and accident investigators try to determine liability after any collision. The key questions are: Was the vehicle involved in a prior collision? If so, who repaired the vehicle? Did they repair it to OEM standards following OEM procedures? The bottom line: If a shop improperly repairs a vehicle and the structural integrity is compromised, the shop could bear responsibility for improper repairs.

ALWAYS FOLLOW OEM REPAIR PROCEDURES

To ensure that a repair is properly performed, the vehicle must be scanned with an OEM scan tool and OEM repair procedures must be followed. If you're a shop manager, you need to make sure that your technicians aren't cutting any corners. Everyone who touches a vehicle has responsibility to ensure that OEM repair procedures are always followed.

YOUR RESPONSIBILITY CONTINUES FOR THE LIFE OF THE VEHICLE

Your lawful responsibility continues no matter how many times ownership is transferred. Many shops state that they warranty the repair only to the person who owns the vehicle at the time. However, if you repaired it, you may be legally responsible for it no matter how many times the vehicle changes ownership.

Ensure that your shop follows OEM standards with every repair and every vehicle. If your customer's safety is your highest priority you'll help protect your customer and your business. 🚗



For more information, refer to CRIB # 2016-191 in Toyota Technical Information system (TIS) <http://techinfo.toyota.com>

Connectivity and Infotainment



The vehicle can be put into Service Mode with Techstream. For more details, refer to the repair manual.

ENTUNE 3.0 WITH SERVICE CONNECT

TOYOTA CONTINUES TO RAISE THE BAR IN CUSTOMER SATISFACTION AND PRODUCT INNOVATION. Entune Audio Plus and Entune Premium Audio are equipped with the latest version of Entune 3.0, which includes Service Connect. Available on all three trim levels of the 2018 Toyota Camry Hybrid, Service Connect will eventually roll out to the entire Toyota vehicle lineup. With Service Connect, owners no longer need to worry about keeping track of required vehicle services. Convenient Vehicle Maintenance Alerts notify owners when maintenance is required and even let them schedule service appointments via a mobile app or an email.

HEADS UP

When a Maintenance Indicator Lamp (MIL) is illuminated showing, for example, “Check Engine” or “Check ABS,” Service Connect will display a vehicle maintenance alert on the multi-media screen. Customers who have registered their vehicle in Service Connect can contact their dealer to set a service appointment by touching the soft key on the display.

The most important resource your shop has regarding properly repairing any Toyota vehicle is Toyota’s Technical Information System (TIS). This is where you’ll find everything you need to know about a vehicle—from trim codes to specific build data—and it will confirm whether the vehicle has Service Connect. Thanks to TIS, users have all product support and repair information right at their fingertips.

SERVICE MODE TEMPORARILY SUSPENDS VEHICLE ALERTS

Service Connect is handy—especially if there’s ever an issue that might otherwise go undetected. One thing to note, however, is that if the vehicle is in an accident and requires repairs, it must be put into “Service Mode” so the owner doesn’t continue to receive vehicle alerts while it’s being fixed. When the vehicle is repaired and ready to go, be sure to reactivate Service Connect.

SUPERIOR PERFORMANCE

Toyota’s infotainment system, Entune 3.0, is the easiest way for owners to effortlessly find new destinations with an integrated navigation system or enjoy their favorite stations like Pandora or iHeartRadio. Vehicles equipped with Entune 3.0 Audio Plus and Entune 3.0 Premium Audio keep customers connected with Safety Connect, Remote Connect and Service Connect. To learn more about Service Connect go to www.toyota.com/entune. 📱



Service Connect keeps owners and their vehicles well connected and well informed.”

—Alphonso Baker, Jr., Senior Entune Analyst, Toyota

2018 GREAT SUMMER REBATE



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\$15 REBATE

on Genuine Toyota Radiators or Condensers*
Purchased from June 1 – August 31, 2018



toyotapartsandservice.com

*88460-AZXXX and 16410-AZXXX
part numbers only

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WEST CALDWELL, NJ

06/12	503	Steering & Suspension Analysis & Repair
06/13	602	Advanced Hybrid Collision Repair
07/10	300	Welding Techniques For Collision Repair
07/11	301	Non-Structural Body Repair Techniques
07/24	460	Structural Body Repair Techniques
07/26	602	Advanced Hybrid Collision Repair
08/07	200/201	Color Matching For Painters
08/15	300	Welding Techniques For Collision Repair
08/16	601	Hybrid Collision Repair
08/21	250	Advanced Painting Techniques

JACKSONVILLE, FL

06/18	200/201	Color Matching For Painters
06/20	250	Advanced Painting Techniques
07/09	601	Hybrid Collision Repair
07/10	300	Welding Techniques For Collision Repair
07/11	301	Non-Structural Body Repair Techniques
07/23	602	Advanced Hybrid Collision Repair
07/24	503	Steering & Suspension Analysis & Repair
07/25	460	Structural Body Repair Techniques
08/13	601	Hybrid Collision Repair
08/14	300	Welding Techniques For Collision Repair
08/15	301	Non-Structural Body Repair Techniques
08/21	200/201	Color Matching For Painters
08/22	250	Advanced Painting Techniques

TORRANCE, CA

06/12	601	Hybrid Collision Repair
06/13	300	Welding Techniques For Collision Repair
06/14	301	Non-Structural Body Repair Techniques
06/20	601	Hybrid Collision Repair
06/21	503	Steering & Suspension Analysis & Repair
06/26	250	Advanced Painting Techniques
06/28	101	Paint Finish Repair
07/10	300	Welding Techniques For Collision Repair
07/11	301	Non-Structural Body Repair Techniques
07/16	200/201	Color Matching For Painters
07/18	250	Advanced Painting Techniques
07/20	101	Paint Finish Repair
07/24	601	Hybrid Collision Repair
07/25	908 ISC	Retractable Hard Top

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TOYOTA



CCC'S SUSANNA GOTSCH PRESENTS at the Collision Industry Conference meeting in April.

MARKET TRENDS

COLLISION FREQUENCY TO DROP, BUT REPAIR COSTS TO RISE

KRISTA MCNAMARA //
Content Channel Director

➔ WESTMINSTER, COLO. — As added safety features continue to be implemented into new car design, industry analysts are predicting collision frequency to drop by about 30 percent by 2050. However, because of the complexity of new technology and safety features, repair costs will continue to rise.

Susanna Gotsch, director and industry analyst with CCC, presented an update

from the company's Crash Course 2018 report to the attendees of the Collision Industry Conference in Denver in April.

Currently, there continues to be growth in collision frequency, but this trend is expected to taper off. Gotsch explained that multiple factors have continued to push the rate of collision frequency — including more severe weather such as hail, extended winter weather patterns and a growing U.S. population that is put-

>> CONTINUES ON PAGE 6

BREAKING NEWS

DIAGNOSTICS

BUILDING YOUR DIAGNOSTIC REPAIR PROCESS

ASTECH //
Contributor

➔ After a vehicle has been involved in a collision, there may be hidden damage. Without diagnostic testing, it is impossible to tell if everything is working the way that the OEM intended.

The technology controlling the safety systems on today's vehicles is complex and sophisticated. Even the slightest impact can alter or damage the way these systems operate. Many times, even in minor accidents, additional diagnostic trouble codes are introduced in the vehicle. Specific calibrations may be required to restore the vehicle back to pre-accident condition. A simple process like removing the rear bumper cover or removing a door handle can create diagnostic repair issues. These issues must be addressed prior to returning the car to the customer.

To be certain that all vehicles are returned to pre-collision condition, a repair technician should perform a diagnostic post-scan. In fact, the

>> CONTINUES ON PAGE 8

TRENDING

ASA MEETS WITH LEGISLATORS ON AUTOMATED VEHICLES

The Automotive Service Association met with key leaders in Washington to discuss automated vehicle policy and data access for independent automotive repairers.

ABRN.COM/ACCESS

SEARS DONATES TO SUPPORT CREF

Sears has donated more than \$160,000 in equipment — tool boxes —and monetarily to support collision school students through the Collision Repair Education Foundation.

ABRN.COM/SEARS

HYUNDAI RECOMMENDS PRE-, POST-REPAIR SCANS

Hyundai Motors America recommends pre- and post-repair scans to ensure safe and accurate repairs and that all systems and components are functioning.

ABRN.COM/SCANNOW

MITCHELL RELEASES 2018 Q1 INDUSTRY TRENDS REPORT

Mitchell released its Q1 2018 Industry Trends Report, which provides insight on AI, the importance of proper and safe repairs and the role of auditing billing.

ABRN.COM/ITR2018

GM DETAILS NEW CERTIFICATION PROGRAM

At NORTHEAST 2018, General Motors revealed details of its new collision repair network certification program that is looking to track new performance and repair standards.

ABRN.COM/GMPROGRAM

>> CONTINUED FROM PAGE 5

ting more drivers on the road, although not more miles driven per driver.

In the U.S., more than 85 percent of people still use an automobile as the primary means of transportation to work. We are also seeing a new millennial generation that is putting off lifestyle decisions — buying vehicles, getting married, moving to the suburbs and having children — all behaviors that impact the number of vehicles on the road and miles driven.

Miles driven continues to grow, but slowly. And it is the byproduct of more cars on the road, not individual drivers driving more. Although vehicles continue to get safer, driver behavior remains risky, with more drivers on the road texting, reading emails, engaging in social media and talking on hands-free phones.

Going forward, autonomous vehicles will continue to dominate the headlines, and first-generation driver assistance

features will continue to be embedded in many new vehicles today. The number of vehicles on the road will continue to grow, while retirement/scrapage rates have remained relatively constant over a period of 30+ years. “We are going to see growth in the fleet, which means opportunity for accidents and accident frequency to stay at steady rates,” Gotsch said.

By 2050, the Insurance Institute for Highway Safety (IIHS) and the Highway Loss Data Institute (HLDI) are predicting nearly 100 percent of vehicles will be equipped with ADAS technologies.

“This technology is working and will reduce crashes,” Gotsch said. CCC is estimating that by 2050, there will be a 30 percent reduction in crash claims for vehicles equipped with ADAS technology.

So repair frequency is estimated to drop significantly in the future. But the market should not panic, as repair costs continue to rise.

Another repair challenge that continues is understanding what requirements are needed for each individual vehicle, Gotsch said. Higher repair costs are leading to longer repair times — this includes more time needed to research repair standards, more parts to replace and more technology to understand and calibrate. As technology increases, shops should expect to see more pressure from the market to have OEM certification and a certain level of continued training.

In summary, CCC is expecting to see a steady level of claim frequency. People are buying more vehicles. Over time, ADAS will reduce frequency. Repair costs will continue to grow 2-3 percent annually. And the market will be driving the need for proper repairs.

“The market is a challenging market, but it also offers a lot of opportunity for those willing to make those investments moving forward,” Gotsch said. ■

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INSURANCE PROGRAM COVERS PERMITTING, COMPLIANCE PROBLEMS

BRIAN ALBRIGHT // Contributing Editor

Maintaining the right certifications, licensing and permitting can be a challenge for body and mechanical repair shops as regulations increase both in number and complexity.

Compliance records service provider RecsLock has teamed up with the Independent Automotive Damage Appraisers (IADA) Association to help shops ensure they are up to date on permitting, but at a lower cost (and with less labor) than managing the entire process themselves.

The new Government Agency Synchronized via Compliance Appraisers Permit Picture (GAS CAPP) insurance program will use cloud-based software to produce status reports and alert owners of any problems that could delay or impede the permitting or certification process. RecsLock executive director Steve Schillinger compares GAS CAPP to AFLAC – it's another level of coverage that can help shops maintain compliance without spending a lot of time on administrative tasks they won't be reimbursed for.

The GAS CAPP program offers a variety of different cover-

ages that can help shops recover if there is a business interruption or fine related to permitting or compliance issues. The coverage can also reimburse for unexpected expenses related to inspections or ticketing (like lab testing).

For shops that sign up, the members of IADA will conduct on-site audits as part of their regular visits to the shops to help identify any permitting problems or compliance issues.

Shops will be able to pull data online from an existing database to improve the efficiency of the permitting process. "One of the main advantages of this program is that shop professionals can now submit plans, reports and fulfillment online," Schillinger says.

IADA appraisers will be assigned to document and verify that nearby shops have current permits and documentation, including taking photos and creating a documentation inventory.

As a validating source, IADA will provide documentation to the shops so they know exactly where they stand with their permits, licenses and certifications.

According to Schillinger, shops can benefit through reduced permitting time, improved record keeping, enhanced communication with authorities, and employee efficiency. ■

>> CONTINUED FROM PAGE 5

OEMs recommend it. Performing both pre- and post-scans is an approved way of guaranteeing that the vehicle is repaired to pre-collision condition.

An accurate and efficient repair process can only be achieved if all damaged parts and necessary repairs are identified before repairs begin. Photos can help in this process, but can only show the visible damage. Damage to the vehicle electronics will not likely be seen by the naked eye.

Modern vehicles are equipped with sophisticated safety electronics, modules and sensors. These sensors control many of the safety aspects of the vehicle. A damaged sensor puts the driver and their passengers at risk of injury. It isn't possible to determine if a module, such as the airbag module, is working just by looking at it. Scanning reduces liability for the all parties involved.

A disassembly for repair (DFR) process ensures all damage is identified up front. Performing a scan on a damaged vehicle prior to beginning repairs will help isolate all damaged electrical parts and prevent unnecessary delays after the repairs have begun. Following a DFR process can in certain situations reduce the overall severity of a loss by lowering the number of rental days, shortening repair cycle times, meeting completion dates and improving the overall customer experience. ■

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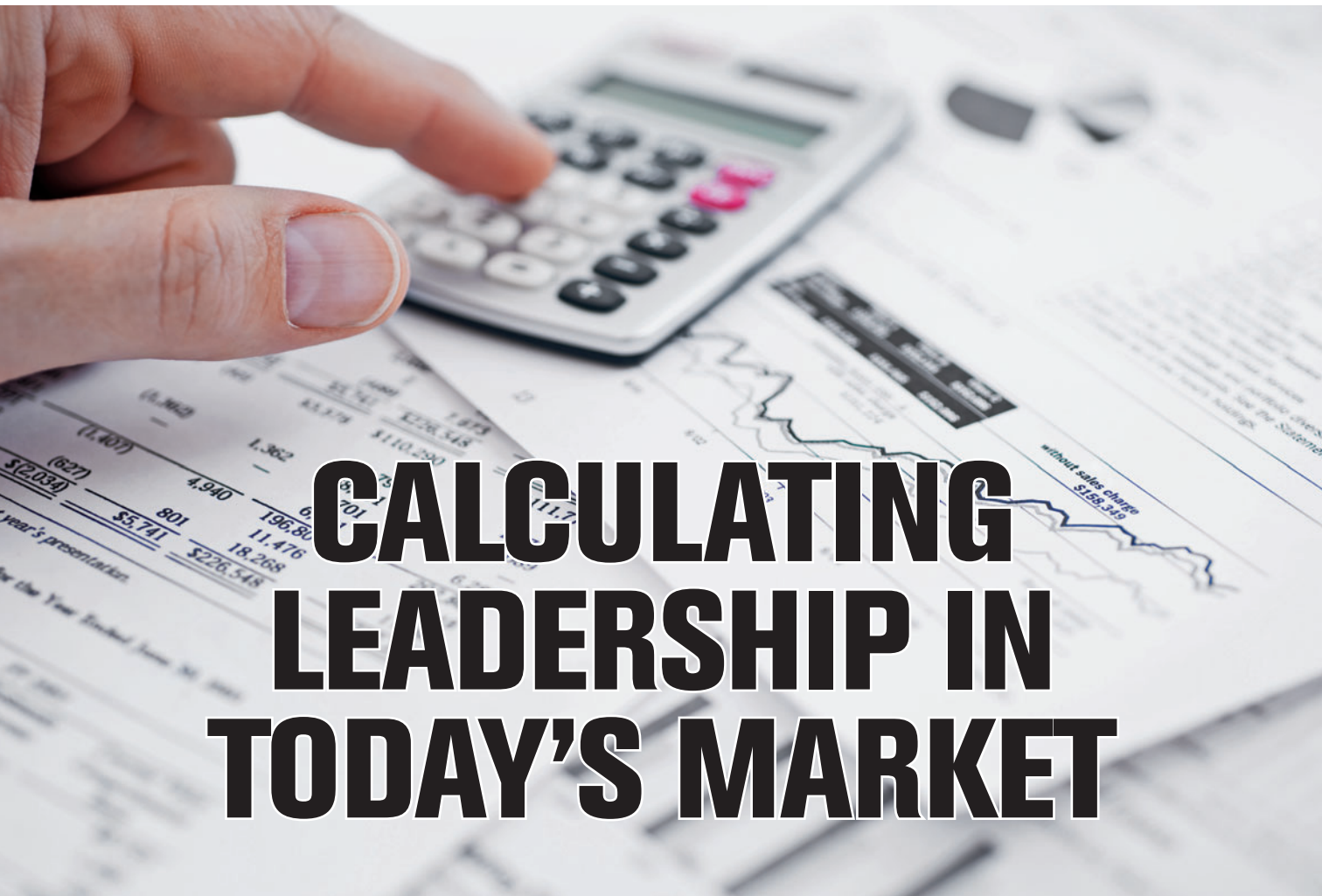
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CALCULATING LEADERSHIP IN TODAY'S MARKET

New school artificial intelligence + old school measurement = modern shop management

DAVID ROGERS // Contributing Editor

In mid-2017, Audi announced its new A8 would be fully self-driving up to 40 miles per hour. Nissan is following suit with a full range of driverless vehicles by 2020.

Meanwhile, robots are performing surgery, computers are diagnosing cancer, and in late 2017, the news media reported on the ability of machines to replace teachers in the classroom.

Welcome to a world driven by Arti-

ficial Intelligence, commonly known as AI, where computers can learn and do problem solving. The technology that helped a computer beat a Grand Master at chess in 1997 is now helping drivers automatically parallel park their cars and avoid accidents, and will soon help drivers get around town without touching the steering wheel.

Being able to service this technology is critical for technicians, of course, and

continuing training and education will be critical for survival in this industry.

But that's not the point of this article.

Embracing change

Change has always been a way of life for technicians. Bluetooth is replacing cables and hoses just like sensors and computers replaced the carburetor. Technicians already know they need to keep learning.

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The real change is coming for owners. For every early technology adopter, there are two more owners still doing tickets by hand, relying on word of mouth and comfortable with just getting by.

In this new world, teachers, drivers and surgeons are slowly being replaced by algorithms, and shop owners are unlikely to be the exception to the rule. If we don't hurry up and use the tools and technology available to us to run our shops, somebody else will use that same technology to take our shops.

The mountain in front of us

A 2017 industry-wide survey conducted by a national automotive industry resource found that a full 32 percent of shops do not regularly track their important benchmarks. Of those that are regularly tracking, a full quarter of shop owners aren't measuring the efficiency of technicians — a basic metric of measuring a team.

And, these numbers are worse than 2015! The industry could see and smell the smoke back in 2015, and rather than extinguish the problem, we decided to wait for the fire to burn itself out.

Even on the surface, this is a monumental problem. It is not less expensive now to operate a shop than it was two years ago, and will not be less expensive two years from now. Ignoring business metrics even in the best of times is detrimental.

But this is far from the best of times for the independent shop owner.

I started off this article by talking about AI. Let me use it to bring this point straight to home.

In late 2017, an article I read on a blog called "Medium" shined a light on a program that major cell phone companies created. Those companies are selling real time data about you — your number, your provider, your address, plan type, type of phone and even current location — to purchasers.

Granted, your cell phone plan may not reveal a lot about you. But when it's combined with information about the vehicle you drive and your online purchase history, this metadata builds a picture of you. Who you are, what you like, how you buy.

This isn't a warning about your digital privacy, though. I'm telling you that if a large company — say, a car manufacturer — wants to build a profile of a perfect customer, they only need to purchase the data and use AI to identify trends.

They have purchasing power that independent shops do not: to buy massive amounts of data and AI programmers who can turn that data into actions.

We are staring down the barrel of manufacturers being able to target and steal your customers with laser-like precision — and half of the owners in our industry don't even measure how their employees are performing each day.

How to adapt successfully

First and foremost, you must close the knowledge gap.

Our industry is still dominated by poorly-focused, activity-driven marketing. We still allow marketing companies to cherry pick numbers like return on investment without looking at the actual behavior and trust of the customer base they drive.

In an age of machine learning, that's unacceptable. If a campaign makes you busy, but ends up replacing your customer base with no-value coupon chasers, it's wasted money. Doing so when we can quickly measure the effect of marketing is wrong. Doing so when a computer can quickly learn where your best customers are and target them with the right message is conceding that we want the dealerships and chains to win.

You can probably not afford the

data or the payroll needed to do that in-house, so step one must be to switch to a marketing company that is data-driven and results focused.

That knowledge gap extends to shop measurement.

We already know that half of shops aren't measuring their employees regularly. Of those that are measuring, only a fraction are doing so daily.

The fact of the matter is that we cannot hope to survive long as independent shops if we're not willing to do the basics. Too many of us are content to look back at the previous month to try to measure going forward.

Setting aside AI for a moment, this can't keep happening. If you don't know how you're doing until the month has passed, it's too late to fix anything. You can make changes, sure, but the money you lost last month is gone.

Unless you make the change today, you can't save this month either.

The picture is even more clear with AI. Consider what the dealerships and chains can learn with their resources. They can know their most efficient employees, how to effectively dispatch and can manage inventory based on data from locations coast to coast.

And half of us won't even do basic measurement.

The truth is, shop owners are about to face a reckoning. Unless you think techs will be easier to find in the future, or that costs will go down, or that you'll face less competition, the only answer is to take a giant step forward. We must do better marketing, we must manage smarter, and we must start measuring our business like the future is already here.

If you want to know how we're using AI daily in our shop to measure and market, visit <https://autoprofitmasters.com/>. 📱



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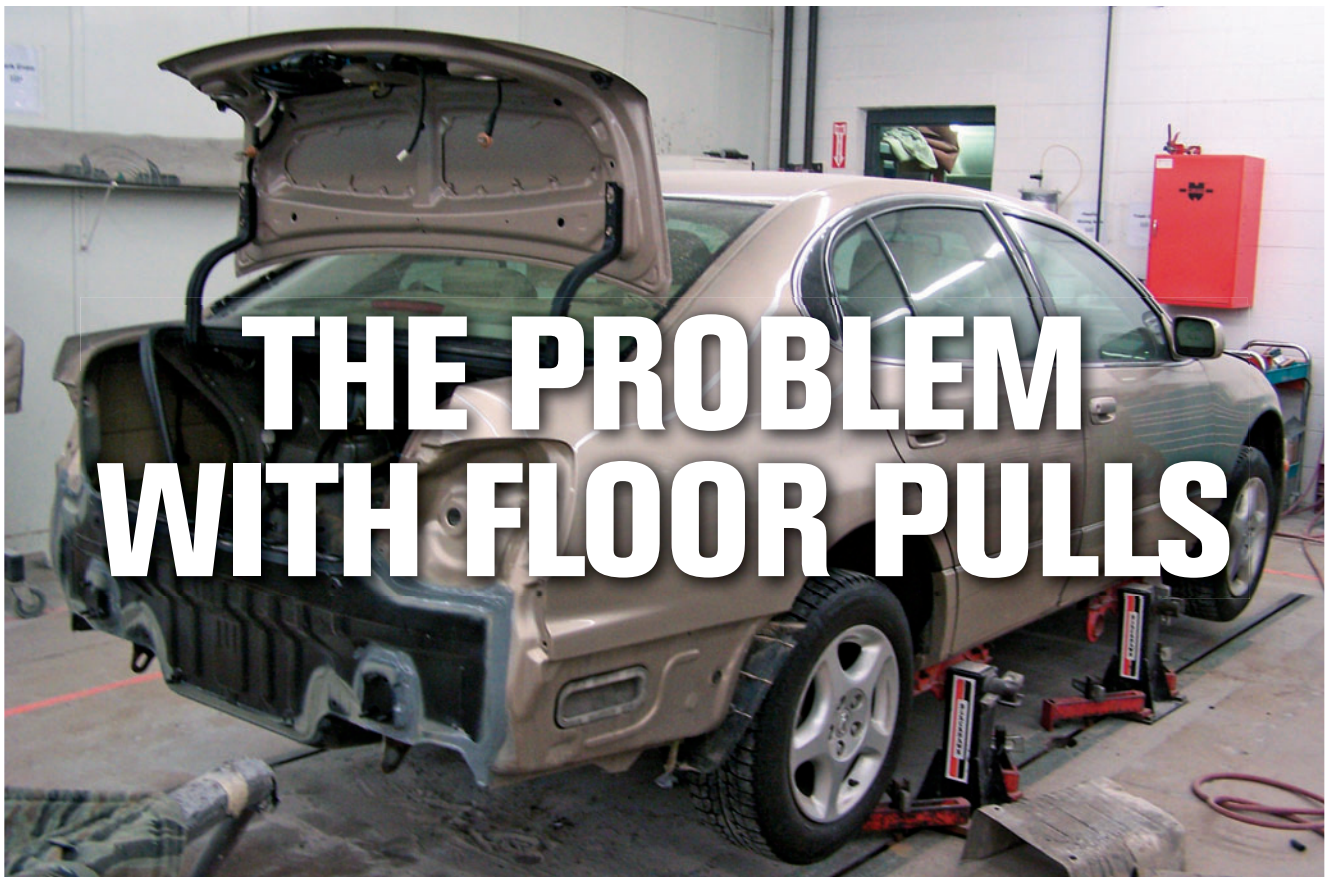
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THE PROBLEM WITH FLOOR PULLS

While it once had a place in collision repair, this process doesn't work on today's vehicles

JOHN SHOEMAKER // Contributing Editor

There I was reviewing estimates at a shop and found “floor pull” written on two estimates where the damage was assessed by the same insurance adjuster. As the shop manager and I were discussing the issue with floor pulls, the insurance adjuster walked up to the vehicle we were reviewing.

Those of you who know me can visualize what happened next. The shop manager and I told the insurance adjuster we were discussing the need to set the vehicle up on the frame machine and measure it before any pulls were performed. The adjuster said, “Nah, just hook up to it to

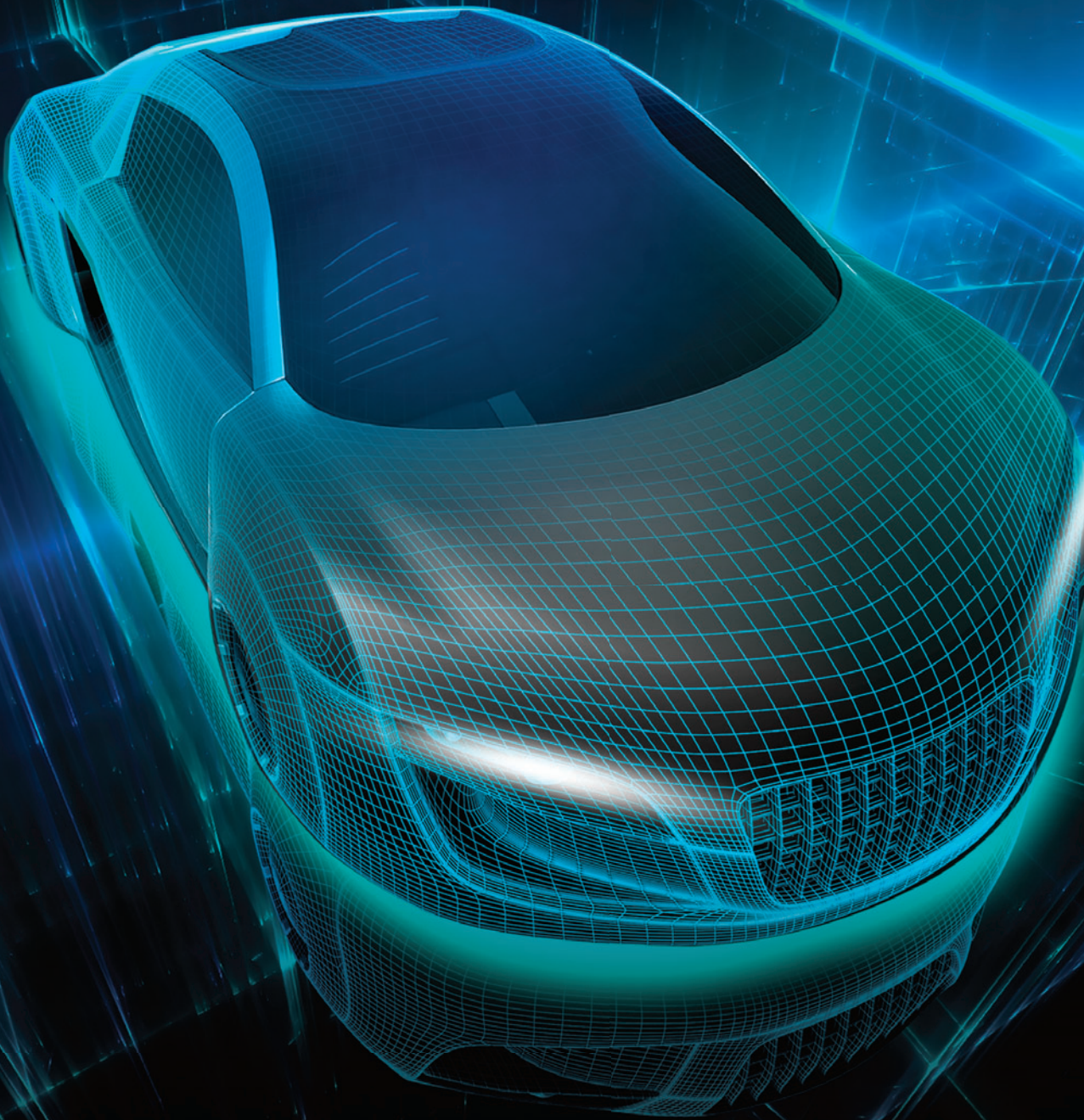
see if you can line it up.” I, playing the devil's advocate, asked the adjuster what he thought pulling the vehicle without it being properly secured would do to the rest of the vehicle. He didn't really have an answer, but eluded the question by saying, “If pulled properly, nothing else on the vehicle should be affected.” I went on to tell him what I will tell you in this article.

The problem with floor pulls is you do not know exactly what is moving during the pull. Unibody structures are made from a variety of metals, all of which have different reactions to pulling forces. You also do not know what was actually damaged during the collision and you would

only be pulling visible damage. Along with the primary damage, there is also secondary damage that occurs during a collision. Primary damage is the point of impact and secondary damage is the vehicle's reaction to that impact. Fixing only the primary damage without considering the secondary damage can lead to disaster.

I was at another shop recently where a vehicle was brought in for a post-accident inspection because the vehicle owner felt that something was not right. He had wind noise at both of the front doors and the right rear door was hard to open. The shop that repaired the vehicle

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could not figure out what was wrong.

In the accident, the vehicle slid off the road into a ditch and had damage to the left front. After reviewing the photos of the vehicle damage, the inspector asked if the vehicle was measured during the original repairs. The damage appraisal from the original repairs only indicated a floor pull was performed to correct damage on the

left front. The inspector then had the vehicle measured and found that not only was the left front rail measurement out of specification, but the left front corner of the torque box was also out of specification, as was the right rear rail end.

After reviewing the measurements with the customer and the insurance company, the vehicle was determined

to be a total loss. If this vehicle had been measured properly during the original damage assessment, not only would the damage at the front of the vehicle been identified correctly, but the secondary damage would also have been found.

The first step in determining what was damaged during the collision requires some analysis. The vehicle will tell you where it is hurt — you just need to look. Walk around the vehicle and look for dents caused by compression as well as differences in panel gaps. Next, anchor the vehicle to your frame machine and then measure specific points. A vehicle's structure is separated into three parts: the center section (torque box), the front section and the rear section. The first measurement you should take is of the center section; this is a four-point measurement that will tell you if the center section shifted during the collision. Next, measure the end of the frame rails on the opposite end of the vehicle damage. While this might seem odd, this is a critical measurement because it helps identify any secondary damage. Finally, measure the end of the frame rails on the end of the vehicle with the primary damage. Together these measurements will tell you what is damaged, what part of the vehicle structure moved during the collision and what type of correction you will need to take to restore the vehicle to pre-accident condition.

In the end, the adjuster allowed time to set-up and measure the vehicle and additional damage was found. Use this article to help others understand that while floor pulls might have once had a place in collision repair, they don't work on today's vehicles. Just as scanning has become essential in collision damage assessment, so should structure measurement. 📏



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ONBOARDING NEW HIRES

You've found technicians to hire; now, make sure to bring them on successfully

JOHN BURKHAUSER // Contributing Editor

In my article last month, (“Grow your own techs,” May 2018) we explored looking to local secondary and post-secondary automotive schools as a source of new technicians. Now, let’s look at bringing those new hires into your shop.

For this article, I called, emailed and stopped into different shops to see if they had an onboarding process or system for

bringing in new employees. None did, leaving me to believe that very few shops have anything in place for new hires. If you have a system, feel free to email me the process so that we can share it in a possible future article!

Realize that hiring a person can be a pivotal moment for not only your shop, but also for the individual applying for the job. For you, they may be the techni-

cian who changes everything for the better. For the applicant, it may be the start of a new life for them and their family. Quite a bit rests on who you hire, so why not do it right?

If you raised your own tech via the tech school method, you are already ahead of the curve. Anyone you bring in through that method should give you a pretty good idea of who they are, their at-



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titude and their skill level. It's like trying before you buy. It helps weed out those who would never work out in your shop before you invest more time in them.

If you haven't grown your own tech, the first step is the interview. There should be a process for every interview; you shouldn't fly by the seat of your pants. Here are some steps to consider.

Certifications and drug tests

Inform the candidate of your certification requirements and drug testing policies when setting the appointment for the interview. Have them bring their driver's license; state-issued licenses, such as safety and emissions; and any certifications, like those from ASE. Let them know that you will be running a background check on their licenses. I recommend doing this with every candidate. You would be amazed at what you may find. It is money well spent.

Resume

Have them send or bring a resume. Applicants still in school should bring a report card of their current grades in addition to a resume. When you get the resume, spend some time with it. Write down any observations and questions to use during the interview.

Social media use/personal behavior

Investigate their social media presence. Their behavior online may give you enough reasons to NOT interview them. Look at their posts, see who they are online and see if they're up to any questionable activities. It's also good to note mutual contacts (if any). Reach out to those connections for an unbiased reference.

The interview

On the day of the interview, be sure to note when they arrive, and watch how they spend their time waiting. You can learn a lot from this. Do they fidget? Go outside and smoke? Sit down and do

nothing? It could give you a good idea of what they may be like if you hire them.

Have them ask you some questions too. Make the interview a two-way interaction. Take them into the shop and ask about their experience with any of your shop's specialized equipment. Ask them what they do or don't like about the equipment to gauge their experience and education.

Hiring

If the applicant is a good fit and you want to hire them, get copies of their licenses, have them sign off on the DOT forms, and give them any documentation they need to get a drug test. Give them a time limit for getting the drug test completed while holding off on sending in the DOT request. If they get the drug test done in time, then send in the DOT forms; otherwise save the money and trash the forms.

When they pass all tests and background checks, have them return for a second visit. Discuss your offer and ask any additional questions. If you have an employee handbook or document, give it to them. Then set a date and time for toolbox drop off and employment start.

They're hired!

If you have grown your own tech, I suspect that they have already spent time at your shop and have an idea of how things work. If not, or you are hiring an experienced tech, spend some time orientating them to your shop. Do not just throw them a job and leave them to their own devices! I suggest that on day one, they shadow a senior tech around the shop to see how it all works. (Note: I believe in paying the senior tech for time spent with the new hire. This should be a positive experience for both. Come up with a plan that is fair and doesn't inconvenience the tech.)

Over the next few weeks, the senior tech can start giving the newbie small jobs that are doublechecked upon

completion. Also, during this time, they should be trained on the different pieces of shop equipment they need to be familiar with. Have set milestones for them to complete under the senior tech's supervision.

Once they're settled

After 90 days, I recommend having a one-on-one meeting with them. Beforehand, talk to the senior tech and get their input on the progress over the last three months. Take note of any issues or concerns.

The point of this meeting is to let the new hire know exactly where they stand. Don't make the meeting a negative one; approach all your topics as positively as you can. Of course, discuss any concerns you have. Present the issues (if any) to the new hire and work out solutions with them.

If things are going well enough at this point, give them a raise as an incentive to continue improvement. Set up a path for training and ASE testing. Have the new employee pay any fees or costs related to the training out of pocket and then reimburse them when they pass. (Later in their career, when they have proven themselves, I would recommend fronting the money for these courses.)

You don't have to do all of this, but the biggest takeaway is that you should have a process in place for new hires. I recommend putting together something that will work for your shop specifically. Remember that this process will have a large impact on your shop and your new tech's life. So why not make it a great starting point for all involved? 📧



JOHN BURKHAUSER

is an auto repair specialist with more than 30 years of experience. As the Director of Education at BOLT ON TECHNOLOGY, John

coaches independent and franchise repair facilities on how to grow their business using simple best practices and everyday technology, resulting in increased car count, repair order revenue and customer trust.

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What's leading to inefficient scheduling at your shop

Four root causes to look for and correct in your business to boost productivity

What if there was a way to improve your shop's performance — and possibly dramatically improve it — without making any capital investments or buying anything. What if there was a way to improve productivity and flow, relieve stress on your employees and improve your key performance indicators, including customer satisfaction, all without spending a dime. Would you do it?

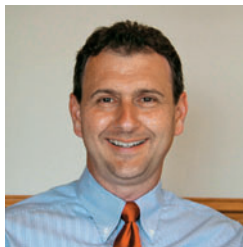
I've seen all those things happen — often in just 30-45 days — in shops that have taken some simple steps to improve how they schedule jobs into their business. These are shops that have said the thing that would most improve their business performance was having more customers, more repair orders. Yet when I first went into their production area, I could quickly count that there were far more vehicles than technicians, with many sitting untouched needlessly.

Now, I know some of those vehicles were waiting for insurer approvals or other unavoidable delays. But too often out of concern of running out of work or losing a customer who may have been willing to wait a week, shops have stuffed as many jobs into the production area as they could without considering how many were coming out each day, completed and delivered on time (as promised).

Think about all the downsides to poor scheduling: a chaotic, stressful environment for employees; customers potentially driving by and seeing their vehicle unmoved from where they dropped it off a day or two previously; missed delivery dates (still the biggest customer complaint about this industry); and added rental costs (for you, your customer or an insurance company).

So what leads to the poor scheduling I see at most shops? There are four root causes. First and foremost, shops overestimate their production capabilities. They don't really know how many units they can produce in a day, a week or a month, so they bring in more than they actually can handle.

Greed can play a factor as well: Let's get that car and keys right now rather than risk losing the job. This fails to keep in



DESPITE YEARS OF DISCUSSION RELATED TO HOW PROBLEMATIC "IN-ON-MONDAY, OUT-ON-FRIDAY" SCHEDULING IS, TOO MANY SHOPS CONTINUE TO FOLLOW THIS.

mind that trying to make a customer happy by getting their car in sooner often results in that customer (or others) disappointed when poor scheduling leads to missed delivery dates.

A third cause of poor scheduling is that too many shops fail to leave space in their schedules for vehicles that are towed in or dropped off unexpectedly. I hear it all the time: "Things were flowing really smoothly until three more jobs came in 'on the hook' that we hadn't expected."

Fourth, despite all the years of discussion related to how problematic "in-on-Monday, out-on-Friday" scheduling is, too many shops continue to do it. I'm writing this column just a week after I was teaching a seminar in Atlanta during which a representative from an MSO acknowledged his location continues to bring in nearly all the work for the week on Monday.

I also can attest to how easily poor scheduling can be resolved. The beauty is it doesn't require a digital solution. There are a number of scheduling software systems out there that can help you track and improve what you're doing and produce nice

reports. But they aren't necessarily going to fix the problem. Poor scheduling is really a management behavioral problem. All it requires is a decision that your shop's performance will improve with consistent, even flow. Even flow moves faster. Jamming too much work into your system just creates speedbumps.

Next month, I'll explain a simple system you can use with information you already have to improve scheduling at your shop. It's a system I've seen shops use with almost immediate improvements in their business. One New York shop I worked with last May called me in late June or early July to say that in a matter of just those few weeks, the shop had gone from stressful chaos to controlled calmness and even flow. ■

STEVE FELTOVICH of SJF Business Consulting LLC, works with dealers, MSOs and independent collision repair businesses to make lasting improvements and achieve performance goals, based on his more than three decades of automotive industry experience. sjfeltovich@gmail.com



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True to his roots

Providing expert collision repairs is in the blood of third generation shop owner

JAMES E. GUYETTE // Contributing Editor

➔ Having grown up in a family of entrepreneurial body shop owners, a youthful Shane Wanjon was independently finding his own way as an up-and-coming painter — working for a boss while further absorbing the intricacies of running a business. And when an industry buddy happened to mention that he was putting his operation up for sale, “I decided to go for it and buy it myself.”

He set about to secure a modest loan and shortly thereafter joined the ranks of ownership, establishing what has evolved into Exclusive Image Paint and Body on Springbrook Avenue in Santa Clarita, Calif., currently grossing \$750,000 in annual revenue.

“When I was 20 years old I opened my first shop and was the only employee in a 4,000 square foot building,” Wanjon recounts. “I would take in a couple cars at a time and do everything from body work and estimating, to painting and delivering the vehicles. Slowly I built up my reputation and started hiring more employees as we got bigger. I eventually outgrew that location and moved into a 7,500 sq-ft building where we could really start producing a decent numbers of cars.”

At age 25 “my business now has six employees and is growing every day. I was voted by *The Signal* newspaper as ‘Best Body Shop in Santa Clarita’ two years in a row over major competitors and big chain shops. People are always surprised to come in here and see how young I am, but after they see my work, they’re impressed. I am a young owner and also very knowledgeable of the business.”

Customers, colleagues and vendors are confirming Shane’s assessment: Out of an international field of elite painters, he was chosen by 3M to participate in the 3M PPS World Cup to benefit its Hire Our Heroes program in support of returning U.S. military veterans.

“We all got flown out to Detroit to the Woodward Dream Cruise to paint our custom hoods with the new PPS 2.0 product,” Wanjon reports. “These hoods were auctioned off at SEMA to help out veterans. It was a blessing to be selected by 3M to help support our veterans coming home and looking for work. It was definitely rewarding to be part of it.”

Even the sign affixed to the business emphasizes his commitment to producing exquisite results and consistent



EXCLUSIVE IMAGE PAINT AND BODY
Santa Clarita, Calif. // www.exclusiveimagepaintandbody.com

Shane Wanjon
Owner

8
No. of bays

1
No. of shops

4 days
Average cycle time

5
Years in business

\$2,000
Average repair order

6
No. of employees

10
No. of customer vehicles per week

7,500
Total square footage of shop

\$750,000
Annual gross revenue

customer satisfaction. “I wanted something a little different than your typical body shop name like ‘Shane’s Collision Center’ or something of that nature. ‘Exclusive Image’ is a name that I felt would reflect the quality of work I provide, and that we are an exclusive body shop that stands out from the rest,” he says.

“Along with the majority of collision work that we do, we



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also get into custom painting of classic cars, high-end exotics and custom boat painting as well. I make more of a profit doing collision insurance repair," Wanjon explains. "The other stuff is just a labor of love to me, and it's what I enjoy doing."

The operation has no direct repair program (DRP) affiliations. "I choose not to be a DRP shop so that I don't get dictated to on what I can and cannot do by insurance companies. I don't want to be short-cutted or have to put on cheap parts." Aftermarket components are utilized only "if the customer asks for them, and as long as they're good quality."

Although OEM replacements are the preferred method and repair procedures must meet Wanjon's personal commitment to exacting standards, a high level of cordiality with insurance carriers is maintained. "I have great relationships with every company I deal with because of my cycle times and happy customers once everything is all said and done," he says.

"I don't try to gouge them on ridiculous prices and supplements. I bill for what is necessary to make the job correct, and at the end of the day it's always a very positive and happy time when dealing with adjusters and insurance companies."

A similar strategy is applied to suppliers. "I maintain positive relationships with parts and material vendors by staying loyal to them," he notes. "The way I see it, if I am loyal and honest with them I know I am going to be getting the same in return. Companies like 3M like that I use their products religiously in my shop, and they always take great care of me when I need it."

'Not just a number'

"I'd say our biggest strength in our shop is our customer relations. Since we are not a huge DRP-run shop, it gives me time to be very personable with the cus-

tomers and always be in contact with them. I have a very high rate of return customers, and a lot of times I end up becoming good friends with them."

At Exclusive Image, "You're not just a number like at some of the larger shops," says Wanjon. "There are about 20 shops in Santa Clarita, and a lot of the shops here are big. We try to be as friendly as possible to provide a more individualized and positive experience."

Customer satisfaction is further enhanced by staffing stability. "I've been very blessed to have the same employees for the past four years. I used to work with almost all of my employees when I was a painter and saw their quality of work," he says. "I knew they would be a perfect fit for my shop because they show interest and integrity with every repair that they do."

Maintaining a high professional profile within the area is an additional attraction to potential customers. "I am part of the Santa Clarita Valley Business Group, which is a category-protected group that is all about referring work to various small businesses in my city," says Wanjon. "I do a lot of charity work and try to give back to my community with events like our local school's speech competition that helps our local students with public speaking. I also have advertisements at various car washes and in magazines throughout my valley."

The valley is vast and fast-moving with lots of vehicles in need of repair. Santa Clarita is the fourth-largest city in sprawling Los Angeles County and the 24th-largest in all of California. The community's population of 182,000 is served by the Golden Gate Freeway (Interstate 5) and the Antelope Valley Freeway (State Route 14). The Six Flags Magic Mountain Amusement park is located just outside the city limits, and *Money* magazine has ranked Santa Clarita at No. 18 on its list of the Top 100 Places to Live in the

United States. The median household income is \$82,607, compared to the national figure of \$59,039.

Such LA-proximate yet separate "edge cities" are also known as "boomburbs." And key to this demographic density, affluence and associated demand for consumer services is that Santa Clarita consists of four previously rural, yet rapidly expanding, communities that have combined to form a single entity.

"My grandfather Eddie opened the first body shop in Santa Clarita many years ago. I have a long family history in the body shop industry," Wanjon elaborates. "My father, Gary Wanjon, learned from him and worked for him growing up and then opened his own shop as well. I learned how to paint on the side of my house when I was doing side jobs with my father."

Shane's dad subsequently sold his shop in favor of establishing Modern Paint and Body Supply — from which Shane routinely purchases materials for his own operation.

"Following in their footsteps, I learned from my father the ins and outs of the business," Wanjon recalls. "I started as a painter's helper at a body shop when I was 17 and was quickly promoted to lead painter at a major collision center. After working for about three years as a painter I wanted to take the next step and open my own business."

While mulling the possibility of opening a second shop in three or four years, Wanjon points out that "I'm the third generation in my family to own a body shop, and I only continue to grow by delivering a quality repair and being honest and upfront every step of the way: The business is in my blood." ■



JAMES E. GUYETTE

is a long-time contributing editor to *ABRN*, *Aftermarket Business World* and *Motor Age* magazines.
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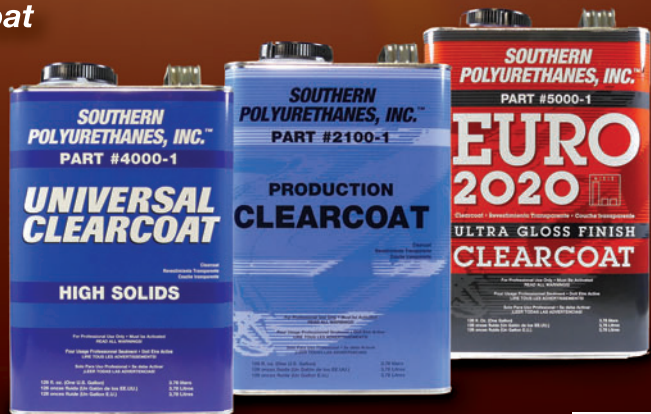
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Burn the bridge to show your commitment to change

DO NOT FOCUS ON EVERYTHING THAT COULD GO WRONG AS YOU MOVE FORWARD; BELIEVE IN WHERE YOU WANT TO GO AND DON'T LOOK BACK.

MIKE JONES // Contributing Editor

In 1519, Hernán Cortés, a Spanish conquistador, famously ordered burning the boats as his troops prepared for the seemingly impossible conquest of the Aztec Empire. He knew that having a Plan B would prevent his troops from having laser focus and an absolute commitment to the outcome they were moving toward.

When I decided to leave the Houston Police Helicopter Division 20 years ago and start Discover Leadership Training (DLT), I completely burned the bridge with HPD. Flying helicopters for the HPD was my childhood dream. When I decided to move on, I was more in love with flying helicopters than I was on the first day I stepped into the Helicopter Division. I was told during my exit interview that most police officers who leave the department before retirement almost always came back.

Despite my deep love for flying, I knew I had an even greater calling to serve society than working for the HPD. I created my vision for DLT and made a commitment to only move forward. I burned every bridge that led back to the police department.

Let me be clear: those first couple of years of forming Discover Leadership

Training from the ground up were tough; however, there was never a consideration of retreating.

Leaving the bridge intact in your professional and personal life might seem like a great strategy just in case things don't work out. However, if that is your attitude, you are demonstrating a lack of commitment to where you are going, a lack of belief that you will get there and a lack of confidence in yourself.

To not burn the bridge means you are focused on everything that could possibly go wrong as you move forward, taking steps in fear and apprehension.

Burning the bridge means you believe that success is imminent. It means that you realize that failure must be an option because when you take the risk of venturing out of your comfort zone, you will fall down a few times. Burning the bridge means you understand that falling down after taking a risk and going for what you want is a gift of authentication. You must realize that failure is not fatal. You may lose a few battles, but it does not mean you will lose the war.


My coaching to you would be to constantly move towards creating a better life for yourself personally or professionally. Most of you will not cross a bridge until there is some pain to run away from. Waiting until something is wrong or broken

versus focusing on your next level is running from pain, instead of running to gain.

I am encouraging you to find a bridge in your professional, academic, personal or financial situations and cross that bridge deliberately focused on a positive outcome. An outcome that improves your business or makes you a better team member or one that advances your knowledge and pushes you out of your comfort zone is an outcome worthy of burning bridges.

I encourage you to choose to cross a bridge that takes you to a more positive place in every one of your relationships. Here are my top five reasons why you should burn the bridge:

- The bridge will create a distraction that will lessen your chance of greater success
- You will move forward and create new possibilities
- You will hold nothing back in your relationships
- You will reinvent yourself to be a more positive person
- You will accomplish something you have never done before

What bridges will you burn today and how will you and those around you benefit from you doing so? 



MIKE JONES is the founder and president of Discover Leadership Training, a next-level leadership development solutions company in

Houston, Texas. He encourages others to create a better version of themselves by realizing their untapped potential.

mikej@discoverleadership.com

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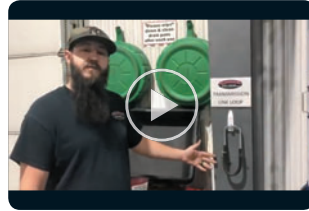


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MECHANICAL MOMENT

SERVICE REPAIR PROBLEMS AND SOLUTIONS THAT JUST MIGHT BENEFIT YOUR SHOP TECHNICIANS

JEEP EMISSIONS MONITORS KEEP RESETTING, ENGINE STALLS

VEHICLE: 2004 Jeep Wrangler, L6-4.0L, VIN S, Automatic Transmission

MILEAGE: 167,000

PROBLEM: The vehicle was brought to the shop because the emissions monitors kept resetting and the engine intermittently stalled.

DETAILS: Another shop had previously replaced the rear B1S2 O₂ sensor due to an O₂ sensor DTC. When it came in, there were no DTCs stored — active or pending. Initially, the tech checked all power and grounds to the PCM then checked the connectors at the CKP, CMP and the PCM. He also checked connections at the battery and alternator. The connections were all in good condition.

Next, the tech disconnected the rear B1S2 O₂ sensor and road-tested the vehicle. The engine did not stall. The Tech-Assist consultant advised that aftermarket O₂ sensors — especially on

Chrysler products — often do not work correctly and can cause problems.

CONFIRMED REPAIR: The tech replaced the aftermarket B1S2 O₂ sensor with an OEM sensor. After replacing the sensor, the monitors operated normally and the engine stopped stalling — problem fixed!

This tech tip and others come from ALLDATA Tech-Assist, a diagnostic hotline of ASE-Certified Master Technicians. Whatever technicians need — from creating alternative diagnostic strategies to providing step-by-step repair assistance — the Tech-Assist Team can deliver.

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AUGUST 7-8

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Georgia World Congress Center

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AUGUST 8-10

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PLASTIC REPAIR OPTIONS FOR TODAY'S VEHICLES

A REPAIR MAY BE MADE ON OR OFF THE VEHICLE, even on a vertical surface. The patch design and shape may vary, but the important detail is to ensure ample fiberglass is embedded in the adhesive.

WITH COMPOSITE USE IN VEHICLE CONSTRUCTION ON THE RISE, HERE'S WHAT TECHNICIANS NEED TO KNOW ABOUT NEW REPAIR OPTIONS AND HOW TO DO THEM RIGHT

TINA GRADY BARBACCIA //

Contributing Editor

Editor's Note: This is the second part of a two-part series on understanding plastic and composite repair with adhesives. See Part One in ABRN's May 2018 issue to learn how to make successful plastic repairs with adhesives, plus why shop management should carefully consider the cost of equipment and necessary training before investing in the next "cool tool" for the shop.

As automakers are expanding their use of composite plastics, such as carbon fiber, fiberglass and sheet-molded compound (SMC), in vehicle construction, there is also the need for body technicians to understand repair options and how to do them properly.

Tighter government regulations on emissions are driving demand for automakers to use carbon fiber to build high-strength, lighter-weight vehicles that can meet U.S. Corporate Average Fuel Econ-

omy (CAFÉ) standards and European Union (EU) carbon dioxide gas emissions requirements. There is also a rising demand for carbon fiber-reinforced plastics (CFRP) in luxury cars, race cars and other high-performance cars.

"Vehicles' structures have regularly changed, but it didn't become overly significant to the collision repair industry until about the 1990s," points out Kevin Creegan, Sales Manager for LORD Fusor Aftermarket Repair Adhesives in the U.S. and Canada. "This is when col-



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lision repairers began to deal with repairing vehicles built with unique structural elements and different materials such as high-strength steel (HSS), ultra-high-strength steel (UHSS), composites and other mixed materials.”

Carbon fiber in the global automotive composites market is forecasted to grow at a compound annual growth rate (CAGR)

— a measure of growth throughout multiple time periods — of 10.4 percent from 2016 to 2021, says global research company Lucintel in its March 2017 report, “Growth Opportunities for Carbon Fiber in the Global Automotive Composites Market.”

With the growth of light weighting, many of the major vehicle manufacturers, including BMW, Mercedes, Toyota, FCA, Ford and General Motors (GM), have put focus on incorporating carbon fiber into mass production vehicles. Recent news reports indicate that the next generation of General Motors pickups will be made mixed material, with a high-strength steel cab safety cage and aluminum doors. Higher-end versions of the GMC Sierra and Chevrolet Silverado trucks may feature carbon fiber.



KEVIN CREEGAN

Creating a high-strength bond

This growing use of composites by original equipment manufacturers (OEMs) also means both seasoned and new technicians will need to receive training to understand proper repair methods — and options — for structural and cosmetic repairs.

When vehicles manufactured with composites were first introduced, the mindset was typically to replace the parts, Creegan says, as the repair capability wasn't yet developed. Initial attempts with resins and fiberglass matting would either completely fail or read through was common. Technicians would replace large component pieces to deal with small, locally damaged areas. “This just isn't efficient and is too costly, especially for high-volume vehicles,” Creegan points out. “It's easier to fix a small, damaged area on panels and hoods than replacing the whole part.”

Now, repair adhesives specifically formulated for composites are providing technicians with an economical, alternative solution to simply replacing these parts or using welds and rivets. The introduction of new products and procedures is now allowing for robust repair.

“The bond created when using repair adhesives on composite substrates is as strong — if not stronger — than rivets and welds,” Creegan points out. “Using repair adhesives also offers advantages such as lightweighting, bonding dissimilar materials, aesthetics and reducing noise vibration and harshness (NVH).”

Although the process for using repair adhesives is pretty straightforward, technicians need to first determine the type of repair needed — structural or cosmetic — before proceeding.



WORK AS MUCH FIBERGLASS CLOTH INTO THE REPAIR as possible while attaining a thickness similar to the original panel to control expansion and contraction in hot and cold weather. This will control visible “bullseyes” and “read through” in the finished repair.



THE REINFORCING PATCH ON THE BACK SIDE of the repair can be made with either a matching piece of composite material or formed from fiberglass cloth.

“A structural repair is when there is any kind of cracking of the plastic, fine ‘spider webbing’ cracks, or a hole,” Creegan explains. “Anything disruptive to the composite behind the actual surface requires a true repair. A cosmetic repair is just an extension of the structural repair process such as a scratch, gouge or damage that doesn't get into the fiber of the substrate or fiber vest.”

Repaired part performance is always a concern, especially in situations in which the mechanical integrity of a part depends upon the continuity of the varied layers and orientation of the “cloth” in the part. Structural components such as a pillar, as compared with simple bolt or bond-on parts such as fenders or even roof panels (which are more of a cosmetic treatment), require a far different method of damage identification and repair that is beyond the scope of this article.

However, it should be noted that these types of repairs include replacing multiple layers of “pre-preg” material (pre-impregnated with the adhesive or resin and generally shipped on dry ice to retain their “freshness,” as they have a very short life from manufacture to end use), orientating those layers in a precise fashion. Then, heat is used to cure the materials, while also holding all under a vacuum. This intricate process is why companies such as Lamborghini hire Boeing-trained composite



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SAND TO SHAPE THE SURFACE so it will mate with the panel being repaired. Make sure that the composite panel has been sanded wherever adhesive will be applied in the repair area.



AFTER APPLYING SEVERAL LAYERS of heavily saturated repair cloth, carefully roll them to eliminate any air pockets and apply heat to set and harden the repair.

repair specialists to make repairs on their structural assemblies. Standard composite parts made from SMC and similar “plastics” are produced with chopped fibers in the mix, not oriented layers as would be seen in a structural component. Some “hang-on” carbon fiber panels do use oriented weave material, but it is primarily to better function in the molding process and strengthen key mounting locations instead of the load-carrying qualities of true structural assemblies.

Breaking down the repair process

If a composite has been compromised, back-up reinforcement is needed. This can be accomplished by applying an initial patch to the damaged area and grinding out any broken material or fabricating a missing piece.

“You are essentially making a patch over a hole,” explains Douglas Craig, Technical Application Engineer & Collision Industry Liaison, Structural



DOUGLAS CRAIG

Adhesives Tech Service, LORD Corporation. “A pyramid patch may be used to fill in the hole. You’re still pyramiding, but also have any

A CHEAT SHEET TO COMPOSITE REPAIRS WITH ADHESIVES

There are two types of damage:

Cosmetic damage:

- Minor damage on Class A side only
- Only in the resin-rich outer surface
- Not entering fiber-rich body of plastic (scratches/gouges)

Structural damage:

- Any damage that penetrates into the fiber-rich body
- Key elements (cosmetic):
- Proper taper
- Choose proper adhesive
- Cure adhesive fully
- Finish sand and feather edge

Key elements/steps for a successful repair (structural):

- Reinforcement on back side is required

- Proper taper on front side is required
- Pyramid patch on front side — A pyramid patch is comprised of adhesive and fiberglass cloth and duplicates the fiber-rich center of composites; repair area expands and contracts similarly to composites
- The use of fiberglass cloth in the pyramid patch reduces read through
- Proper adhesive
- Saturation roller
- Heat cure

Proper procedures = No read through

(Source: Fusor 003 Composite Repair Clinic)

one edge of the repair that is missing.”

The most important points to remember when developing a patch is to use multiple layers of fiberglass repair cloth and saturate it with the plastic panel repair adhesive. The use of fiberglass cloth is critical to controlling the expansion and contraction in hot and cold weather. Using a repair adhesive with low viscosity is desirable because it can be difficult

to saturate a cloth with thicker materials.

“The key is getting in as much cloth as possible and really saturating it,” Craig says. “It may seem like only one or two pieces are needed, but it becomes thin when you start stacking it. The more fiberglass you get there while attaining a thickness similar to the original panel, the better the repair will be.”

Everything then must be carefully



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CAUSES OF READ THROUGH IN COMPOSITE REPAIRS

- Sharp edges = Stress concentration
- Taper to eliminate sharp edges and stress concentration
- Temperature changes
- Expansion/contraction increases stress
- Lack of full heat cure
- Proper heat cure of adhesive eliminates shrinkage after painting
- Lack of fiberglass cloth in repair
- Fiberglass cloth needed so repair acts like sheet-molded compound

rolled together to eliminate any air and sharp edges. This will eliminate a “halo effect” or “read through” at the edges of the repair. It also provides strength so the patch is as robust as the panel, providing a high-quality finished repair with maximum strength characteristics. Leaving air pockets also may cause future layers to pop or result in paint issues, Craig warns.

Curing for a proper repair

After ensuring several layers of heavily saturated repair cloth have been applied and carefully rolled to eliminate any air pockets, heat can be applied to set and harden the repair.

“Extra layers [of repair cloth] may be added, if needed,” Craig notes. “When the technician is happy with the overall fill of the repair — the patch has been built up to the proper level — a full heat cure

needs to be done at 180 degrees F for 60 minutes using a heat lamp.”

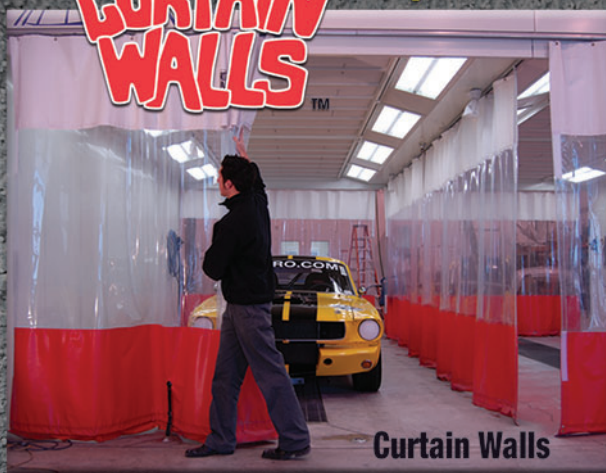
He stresses that the 60-minute cure time begins when the surface reaches 180 degrees F, not when the heat is first applied. Craig likens it to putting unbaked cookies in an oven, turning it on and counting the time toward the bake time needed for the cookies to turn out as expected.

“You have to wait until the panel reaches the right temperature before starting time,” he quips. “The heat causes a chemical reaction in epoxy. At the end of the 60 minutes, we are doing what may have taken a longer period of time, but it has to be done from the proper temperature and for the right amount of time to turn out well — just like baking cookies.”

This step ensures the epoxy has been completely cured and makes the repair undetectable in the future. “If you skip

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the full heat cure, the repair may 'halo' in the future," Craig cautions. "It will cure on its own, but we know the repair is done and will never show through by curing at this temperature for this amount of time."

When OEMs call with problems from repairs done in the assembly plant, Craig reminds them of the time and temperature that must be used to ensure a full cure.

"I ask them to check their repair line when we get a phone call," he says. "We've often found that someone is applying heat and just walking away. If you do the repair right — this means using the proper time to fully cure it — you'll never see it. If you don't adhere to it, you will see the repair later on because it has been done incorrectly."

Once the structural repairs have been completed, technicians should be at the

point where a cosmetic top coat just needs to be added. They can switch from a heat-set plastic panel repair adhesive to plastic finishing adhesives. After putting on the final glaze, it's ready for primer and paint.

Adapting to the repair

In addition to following proper procedures, creativity and artistic skills also come into play when making repairs. "You have to adapt to the repair," Creegan remarks. "Although the basic technique used is identical, each repair is different."

One such example is a vehicle with a 6-inch crack that shoots off to the left or right. Two separate patches would be needed for this repair, but the cloth has to be crisscrossed. "There will be a weak spot if you try to abut them," Creegan adds.

The part of the vehicle and size of

COMPOSITE PLASTIC SUBSTRATES

Composite plastics include the following:

- Fiberglass
- Sheet-molded compound
- Carbon fiber
- Fiberglass-reinforced plastics (FRP)
- Metton LMR (liquid-molding resin)
- GTX nylon blend
- Resin transfer molding

patch needed also factor into the repair approach. Structural damage to a fender requires a reinforcement — a.k.a. "backer" — patch to be created first before the pyramid patch can be built.

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"A backer patch is nothing more than fiberglass cloth and a product such as Fusor 100 EZ or a piece of fiberglass or comparable substrate, such as an existing piece of the fender material, but is important to the repair," Creegan says. "It also needs to be the same shape as the repair area."

Technicians also need to be adaptable as to whether a patch is created on or off a vehicle. In the case of a fender, the patch will need to be built directly on the vehicle if the fender is not removed for the repair.

"Sometimes you will work on the vehicle and sometimes you'll work off of it," points out Julie Shepherd, Global Business Manager for Aftermarket, LORD Corporation. "You may need to build the patch smallest to largest or largest to smallest."

The size and shape of the repair will dictate whether the repair is made on the vehicle or off, Shepherd notes. A patch can usually be built up and then laid over any repair the size of a hardball or smaller, while anything larger may need the patch to be built on the vehicle.

"Small repairs are easier to build off the vehicle using the pyramid patch method," she says, "while bigger patches are easier to build on the vehicle so the fiberglass cloth can be layered and placed where necessary. The main point is that technicians need to adapt to what is called for with the repair."



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Heat-cured adhesives to advance vehicle repair


Although many technicians historically have been wary of repairing composite panels because of read through and other issues with making repairs, adhesives designed specifically for composites are making repair jobs more efficient and providing more options for body shops and technicians.

"Historically, technicians have had problems with making composite repairs, such as not getting enough fiberglass material built into the repair or the adhesive shrunk after the repair was complete," Craig says. "Some technicians have used polyester-based body filler without a cloth, but it's not as hard so it doesn't even begin to duplicate the base material. It may seem more complicated and messy to use a fiberglass product, but it never comes back to haunt you."

Employing repair methods such as a wet layup can make a repair too rigid. When resin and adhesive are mixed in a can, it may be difficult to ensure it's done properly and consistently.

To that end, an adhesive heat-set formula for structural repairs that is automatically mixed when dispensed from a cartridge eliminates these types of problem.

"When the final heat cure has been done, the repair is not going to change a little bit during the new few hours or days," Craig maintains. "It will never change. It will never move. You will never see it. It's just done."

To learn more about repair adhesives and to sign up for training, visit www.fusor.com and www.i-car.com. Go to <https://youtu.be/vzAKI5WxJWw> for a step-by-step video of how to perform a composite structural repair using repair adhesives. 



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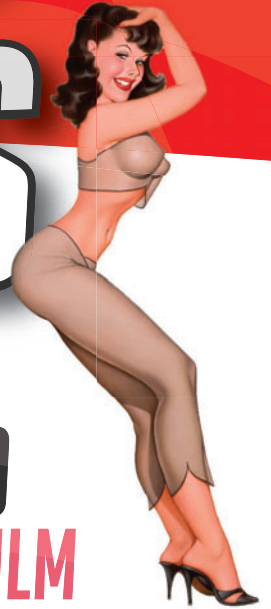


TINA GRADY BARBACCIA is a writer for Advancing Organizational Excellence (AOE). She has written and served as an editor for trade publications, blogs and developed social media and public relations for multiple industries since 1998 and is a former editor for *ABRN*. info@theoeteam.com

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GAME CHANGERS

THE LATEST REFINISH PRODUCTS THAT COULD BE BUMPING UP YOUR REVENUES

TIM SRAMCIK // Contributing Editor

So what's new in your paint department these days? If the answer is "not much," you really should consider giving your distributor a call. Paint companies put in considerable effort both updating their current line of offerings and brining new products to market, all in an effort to make your shop more profitable. One could argue their entire business model is built squarely on making you more successful. The more vehicles you repair, the more products they sell.

If you aren't working closely with your vendor, odds are you're missing out on quite a bit. Here are just a few

of the products you might want to consider for your operation, if you aren't using them already.

Axalta

Still working with solvent-based finishes because you haven't found an easy path moving to waterbornes? Axalta says Cromax EZ, a new waterborne basecoat for North America Refinish, is designed for shops wanting a seamless transition from to water-based ones coatings.

Axalta says the smooth transition comes in large part thanks to the product's familiar and simple application process. "Cromax EZ provides the familiar wet-on-dry application that most painters have already mastered, so no special

application and blending training is required," says Harry Christman, Axalta's Cromax Brand Manager.

Adding to the ease, Christman says Cromax EZ toners don't require agitation, eliminating the need for a conventional mixing machine. Cromax EZ also features a single reducer and same mix ratio across all color formula types (solid, effect and tri-coat) and environmental conditions, so mixing mistakes can be a thing of the past.

Color matching is similarly designed to be simple and easy. Cromax EZ utilizes an intuitive fan deck with more than 5,500-piece chip sets sorted chromatically for at-a-glance color verification. Easy-to-use tinting charts help deliver speedy access to information so painters

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can adjust colors with confidence.

Cromax EZ also integrates with the Acquire Quantum EFX Spectrophotometer, Axalta's digital color-matching system and its web-based color retrieval and on-screen matching system, ColorNet, to find the right color formula.

Once the right formula is produced, Christman says Cromax EZ provides more benefits: superior coverage and no added wait time before applying clear coat, leading to "lower paint consumption and outstanding cycle times, which is always helpful to a shop's bottom line."

AkzoNobel

Ease and speed also mark new products from AkzoNobel's expanded Sikkens and Lesonal portfolios. Erica Clayton, Product Manager for Automotive & Specialty Coatings, calls special attention to three: Sikkens Autoclear Mix&Matt, Lesonal Multi Matt Clearcoat and Sikkens Autosurfacers UV with supporting TeslaCure UVA LED Lamp. Each is engineered to boost profitability and reflect current industry trends.

Clayton says Sikkens Autoclear Mix&Matt and Lesonal Multi Matt Clearcoat is a response to ongoing customer requests for matt finishes. By mixing low gloss and semi-gloss components, she says both products can provide "any desired gloss level." They're also designed to be easy to prepare and spray at all temperature ranges (and repair sizes), while providing an even, cloudiness-free appearance and a smooth, hard finish, without gloss increase over time.

Want to perform small repairs fast? Sikkens Autosurfacers UV is a one-component, isocyanate-free UV curable filler that promises to do just that. Curing by UV light takes five minutes, giving customers the opportunity to drastically reduce their prep times. A medium spot repair cures in 60 seconds and can be sanded immediately after.

Clayton says time isn't the only savings. Autosurfacers UV is a 1K product, making it easy to use so there's fewer mix-

ing errors and less waste. It also doesn't require a wash primer on steel surfaces, can be applied directly to metal and is suitable for critical substrates since it doesn't have shrinking issues and isn't sensitive to contour mapping.

Additionally, Clayton notes that Autosurfacers UV reduces paint usage per repair up to 50 percent when compared to conventional primers, further cutting material costs.

BASF

BASF offers its own version of a UV primer, the new Glasurit 151-170 UV. It's also a one-component primer, so there's no mixing or pot life limit and can be cured either in the sun or by UV lights. Gordon Erdelean, Product Manager for BASF Coatings Solutions North America, says standard UV lights cut cure times to 3-5 minutes. With a company-approved FTDI light, which can be purchased through BASF, the primer will cure instantaneously.

Erdelean says the investment in the specialized light quickly pays for itself considering the dramatic savings in energy and other resources versus a regular urethane primer. He says studies show reductions in energy costs up to 75 percent, labor up to 60 percent and materials to 65 percent.

Joining the primer are direct-to-plastic sealers that include adhesion promoters. Glasurit 934-71 and 934-72 offer repairers black and white (respectively) sealer solutions that Erdelean says can be mixed together to produce the correct L shade for an accurate color match. With no additional adhesion promoter needed, the sealers can save time, materials and labor. Erdelean also praises product versatility, since both sealers can be applied over properly sanded e-coats and says the sealer/adhesion promoter combination is unique in the industry.

Rounding out BASF's latest solutions is RMC2000, a clearcoat designed to provide a high-gloss finish quickly. "Usually



PHOTO: SHERWIN-WILLIAMS AUTOMOTIVE FINISHES

INTRODUCED LAST FALL, Sherwin-Williams Matrix C2C Coast 2 Coast Intermix Color System is engineered as a low-VOC, solvent-based product that can be used anywhere in U.S. and Canadian markets.

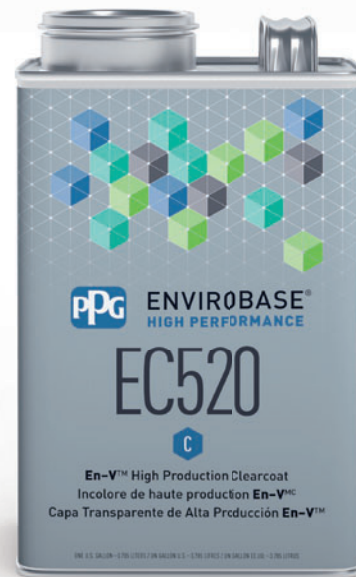


PHOTO: PPG

PPG'S EC250 EN-V is a new "speed" clear coat, featuring a bake time of 15 minutes at 140 degrees Fahrenheit, or 20 minutes at an energy-saving temperature of 120 degrees Fahrenheit.

you don't get speed and good looks in one product," says Erdelean, who notes that RMC2000 dries in "just 45 minutes" and is ideal for "production-oriented shops."

PPG

Launched in Fall 2017, PPG's EC520 En-V is the new "speed" clear for its ENVIROBASE High Performance basecoat sys-

tem. Engineered for “cycle-time minded collision centers,” EC520 features a bake time of 15 minutes at 140 degrees Fahrenheit, or 20 minutes at an energy-saving temperature of 120 degrees Fahrenheit.

PPG says EC520 joins two other clearcoats in the En-V series, EC530 En-V Performance Clearcoat and EC550 En-V Ultra Gloss Clearcoat, to give shops choices for every type of refinish job — from spot repairs to overalls, in cool, warm or hot, humid conditions.

Launched in February 2018, the company’s Vibrance Collection Murano Pearls are a line of pigments designed to create unique color-shifting effects that range from subtle to brilliant, depending on what the painter desires. Available in four colors, the pigments can be added directly to basecoat, ground coat or mid-coat.

The Murano Pearls draw inspiration from the original Murano pigments introduced in Europe in the early 1960s. They can be intermixed with any PPG refinish basecoat including Deltron, Global Refinish System, Envirobase High Performance and Aquabase Plus. They also can be used with all other Vibrance Collection custom finishes to give shops as many custom paint options as possible.

Sherwin-Williams Automotive Refinishes

Sherwin-Williams has been expanding its coast-to-coast compliant system for the Matrix Automotive Finishes brand. Last fall it introduced the Matrix C2C Coast 2 Coast Intermix Color System, which features three basecoats and 61 toners including dry pearls and custom colors. Senior Marketing Communications Manager Kim Wilson says all of these items meet VOC standards in both the U.S. and Canada.

“Shops are compliant no matter the market,” she says. “The solvent-based Matrix C2C Coast 2 Coast Intermix Color System is compact too, to keep the initial buy-in low and inventory tight, helping shops keep costs down and in check.”



PHOTO: AXALTA

AXALTA'S CROMAX EZ PROMISES SHOPS a smooth transition to waterborne finishes with a familiar application process, blending that requires no additional training, and easy-to-use color matching features.

Wilson notes Matrix coast-to-coast compliant single-stage toners will be rolled out at SEMA 2018, so stay tuned.

Sherwin-Williams also recently launched CC200 Dynamic Clearcoat, which Global Product Manager Damir Banusic says created a new category of clearcoats — the speed, glamour finish.

“Clearcoats are categorized in the market as either “speed” or “glamour” products. Speed clearcoats dry very quickly and are optimized for smaller repairs,” says Banusic. “Glamour clearcoats, in contrast, have outstanding appearance but require longer time and/or high temperature bake slowing down production and increasing energy usage.”

CC200 combines the two features, in part, by offering “significantly” shorter bake times at lower temperatures. Reduced dry times reduce energy usage and can help increase daily throughput with no compromises on appearance (so shops can do more work at less cost). Banusic says the clearcoat is ideal for the majority of collision repair work, “across a wide range of environments, repair sizes and skill sets.” Further, thanks to its glamour finish, Dynamic Clearcoat reduces final detail times, cutting shop overhead

and labor since buffing isn’t necessary.

Get in the game now

Sound too good to be true? Maybe you don’t believe you have the time to examine new products and integrate them into your operations.

Change is never easy, even when you’re working within the product offerings of a trusted vendor. But your vendors know this as well. As you consider the new products mentioned here, note how many are engineered to require little or no extra training and demand only a small investment, if any. Your operation really isn’t gambling much by diving in, especially considering the benefits you and your customers could be realizing in terms of speed, efficiency, quality and innovation (along with boosted revenues for you).

Think of it as banking on your future — with folks you do business with everyday who are counting on your doors being open tomorrow and well beyond. 📞



TIM SRAMCIK has written for *ABRN* and sister publications *Motor Age* and *Aftermarket Business World* for more than a decade. tsramcik@yahoo.com

COLLISION PRODUCT GUIDE

GLASURIT ADPROS

Glasurit 934-71 and 943-72 Black and White AdPros offer a flexible adhesion promoter and sealer in one, saving a step in the repair process. Designed to be used on rigid and all paintable plastics, along with other substrates, these Glasurit AdPros offer great flow and leveling. Adhesion to unsanded e-coats is unmatched and creates better-than-ever matching in conjunction with BASF L-shades for improved hiding. BASFREFINISH.COM/GLASURIT



SATAJET 1500 B SOLV

The SATAjet 1500 SolV is designed for full system applications: solvent-based basecoats, either Low VOC or National Rule as well as spraying sealer and clearcoat. Available in both HVLP and RP, the RP version is now approved for SCAQMD and EPA. Offering 1.3 and 1.4 long life stainless nozzle sizes, the nozzle system meets the demands for topcoat applications and delivers even material distribution throughout the entire spray pattern. The air pressure ranges from 7-29 psi, which allows for a fast working speed. SATAUSA.COM



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R-M CLEARCOATS

RMC 2000 LVOC High Solids Clear and RMC 2400 Low VOC Brilliant Clear are the latest in low VOC clearcoat technology. These new clearcoats were developed with the intent of sustainable and consistent performance in any temperature or humidity level, offering easy application and great leveling and flow. Both RMC 2000 and RMC 2400 create a finish with high gloss levels and a deep wet look, providing optimal shine. BASFREFINISH.COM/RM



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DeBeer Refinish® WaterBase 900+ Series is OEM approved, delivering on color and coverage with rich, high-opacity hues for all solid, metallic, xirallic and pearl colors. Easy-to-use with 25 percent less mixing colors, the DeBeer Refinish waterborne system is complete with must-have primers, clearcoats and ancillaries; shops have everything needed to drive efficiencies — impacting inventory and overhead, productivity and profit. Supported by global color software and a spectrophotometer, this series achieves the highest degree of color precision resulting in a superior finish. DE-BEER.COM



CC200 DYNAMIC CLEARCOAT BY SHERWIN-WILLIAMS

From Sherwin-Williams® Automotive Finishes comes a clearcoat that combines speed and glamour — CC200 Dynamic Clearcoat. CC200 surpasses the competition delivering a superior appearance in half the amount of time when compared to a traditional clearcoat without sacrificing productivity. CC200 is designed for any painter, application and repair environment with a quick turnaround time and low-temp bake cycle improving shop productivity and profit. CC200 Dynamic Clearcoat meets National Rule VOC regulations. SHERWIN-AUTOMOTIVE.COM



C2C COAST 2 COAST INTERMIX COLOR SYSTEM

Not only is the Matrix C2C Coast 2 Coast Intermix system VOC compliant no matter where a shop is located in the U.S. and Canada, it's compact and simple to use. Matrix C2C is equipped with three performance quality basecoats – good, better and best options – giving the shop the flexibility to choose the best one for the job. In toners, this mix bank is complete with 61 liquids including 35 in half quart cans and 25 dry pearls to increase toner turns and reduce overall carrying costs. MATRIXSYSTEM.COM



COLLISION PRODUCT GUIDE

PPG DELTRON DBC

As PPG's best-selling, solvent-based refinish system, DELTRON® DBC basecoat offers broad appeal to users of all types, from custom painters to production collision centers focused on cycle time performance. Well-known for its user friendliness, the system features a wide selection of the latest undercoat and clearcoat technologies, giving users the ability to tailor a system to specific production requirements and operating conditions.

US.PPGREFINISH.COM



SIKKENS AUTOCLEAR PERFORMANCE LV

Autoclear Performance LV from Sikkens is now available for all application condition and repair sizes. Designed for superior performance when used over Autowave and Autobase Plus, Autoclear Performance LV is a 2.1 lb/gal, two component clearcoat. The Autoclear Performance LV provides a high-gloss clearcoat that covers all repair sizes. It can be used in any application condition.

SIKKENSVR.COM



ULTRA 7000 BY SHERWIN-WILLIAMS

The Ultra 7000® Refinish System from Sherwin-Williams® Automotive Finishes is a productive, efficient and consistent system. With repeatable performance, efficient processes and products that can assist in decreasing cycle times, Ultra 7000® by Sherwin-Williams Automotive Finishes is the most productive refinish coatings system on the market. All of these features plus the promise of continued investment is the reason it is preferred by industry leading collision repair facilities across the U.S. and Canada.

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3M™ PPS, the first disposable paint cup system, revolutionized painting. Shops worldwide trust 3M™ PPS™ to work consistently, make their job cleaner, faster, and more efficient. Now, 3M has improved the system with six key improvements from connection to cup. Learn about the evolution of this revolution at our website below.

3MCOLLISION.COM/PPS



PPG EC520 SPEED CLEAR

EC520 EN-V® High Production Clearcoat is PPG's new fast bake clear, ideal for production collision shops seeking to improve cycle time performance in the paint booth. Developed for use over ENVIROBASE® High Performance basecoat, this "speed" clear can be force dried in as little as 15 minutes at 140°F or 20 minutes at an energy-saving temperature of 120°F.

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WANDA 8200 2K SPOT AND PANEL CLEAR

Wanda 8200 2K Spot and Panel Clear is your choice for a cycle-time reduction acrylic urethane clearcoat. For use over Wandabase, 8200 2K Spot and Panel Clear offers high-gloss and is designed for air and baking conditions. Because it is designed to be sprayed over spot, panel and multi-panel areas in a wide variety of environments, 8200 2K Spot and Panel Clear offers speed and helps increase throughput.

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COLLISION PRODUCT GUIDE

CROMAX® EZ

Shops are seeing amazing results from Cromax® EZ, the latest waterborne basecoat from Axalta Coating Systems. Not only is it easy to mix, match and apply—Cromax EZ requires less material to achieve coverage, in less time than competitive waterborne systems. Hear about the quality waterborne finish of Cromax EZ directly from shops that made the switch.

AXALTA.US/EZ



FIXSTATION

Symach's FixStation with a Flydry robot works as both a spray booth and workstation. The fully-equipped workstation allows a technician to remove and install the parts, pull dents, apply body filler, spray primer and spray and dry both waterborne and solvent basecoat and clearcoat. It includes a Flydry robot, a paint mixing room, a vacuum sanding system and a Multibox with plugs and retractable air and electric.

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BRINGING TWO VEHICLES BACK TO CONSCIOUSNESS AFTER AN ACCIDENT

JOHN ANELLO // Contributing Editor

I was recently called to two different shops working on vehicles that would not start after being involved in accidents. It is not uncommon for this to happen, especially if there has been damage to wiring harnesses or possible blown fuses that would render certain operating systems that are vital to cranking or starting a vehicle inoperative. There are a lot of manufacturers that put engine control modules in harm's way up front in the engine compartment near the radiator or even tuck them in a wheel well. But this was not the case in either of these two vehicles.

The vehicles in question were a 2016 Jeep Renegade that was hit in the rear with tailgate damage (Figure 1) and a 2017 Mercedes GLC 300 that was hit in the front and had minor front-end damage (Figure 2). There didn't appear to be enough damage to prevent either vehicle from starting. There are many times where certain things must be disconnected in order to properly work on the vehicle, but I always make sure I do a full visual inspection just to see that everything is in order. After my visual inspection, I could see that all of the main harness connections and components were restored to their proper fit and there were no signs of wire damage. There were also no warning messages or icons on the instrument panels that would alert me that something was preventing these vehicles from starting.

I performed a full vehicle scan on each car, checking all control modules



on board. This is a vital step to do prior to working on a vehicle so you can get a full evaluation of underlying problems with the vehicle that cannot be determined by a visual inspection. Sometimes there may be codes stored in memory that were not accident-related and were simply caused during the repair procedures to the vehicle. It is equally important to view and document all the codes. Your next step is to clear out the entire vehicle and see what codes return as "Current Codes." I did find many trouble codes pertaining to wiring

and component failures from both vehicles, but the codes that did remain after clearing these had nothing to do with preventing the vehicles from starting.

Manufacturers today have found a way to prevent you from starting a vehicle after an accident in order to protect the driver from causing further damage to the vehicle or themselves. This is a safety feature in the event that there is fuel leakage or a short circuit in wiring that could lead to a fire in the vehicle. This method of shutdown puts the ve-

hicle in an “Automotive Coma” state so that you won’t be able to leave the scene of the accident even if you’re able to walk away from the vehicle. Let’s take a close look at each scenario.

The 2016 Jeep Renegade was able to crank but would not start up, and the four-way flashers were on all the time. This Jeep was equipped with a fire protection system that is initiated by the airbag control module if it senses a rear impact that could possibly cause fuel tank damage. Most of the vehicles today are equipped with sensors that can determine lateral, longitudinal and G-Force impact. This helps controllers on board to determine vehicle positioning as well as direction of impact. Since the controllers are all on a Buss Network (Figure 3), they share information among themselves and a message can be sent from the airbag control module to the body control module (BCM) if a rear collision is detected, and the BCM will in turn command the engine control module (ECM) to put the vehicle in fuel cut-off mode (Figure 4).

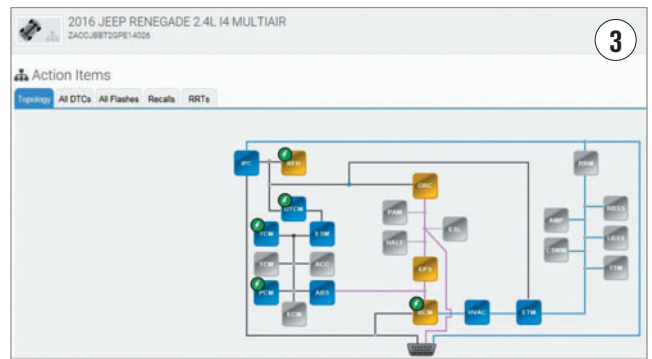
Once the fire protection system mode is commanded, the BCM will also activate the four-way flashers, unlock all the doors, turn on the interior lights and deactivate the climatic control ventilation. This is an added feature to get you out of the vehicle safely. One of the ways to deactivate this system would be with the use of a scan tool by accessing a bidirectional command (Figure 5) or simply by performing a manual procedure using the signal switch lever.

The manual procedure involves placing the signal switch lever in neutral position with key off. You turn the key on, apply right turn signal, apply left turn signal, apply right turn signal on again, apply the left signal on again, place signal switch back in neutral position, turn ignition off and turn the hazard switch off. Once this is done the vehicle will start right up. You need to keep in mind that this should



ONLY be done by an automotive professional after the vehicle has been fully inspected for safe operation. So now it makes a lot of sense why the four-way flashers were on all the time with the ignition on. This was to alert you that the fire protection system was activated.

The 2017 Mercedes GLC 300, on the other hand, did not have the ability to crank at all and the starter was inoperative. This could be very confusing because if the battery is low on most new Mercedes vehicles, the ECM will activate the Voltage Dip Limiter under the hood



(Figure 6) and open the battery positive cable connector to prevent the onboard computers from experiencing a low-voltage surge that can cause many issues with individual controllers onboard. Mercedes does not want these controllers to lose vital information or stored learned procedures that can be corrupted from a very low voltage supply while cranking

External Temperature	64	°F
FPS (Fire Protection Strategy) status	Crash event	
FPS (Fire prevention sensor) - BCM (Body Control Module) status	Active	
Fail_Present	True	Bussed Outputs
Fail_Present	False	Bussed Outputs
Failed Counter	0	Counts Bussed Inputs

2016 JEEP RENEGADE 2.4L I4 MULTIAIR
ZACCJ8BT20PE14026

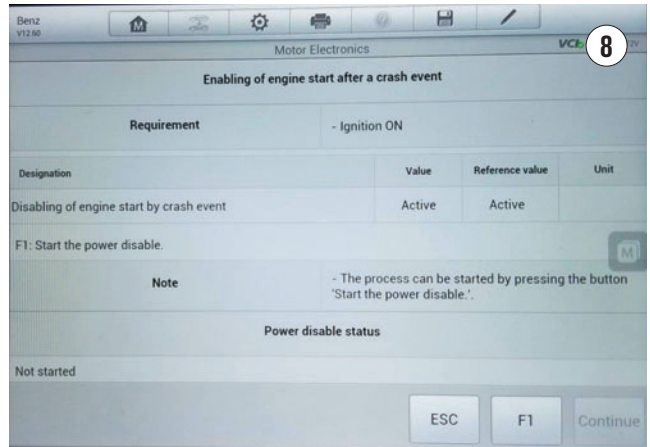
Fire Protection System Activate

This routine is for use when FPS sensor (Fire Protection System) was activated (if activated blocks the fuel flow). This procedure must be run to re-enable vehicle functionality.



an engine with a weak battery.

There could also be another issue where this vehicle may have a positive pyrotech cable (Figure 7) that could have deployed during an accident to remove full power to the vehicle to prevent severed wiring harness issues that may cause possible fires. There will be limited power with idiot lights coming



on during key-on operation, but the vehicle will not crank.

If the battery is up to par and the pyrotech cable was not deployed, then most likely the airbag control module sent a message on the vehicle buss line to the ECM to prevent starter operation. Unlike the Jeep, there is only one method to deactivate this safety mode and that is with the use of a scan tool. You would have to access the bidirectional procedure in the ECM (Figure 8). You will see that the starter operation is blocked by a crash event, and you would simply disable this safety mode by hitting the "F1" button on the scan tool.

Here again you must be sure that the vehicle is safe to start up prior to attempting to do so. I fully understand that during repairs, an individual working on the car wants to move the car around without pushing it. There is a reason why these shutdowns are in place, and it's always about safety and to prevent further damage to the vehicle. You don't want to start a vehicle with leaky hydraulic or fuel lines. So, again, it is up to ONLY an automotive professional after he or she has inspected the vehicle for safe operation.

So as you can see, there are many new systems coming to your shop that make you think there is a problem with a circuit without any warning signs to alert you. The vehicles of today are much more sophisticated, and you can no longer go by old-school tactics and what you used to know. There is now a need to learn all these new strategies as they come along. You will have no choice but to engage yourself with continuous education and invest in information systems to help you tackle these problems that you may have to deal with on a weekly or even daily basis. I hope this article has enhanced what you already know or don't know about these new safety features. 📡



JOHN ANELLO owns Auto Tech on Wheels in northern New Jersey, which is a mobile diagnostic service for 1,700 shops, providing technical assistance and remote programming. He is also a nationally known trainer.

atowscopeit@aol.com

COLLISION PRODUCT GUIDE

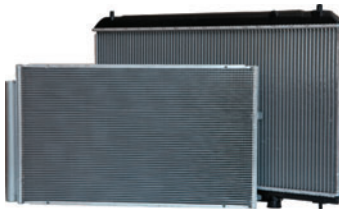
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The importance of giving, receiving helpful feedback

To grow and better your business, you need a culture that embraces feedback

When you properly give and receive feedback, you can create a dynamic that will produce a synergy that takes everyone, including your business, to a much higher level.

In a study discussed in the book *Thanks for the Feedback: The Science and Art of Receiving Feedback Well*, 63 percent of employees surveyed say the biggest challenge for effective performance management is that their manager lacks the courage and ability to have difficult conversations. Yet, 90 percent of managers rank themselves in the top 10 percent of managers. The key to personal or professional growth is honest, helpful feedback.

It is the timely, honest, helpful feedback that is critical to our business. There are three types of feedback we give: Appreciation, Coaching and Evaluation.

The first type of feedback we should be giving is appreciation. Most people want to know that what they do matters and that they are appreciated. Vague appreciation does not translate into encouragement. When we give typical feedback, we are pointing out all the detailed items that are not done right; yet, when showing appreciation, we think “good job” should suffice. Appreciation should be given in a manner that the receiver values. Everyone has a different language. Some value words of affirmation while others see a bonus in their paycheck as a demonstration of appreciation. Get to know your team members, learn how they receive appreciation and watch performance grow.

The next type of feedback is coaching. Appreciation should always precede coaching. No one ever receives feedback well from someone they do not like or trust. There must be a foundation to coach effectively. Coaching is a lot more than simply giving data to someone. For example, one thing that is important to our business is 100 percent disassembly in the repair planning phase. For us to achieve this, we must coach our team effectively. An ineffective form of coaching on this would be for me to simply go to our repair planners and disassembly technicians and give them data on how they have failed to produce 100 percent disassembly and show them all the delays it has caused. A better form of coaching includes consistent reviews of disassembled



IT IS THE TIMELY, HONEST, HELPFUL FEEDBACK THAT IS CRITICAL TO OUR BUSINESS.

vehicles and estimates, then providing one to two coaching points each week to our repair planning team on how to improve. When you revisit the next week, celebrate the improvements, no matter how small. It is important to point out the successes. The purpose of coaching is to help people grow, improve and become successful.

Another important factor in coaching is discussing impact versus intention. I do not believe there are people who intentionally do things wrong. Most people do not realize the impact of their mistakes, inactions or wrong decisions. It is important to communicate the impact and not assume wrong intentions. For example, if we do not do a complete disassembly of a vehicle during repair planning, there is a significant negative

impact on our customer (delays), our parts departments (additional ordering and posting invoices), our customer service team (chasing down supplements at the end of the repair), accounting department (reconciling additional invoices and statements), cash flow (delayed supplement payments) and on and on.

The last type of feedback is evaluation. Appreciation and coaching should always come before evaluation time. The purpose of an evaluation is to give feedback as to how the team member is performing within the organization and have open dialogue to ensure expectations are aligned. If you wait to coach until annual evaluation time, you are months too late. In addition, this should not be the first time a team member hears appreciation or how they are doing within the company. Great organizations create a culture of healthy feedback.

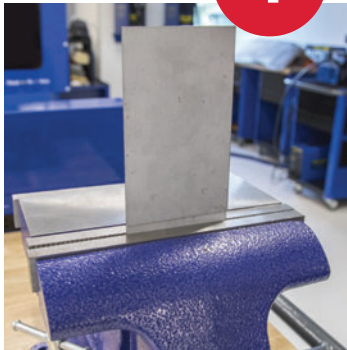
Leaders should also be willing and receptive to receive feedback from team members. Andy Stanley said, “Leaders who do not listen to others will eventually surround themselves with people who do not have anything to say.” The best feedback is about what we do, not who we are. It is about performance and actions, not about identity. 📧

SHERYL DRIGGERS is the owner of Universal Collision Center in Tallahassee, Fla. Through her career, she has gained specialized experience in marketing, management, public speaking, teaching and fiscal oversight. sheryld@universalcollision.com

TECH TIP: PEEL TEST

HOW TO PERFORM A DESTRUCTIVE WELD TEST

STEP 1



Before Welding:
Your test welds should be on the same material or as close as possible to the material you will be repairing.

- Clamp the welded test material into the vice.

STEP 2



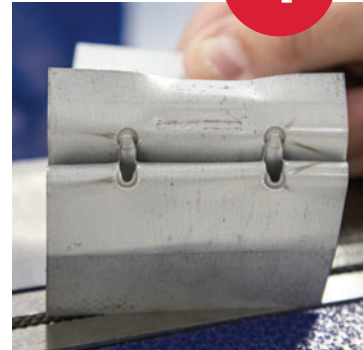
- Bend material back in the vice to create a section to grip and peel.
- Use a pair of channel lock pliers to help roll the material back.

STEP 3



- With the pliers, start peeling the material back.
- You will see the weld nugget start tear from bottom or top of the material.

STEP 4



- If welds are good, the weld nugget will stay in tact while tearing around weld nugget.

NOTE: This test may be harder to complete on HSS and UHSS.

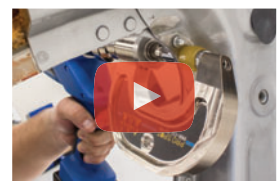
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