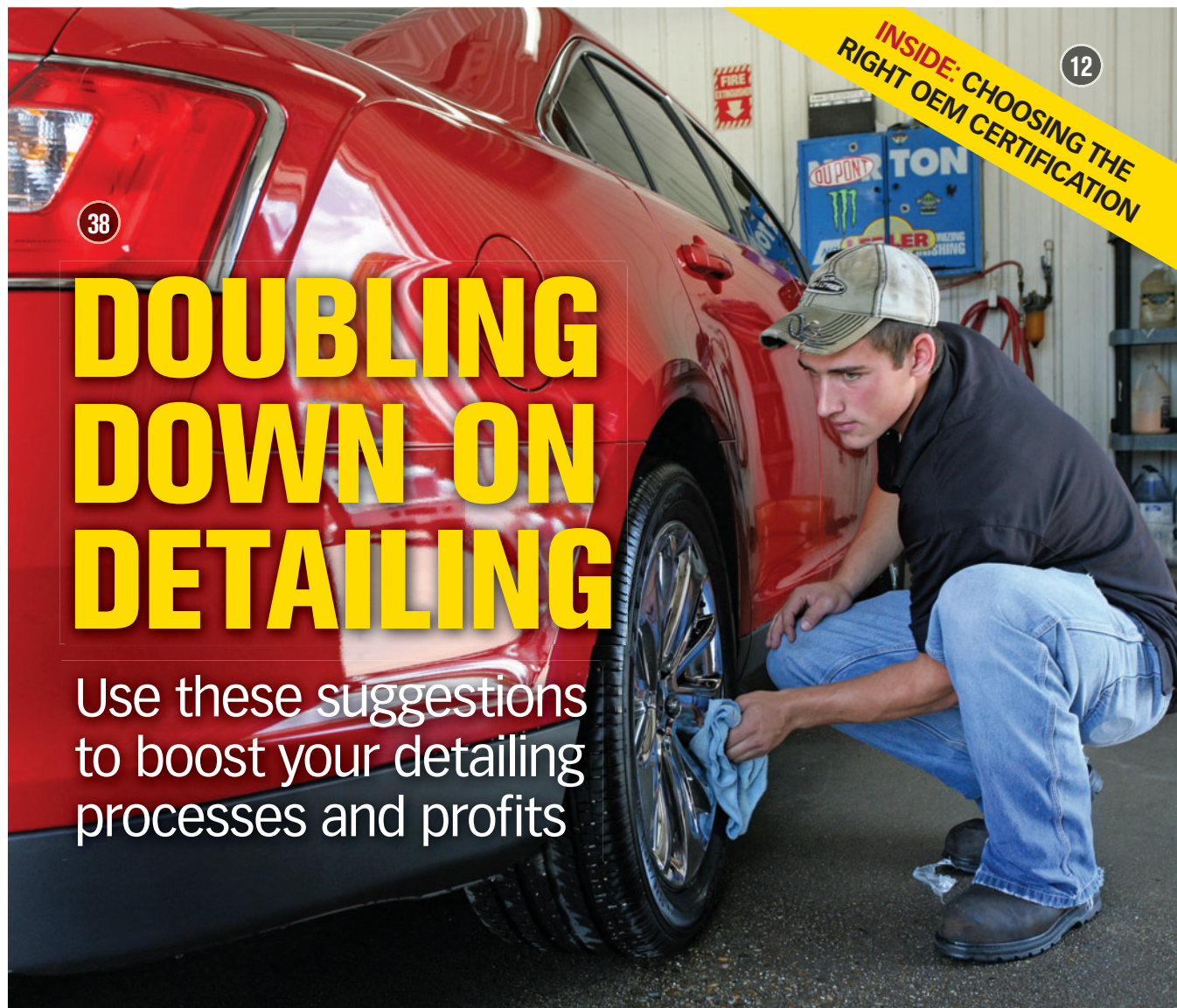




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There are many resources to tap into

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Clamping down on what you should know

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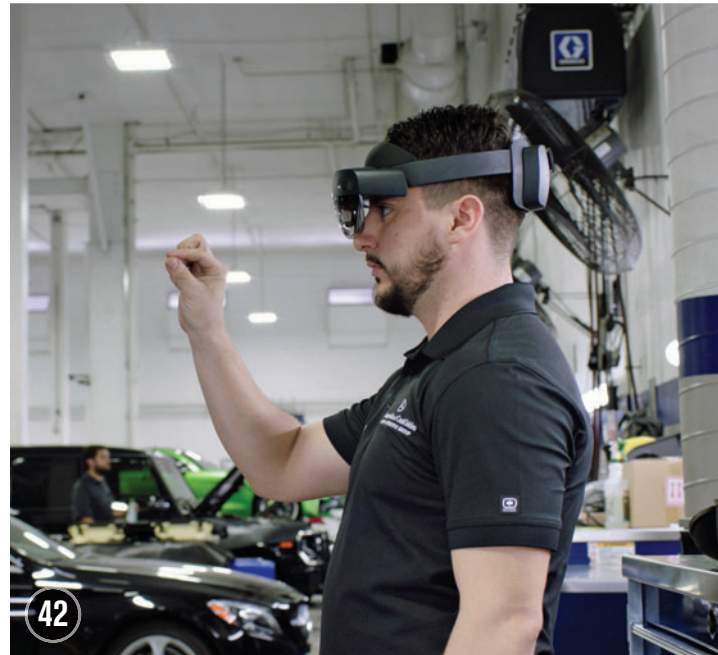
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WEB EXCLUSIVES



BEST PRACTICES FOR EFFICIENT REPAIR, DOCUMENTATION AND ADAS CALIBRATION

Does your shop find it challenging to maintain its efficiency because your technicians' time is being consumed by researching OEM repair procedures and accurately collecting documentation to ensure payment from insurance companies? This is a common issue affecting collision shops industrywide. Watch *ABRN* and Bob Augustine, Opus IVS Vice President of Business Development discuss the ways shops can overcome challenges in gathering OEM repair specifications, best practices for repair documentation, keeping ADAS repairs in-house and more — featuring a look at the new OPUS IVS Collision Repair Solutions, ScanSafe™ and DriveSafe™.

ABRN.COM/OPUSIVS



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Subscription Customer Service

877-382-9187; 847-559-7598

ABRN@omeda.com

PO Box 3257

Northbrook IL 60065-3257

ABRN (USPS 437970) (Print ISSN: 2166-0751, Digital ISSN: 2166-2533) is published monthly, 12 times per year by Endeavor Business Media, LLC, 1233 Janesville Avenue, Fort Atkinson, WI 53538. Periodicals Postage paid at Fort Atkinson, WI 53538 and at additional mailing offices. Subscription prices: U.S. one year, \$72.45; U.S. two year, \$109.20; one year Canada, \$81.90; two year Canada, \$162.75; one year international, \$114.45; two year international, \$228.90. For information, call (877) 382-9187 or (847) 559-7598. POSTMASTER: Send address changes to ABRN, P.O. Box 3257, Northbrook, IL 60065-3257. Please address subscription mail to ABRN, P.O. Box 3257, Northbrook, IL 60065-3257. Canadian G.S.T. number: R-12421313RT001. PRINTED IN U.S.A.

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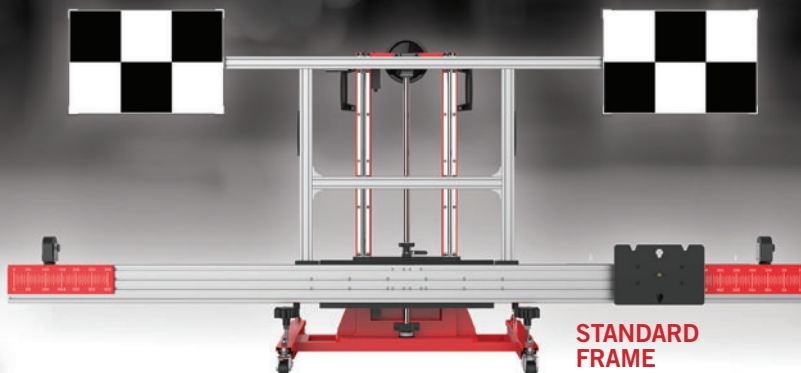
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ACC REFLECTOR CSC0602/01

Allows MA600 to perform front radar calibration on Nissan/Infiniti, VW/Audi, Porsche, Hyundai/Kia vehicles



RADAR CALIBRATION BOX CSC0605/01

Allows MA600 to perform blind spot calibrations for VAG and Mazda Vehicles



RADAR CALIBRATION PLATE CSC0602/02

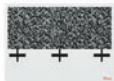
Allows MA600 to perform front radar calibrations for Nissan/ Infiniti and Hyundai Kia models



NIGHT VISION CALIBRATOR BOX CSC0603/01

Allows MA600 to perform NV calibrations for VAG and GM vehicles

EXPAND COVERAGE FOR LDW CALIBRATIONS



SUBARU LDW 2 CSC0601_17

Adds coverage for 2013-2016 Subaru Eyesight



ALFA ROMEO LDW CSC0601/10

Adds coverage for 2018+ Alfa models with LDW



TOYOTA ONE TIME RECOGNITION LDW CSC0601_25

Adds coverage for new Toyota vehicles, improves setup time



HONDA LDW 3 CSC0601_24-01

OE sized target, reduces dynamic calibration time for Honda vehicles

EXPAND COVERAGE FOR LDW CALIBRATIONS



SUBARU LDW 2 CSC0601_17

Adds coverage for 2013-2016 Subaru Eyesight



ALFA ROMEO LDW CSC0601/10

Adds coverage for 2018+ Alfa models with LDW



TOYOTA ONE TIME RECOGNITION LDW CSC0601_25

Adds coverage for new Toyota vehicles, improves setup time



GENESIS LDW CSC0701/23

Improves LDW calibration setup for Genesis models



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ROLAND HENCE, FOUNDER AND DIRECTOR OF FRONTLANE, INC., won the eighth annual SEMA Launch Pad, a program that gives young entrepreneurs age 18-39 an opportunity to launch their products into the automotive aftermarket.

ROLAND HENCE NAMED WINNER OF 2020 SEMA LAUNCH PAD

ABRN WIRE REPORTS //

➔ Roland Hence, founder and director of FrontLane, Inc., was named winner of the eighth annual SEMA Launch Pad, presented by the SEMA Young Executives Network (YEN). The announcement was made Monday, Nov. 2, on SEMA360, the new online trade-only event focused on products for the automotive industry.

With more than 80 applicants, the Launch Pad competition concluded with Hence pitching his invention to a panel of industry experts against the five finalists at the Petersen Automotive Museum. His winning product is a new technology for all vehicles.

“As an entrepreneur, you dream about this moment. I am incredibly proud of my team and grateful to SEMA

>> CONTINUES ON PAGE 5

BREAKING NEWS

ASSOCIATION NEWS

CONSULTANT SIMS JOINS CIECA BOARD OF TRUSTEES

➔ CIECA announced that Russ Sims, property & casualty claims senior business consultant for Nationwide, joined CIECA's board of trustees. In his new role, Sims will support CIECA's mission to develop and promote electronic data integration standards that allow all segments of the collision industry to be more efficient.

Insurance companies, rental companies, body shops, and other collision industry players are all looking at the same picture from different angles,” said Sims. “Regardless of their perspective, they all need to work together to make sure their common customer receives the care and respect they deserve. Everyone benefits when we can all agree on a common method of communication.”

Sims has served on CIECA's Subrogation Committee helping to build the BMS messages and said that he is looking forward to being part of the organization's board of trustees. 📺

TRENDING

SUNFIRE PRO OFFERS ONE REFINISH SYSTEM

Sherwin-Williams newest refinish system, Sunfire PRO, is a complete solventborne solution for shops — on one mix bank. The system is for painters who focus on hitting color quickly and turning jobs.

ABRN.COM/SUNFIRE

BOSCH INTRODUCES DAS 3000

Bosch announced a new recalibration system designed for repairing current and future advanced driver-assistance systems. It works with a large number of different OEM ADAS technologies.

ABRN.COM/DAS3000

VERIFACTS INTRODUCES EXPANDED SERVICES

VeriFacts Automotive introduces an expanded offering of coaching, evaluation, verification and OEM certification services impacting thousands of collision techs and several million vehicle repairs.

ABRN.COM/EXPANDED

HUNTER, BOSCH DELIVER NEW ADAS CALIBRATION SYSTEM

Hunter Engineering and Bosch announced an integrated, co-branded diagnostic tool and alignment system that delivers repeatable and documented calibration.

ABRN.COM/NEWADAS

BOLT ON TECHNOLOGY OPENS SOFTWARE TO COLLISION SHOPS

BOLT ON is offering its business-enhancing solutions to body shops, hoping to help more independent shops drive customer loyalty and reap higher revenues.

ABRN.COM/BOLTON

>> CONTINUED FROM PAGE 4

for the platform to showcase our hard work and life-saving product,” said Hence. “I hope that with this incredible result we can take a meaningful step toward reducing rear-end crashes.”

Hence’s winning product, the Impulse – Emergency Brake Light, is a wireless, battery-powered emergency brake light that reduces rear-end collisions by pulsing eight ultra-bright LEDs under extreme braking situations to alert the following driver up to 50 percent quicker. Impulse can be installed on any passenger vehicle with a standard back windshield in seconds, and

has a four-year battery life.

The premiere young entrepreneur automotive program offers innovators, entrepreneurs and inventors between the ages of 18-39 a platform at the world’s largest B2B gathering at the SEMA Show. This year’s SEMA Launch Pad competition included more than 80 applicants.

For his efforts, Hence will receive a prize package that includes \$10,000 to be used to benefit the business, exposure to elevate their business and product to the next level with marketing opportunities to industry media outlets, turn-key exhibit space at the 2021 SEMA Show, a free advertisement in

SEMA News magazine, access to business tools and resources, and more.

The SEMA Launch Pad is presented by the Young Executives Network (YEN), a 1,400-plus SEMA group that fosters and facilitates networking opportunities for young executives. Since 2013 the SEMA Launch Pad program has given young entrepreneurs, students and business owners age 18-39 an opportunity to launch their products into the \$46.2 billion automotive aftermarket. The program teaches participants new business strategies on how to develop, market and boost their automotive products or services. 

SUN COLLISION REPAIR INFORMATION EXPANDS CONTENT AND FEATURES

SUN Collision Repair Information, a brand of Snap-on Incorporated, has expanded its coverage and enhanced its features to make the software even more user friendly, including quick access to Advanced Driver-Assistance Systems (ADAS) repair information.

“One of the most popular features in the software is the Driver Assist (ADAS) Quick Link button,” says Nicholas Blais, product manager for SUN Collision Repair Information. “This gives technicians immediate access to a table that consolidates all of the ADAS information for the vehicle in a single location. It gives the full picture of the ADAS features and components, and techs can simply click to select the repair and calibration information they want.”

Since launching SUN Collision Repair Information at the Specialty Equipment Market Association (SEMA) Show in 2019, the software has seen significant growth in content and coverage, including the addition of 2020 model years. In the past year, several enhancements have been introduced, including:

- **Interactive Wiring Diagrams** - Component names in the wiring diagrams in SUN Collision are active links that connect directly to complete component information. While viewing a wiring diagram, technicians can click on any component within the diagram to see a pop-up menu with selections to learn more about specifications, component location, connector views, guided component tests and more. There is no need to exit the wiring diagram to find related information they need to diagnose the issue.

- **Lift Points Quick Link** - The ribbon appears on the front page of the ISearch[™] Plus module in SUN Collision and provides instant access to the most frequently searched information in the software. Technicians can now link directly to information about lifting points, which can be critical to technician safety and care of the vehicle.

As vehicle technology advances, the line between collision and mechanical repair work is blurring. When a collision occurs, any damage to the body and frame is very likely to also damage

sensors, cameras and other mechanical components that must be repaired and/or recalibrated to return the vehicle to safe operating condition.

“With SUN Collision, auto body shops can take advantage of complete repair information available in a single resource to help them be prepared to perform mechanical work in-house rather than outsourcing those repairs,” added Blais.

SUN Collision Repair Information offers collision repair facilities a comprehensive source of repair information that covers all types of repairs, both collision and mechanical, and includes complete OEM coverage and SureTrack[™] Real Fixes based on actual mechanical repair solutions that expert technicians have used to solve the same problem.

Additional features in SUN Collision include:

- Materials, body and frame, paint and finish
- Repair information searchable by part number
- User-friendly graphical layout
- Mobile friendly 

I-CAR OFFERS UNLIMITED TRAINING AND VALUE

ABRN WIRE REPORTS //

When I-CAR first announced its Training Subscription program for Gold Class shops in 2019, Melissa Laiserin, co-owner and general manager of CARSTAR Michael's Collision in Phoenix, Arizona, met the news with a combination of excitement and hesitancy.

"I was on the fence to enroll; it was a little unclear early on what I was buying — what was included and how it would work," she said.

But as more details emerged, Laiserin's analysis of the subscription program's ROI moved her off the fence, to signing on with gusto.

A no-brainer

"As part of our Gold Class renewal in 2018, we made a huge investment in getting all of our technicians up to Platinum status," she said. "Unlimited Subscription was hands-down the most cost-effective way to send my techs through ProLevel 1, 2 and 3, and provide training to literally everyone in the shop. It was such a no-brainer — we wanted it and knew we had to subscribe."

Prior to enrolling, Laiserin, who co-owns CARSTAR Michael's Collision with her husband Michael, would have to prioritize technicians training based on a fixed annual budget, which only afforded training to key techs. "With Unlimited Subscription, we offer training to front office staff, car porters, and others," she said. "It helps them grow, helps our employee retention efforts, and it also ensures greater skills and knowledge depth of our certified techs. Should someone leave, we can back-fill the position easier and more quickly."

22 classes in 5 days

Case in point: Jamie Summer joined the business seven years ago as a temp employee, answering phones. She was later hired full-time, advancing into customer service. With the Training Subscription program, combined with I-CAR's free and discounted courses through its Industry Relief Efforts, Summer successfully completed 22 classes in just five days!

"As an essential service business, we were open, but like others, were also slow," she said. "So I could sit at my desk very focused and take online courses that

were interesting. I had a number of 'lightning bolts and aha moments'...and in five days, I became ProLevel 1 in Estimating."

The recognition means a lot to Summer. "I like the validation when I talk to an insurance estimator; I can speak with greater confidence."

Laiserin joined in, adding, "Without Unlimited Subscription, we probably couldn't have done that — and now we can offer Jamie and others ProLevel 1, 2, and 3 without worrying about prioritizing specific individuals or added expenses."

"Think about it this way — there is an I-CAR course available that every employee in your shop could benefit from," she said. "Do a cost analysis like I did — consider your employees and the training investment on an 'à la carte' basis versus an Unlimited Subscription. Then look at associated added-value the Subscription program offers; unlimited training for not only technicians but your entire staff, the ability to improve employee retention, as well as increase your bench-strength with role-ready staff. In almost every case, signing up for Unlimited Subscription is truly a huge opportunity." ■

CIECA 2020R2 RELEASE DEBUTS NEW CALIBRATION STANDARDS FOR INDUSTRY

CIECA (Collision Industry Electronic Commerce Association) completed the 2020R2 Release of the CIECA Standards for the collision repair industry. The release includes new Calibration Standards developed by CIECA's Calibration Committee and an enhancement to CIECA's Scanning Standards.

"With the rise of ADAS technologies in vehicles today, it is necessary to calibrate the sensors as part of the repair," said Paulette Reed, CIECA's technical

project manager/business analyst. "The industry identified the need to exchange this information among industry partners in the supply chain, and as a result, new standards were created by the CIECA Calibration Committee."

Formed in January 2019, CIECA's Calibration Committee represents all segments of the collision repair industry. This includes repairers, insurers, information providers, OEMs, parts providers, car rental companies, recyclers,

financial services, glass companies, vendors of scan and calibration tools, and calibration service providers.

"By creating industry standards for calibration, it will enable the data to be shared electronically with everyone involved in the process," said Charley Quirt, CIECA's former project coordinator. "Consumers demand an assurance of vehicle safety and function, and setting standards is the first step toward this goal." ■



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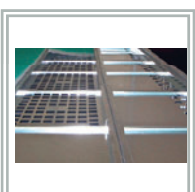
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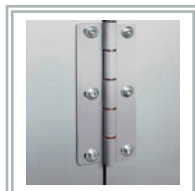
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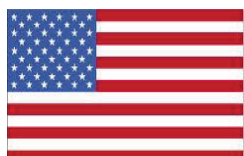
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ORIGINAL ONE PARTS STRIVES FOR RELIABILITY

KRISTA MCNAMARA // Editorial Director

Wade Hilburn has pushed his entire 22+ year career to expand the reconditioned and remanufactured aftermarket parts market. As President, CEO and Co-founder of Original One Parts, he talks with *ABRN* about the company's new direction, its place in the aftermarket and what's to come in 2021.

How has Original One Parts adjusted business practices during COVID?

We have been very fortunate. Our business remained open, we implemented all the precautionary practices recommended by the state and local government, such as sanitization, masks and social distancing, and we adhere to a protocol that was provided by our insurance company. To my knowledge we have not had any cases of COVID-19 among any of our team members, so the precautions we are taking seem to be working well for us.

Original One Parts recently had a change in leadership. Has this impacted the direction and focus of the company?

Original One Parts was purchased by Kinderhook Industries earlier this year. Having the opportunity to be in business with Kinderhook gives us the resources that we have always wanted to be able to continue to deliver on the customer promises of bringing an OE part to them at a better price, conveniently, with consistent, guaranteed quality.

The Kinderhook partnership will enhance our speed to market and the ability to expand our parts offering. Growth and acquisition will be a part of that, but it all comes back to our promise of bringing the highest quality parts to the marketplace.

We have also assembled a very talented, experienced leadership team here with one consistent focus and that

is putting the customer first. We have been successful building our reputation by putting the customer first and that is not going to change. We understand that it takes years to build a good reputation and five minutes to lose it, so we take that very seriously.

Where is Original One Parts' place in the industry and how would you describe your product lines?

We strive to be a reliable, destination supplier and we want customers to think of Original One Parts first when they think of quality OE parts that were built specifically for that car they are working on. We want them to call us because they know what they are going to get the right part, with consistently high quality, fast and at a great price.

We fill a need in the market for a reliable, quality OE part at a reasonable cost. We feel we have found a sweet spot where we can satisfy the needs of all the constituents in the equation — the repairer who wants to install an OE part, the insurer who wants a lower cost, and the car owner who wants both. And we do that all with reliable 24-hour delivery. There is an old saying — Quality, Price, Speed — pick any two, but you can't have all three. We believe that we give our customers all three.

As far as our product lines, right now we focus on suspension, absorption, mechanical, electrical, and appearance parts. We are constantly looking to expand our offering, and that will include sensors and ADAS related parts.

What are some of the key benefits to working with your company?

We receive a lot of great feedback from our customers, and the word they most use to describe us in "reliable." They tell us that the quality of the product they receive is unquestionable, the attention to detail by our customer service team is

outstanding, the right part arrives fast and in excellent condition. Our team takes order accuracy very seriously, and the VIN-to-VIN matching process ensures that we are sending the right part for that vehicle. That avoids returns, delays and ultimately helps our customers maintain good cycle-time metrics.

Our people strive to create a relationship that our customers can rely on. We want to provide the customer service that we would want to receive ourselves and expect.

Any new initiatives or product launches Original One Parts is excited about going into 2021?

As vehicle technology continues to evolve, we will be providing more electronics, more sensors and ADAS related parts. As cars get more sophisticated, we will begin to branch out and provide those more sophisticated parts in addition to the suspension, underbody, and mechanical parts that we supply now.

How do you see the industry changing over the next decade, and how is the company preparing?

As fleets become more EV, that changes the dynamics of the parts business, and we see that as an opportunity for Original One Parts to work directly with fleets to be their full-line parts supplier. EV components are very expensive, and in the future, a vehicle could conceivably be determined a total loss without ever having an accident, due to the high cost of the battery or the EV system. Having a partner who can salvage and recycle the undamaged parts will be very important to keeping parts supply flowing and keeping vehicles repaired and on the road. We are already working with the major manufacturers to be part of their long-term sustainability strategy. We are well positioned to be the solution to a very dynamic change in the automotive industry. ■

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CALIBRATION OF VEHICLES AFTER WINDSHIELD REPLACEMENT

ADRIAN BELL // Contributing Editor

There was a time when windshield replacement was a case of simply removing the old glass and replacing it with a new one. That simpler time has long gone with the advent of the ADAS.

Regardless of the manufacturer, cars that come with Advanced Driver-Assistance Systems (ADAS) have a reputation for providing car owners everywhere with added safety and convenience while on the road.

A car's ADAS, for example, can automatically activate the brakes to avoid a collision. It can also alert drivers to other vehicles that are too close and notifies them if they're drifting from their lane.

The thing with ADAS is that it relies on cameras and laser sensors that pass through the windshield. That's why an ADAS window recalibration is a much more complex task than your usual windshield replacement.

The importance of precise calibrations

Technicians cannot afford to make a mistake when replacing the windshield of an ADAS-equipped car, as it could compromise the system's ability to give drivers a more convenient and much safer driving experience.

As mentioned above, a vehicle with ADAS has cameras and laser sensors mounted on the inside of the windshield. These cameras and sensors are typically responsible for ADAS features such as:

- Lane keeping assist
- Automatic emergency braking
- Automatic headlight high-beam activation/dimming
- Adaptive cruise control
- Lane departure warning

As part of the windshield replacement process, technicians will need to remove, then reattach, the cameras and sensors.

Technicians must make sure that all the ADAS equipment are calibrated accurately. The camera angle, for example, cannot be off by even one degree because it will impact the camera's viewing angle significantly. The laser sensors must also be perfectly aligned so they can "see" the road and nearby obstructions as accurately as possible.

When the windshield calibration is less than precise, the ADAS features of a car may not function properly, and that could lead to a road mishap. While removing the cameras and sensors sounds easy enough, putting them back together can prove to be tricky.

Preparing the vehicle for calibration

For technicians, making sure that a car is prepared for an ADAS sensor calibration in keeping with its OEM's specifications is a crucial part of the process.

While those may differ among OEMs, some have common preparation requirements, which may include:

- A full tank of gas
- Ensuring that the front and rear vehicle ride height are within specifications
- Removal of heavy items from the car
- Tires inflated to pressures recommended by the manufacturer
- Performance of four-wheel alignment
- Clean windshield in front of camera/sensor
- Removal of protective cover from radar sensor

Signs a vehicle needs recalibration

Many new vehicles are fitted with the ADAS system, and many drivers are already familiar with how they work.

However, it's entirely possible for car owners to fail to recognize the signs that their ADAS system needs a recalibration, something that must be done from time to time.

As already discussed above, a windshield replacement for an ADAS-equipped car will require calibration. So will the following situations:

- A fault code appears on the dashboard
- After minor vehicle collisions
- The camera is disconnected or disturbed
- The car's suspension has changed
- After wheel realignment

For technicians providing service to customers with ADAS-equipped cars, it would be great if they could ask them if they have experienced or performed any of the above.

Making these situations part of a checklist is a good idea, so that when customers bring their vehicles in for a checkup, technicians can get the necessary information to determine if they are due for a recalibration and help keep them safe in the process.

Given the complexity of performing calibrations, the technicians who do them will need to be extensively trained in the process, meticulous about the details, and have the right tools and equipment. A partnership with a mobile auto glass company may also be necessary, especially when a vehicle owner cannot get the car to the shop for whatever reason. 📺

HOW YEAR-END TAX PLANNING MAY BE DIFFERENT THIS YEAR

ABRN WIRE REPORTS //

Multiple changes occurred in 2020 due to COVID. In the first two quarters, ASA advocated for our independent automotive repair industry, from ensuring that we were deemed essential workers to the availability of CARES Act program. ASA wanted to make sure the great people of our industry were taken care of during these challenging times.

Fast forward and as the year draws to a close, it's time to open up the books and prepare for year end. The normal conversation would be reviewing deductions, payroll taxes, future investments and other normal planning

discussions and strategies.

But this year is different, so ASA felt that it was important to contact Eric Joern, managing accountant, James Hamlin & Companies, CPAs and Advisors. Joern has been helping ASA members navigate through various questions that arose during the CARES Act. Eric and his firm have also been very supportive to ASA and the members it represents.

"Eric did a wonderful job of taking a complicated situation and simplifying it for our attendees, while educating on important discussion points that business owners should have with their accountants," ASA President Ray Fisher said. "Attendees got a wonderful

overview, thanks to Eric and his way of simplifying tax code."

During the webinar, Joern touched on the following:

- Cautions and risks caused by the Cares Act
- Top causes for tax season panic
- Year-end planning strategies
- Properly categorizing tax deductions
- Timing of year-end purchases
- How it may differ between accrual and tax-basis accounting
- Vehicle nuances
- Why vehicle type may matter
- Differences for 2021 tax planning

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CHOOSING THE RIGHT OEM CERTIFICATION



Some tips to choose the best programs for your business

JOHN SHOEMAKER // Contributing Editor

It is the general consensus that in order to develop sustainability in the collision industry, your collision center needs to be certified by at least one original equipment manufacturer (OEM). Choosing the right one is where I think most need help. Upon review of an updated OEM list, there are currently 32 OEM programs, 15 of which require dealer nomination. You can also achieve certification for seven others through Assured Performance Network.

The majority require your collision center to be I-CAR Gold Class, while others require manufacturer-led training specific to their brand. Some even require training for your front office staff obtainable through the Automotive Management Institute.

If you are still with me, I'll review some steps I use to coach shop owners on which OEM to select. The first thing I do is sort their management system by vehicle make to see which is the most prominent in their shop. I believe that is a good place to start, because it generally reflects the depth in the market

of that particular make. You can validate that information through a market analysis that identifies the number of vehicle registrations for the particular vehicle make you are interested in.

The next step would be to determine if there is another shop in your market that holds the certification for that vehicle make. Some manufacturers have limits on how many collision centers they allow in a market area to hold their certifications. Most OEMs have a search option on their website to help consumers find a certified shop. For example, a search of Honda's site

shows there are three ProFirst collision centers in a 30-mile radius of the searched zip code. Assured Performance Network also has a search option for certification programs they manage. Completing those two steps should help you narrow down your selection.

Now that you have determined which OEM program you are going to pursue, it is time to see what you need to qualify for that certification. The Collision Industry Conference has developed a Collision Repair Provider Definition, which will help with the basics, and each OEM has specific guidelines they require you meet to participate in their program. Some overlap with other manufacturers in equipment and training, but it is important to review each OEM's specific requirements. A review of the General Motors Collision Repair Network Core Requirements show you must subscribe to Mitchell Cloud Estimating, use a three-dimensional vehicle measuring system and have an approved refinishing system. When evaluating a shop for OEM certification, I like to use the core requirement checklist from Assured Performance Network. I have found that by using this checklist, I can show owners they are a lot closer to OEM certification eligibility than they think.

As I coach collision centers towards certification, I encourage them to evaluate the required equipment very carefully. What is most important is the need to identify which OEM programs require a similar piece of equipment. Equipment is often categorized as good, better and best. While "better" might work for one OEM program, an optional "best" would work for two more. It would be wiser to spend the extra money on the best option knowing it would meet qualifications for two additional OEMs, even though you might not pursue them at the current time. Purchasing one more expensive piece of equipment would be more cost-effective than purchasing a second one later to meet other requirements.

The last consideration, but certainly not the least, is your employees. There is a lot of training involved to become OEM certified, and you will need to choose the right person who has the mindset to excel. Not all people are the right fit for an OEM program; remember, the OEMs became involved to improve the customer experience of a collision repair. I encourage shop owners to interview people like they were applying for the job. Express your interest in the OEM certification and validate their acceptance of your investment in the training requirements. Through this interview you should be able to determine the success your employee will have as they go through training.

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This article is worth .25 credit hours toward Automotive Management Institute (AMi) designation programs. To receive credit, log in or set up a free "myAMi" account at ami.knowledgeanywhere.com. Then search "Choosing the right OEM certification," or visit ABRN.com/rightcertification.

OEM certification programs are not for everyone, and the decision should not be taken lightly. However, the collision centers that embrace them will enjoy opportunity for continued success and develop sustainability. From changing how the first notice of loss is communicated to modifying the vehicle repair process, I can say with confidence that OEMs will begin controlling these processes in the very near future. Over the next few years as OEMs ramp up their marketing efforts, create distinct shop locators and utilize telematics with direct consumers, participants in these programs will flourish. They will enjoy increased traffic to their businesses, sustain a competitive edge in their markets

and reap the benefits of preparing themselves for the inevitable changes that will affect every collision center on the map. ■



JOHN SHOEMAKER is a business development manager for BASF North America Automotive Refinish Division and the former owner of JSE Consulting.
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Body Shop Requirements
FROM PULLING TO PAINTING

Toyota makes changes to shop certification

Legal entity ownership requirements have been revised, among others

I'd heard there'd been some changes to the Toyota Certified Collision Center program — changes that could be of interest not only to dealerships, but also non-certified independent shops — so I got the details directly from the source. Toyota's George Irving and Eric Mendoza spent an hour with me — virtually, of course — to help bring me up to speed on the program.

As the national manager of service and collision operations for Toyota Motor North America, George is clearly proud of the success and longevity of the company's certified shop program, which is approaching its 25th anniversary.

"I've been in the auto industry since 1989, and there are not many programs that have lasted 24 years," George told me. "That really shows that the dealers are getting value out of the program."

Eric, manager of collision operations for the automaker, shared one key way the program has evolved this year, which could help more shops meet the eligibility requirements to become a Toyota Certified Collision Center.

"We've lowered the legal entity ownership requirement for the program," Eric explained. "Previously, a collision center had to be at least 51 percent owned by the Toyota dealer legal entity. We officially lowered that to down to 15 percent. We want to broaden the net for dealers who are invested in collision businesses."

That means a fully independent body shop still isn't eligible for Toyota certification. But it does open the door to a shop that may be largely owned by someone else — such as a relative of the dealer or even just an existing shop owner — as long as a dealer has at least a stake in the business.

"The key there is that the dealer is invested in the collision center business," Eric said. "They have ownership of the entire customer experience, from when customer buys the vehicle from the dealer, to when they return for service and maintenance, and that we don't lose them when the customer gets into an accident. Whether that accident results in a repair or



IT DOES OPEN THE DOOR TO A SHOP THAT MAY BE LARGELY OWNED BY SOMEONE ELSE AS LONG AS A DEALER HAS AT LEAST A STAKE IN THE BUSINESS.

results in a total loss, a dealer with an investment in, and understanding of, the collision business can make sure the collision center delivers a good repair experience on the brand's behalf, or brings that customer back to the dealership for their purchase of a Toyota replacement vehicle."

So could a dealership gain 15 percent ownership in an offsite shop — maybe one in a different city — and have that shop earn the certification? George told me there are no specific mileage limits as to how close the shop needs to be to the dealerships.

"However, to be in our program, it must be in the 'primary marketing area' of the dealership," he said. "A dealer in Texas cannot certify their cousin's shop that they have invested in out in California."

A new logo, website and program signage rolled out this past year, which led me to ask: Does an independent shop with dealer investment need to use the dealerships' name in order to be certified and use the program's signage? Not necessarily, George said. "But if you're going to

use the Toyota brand on the outside of the building, it needs to comply with Toyota standards, and you can't dual brand with another business," he said.

Is there a limit on the number of shops Toyota will certify under the program? "At this stage, we don't need to limit the number," George said. "Where the accidents occur is where we need the shops, and the good news is that's kind of where we have dealerships. We'd like to have full nationwide coverage, and we're pretty close."

I'll share more in my next column about what Eric and George told me about the program, along with what impact, if any, the pandemic has had on Toyota training and its replacement parts supply chain. ■

STEVE FELTOVICH of SJF Business Consulting, LLC, works with dealers, MSOs and independent collision repair businesses to make improvements and achieve performance goals.
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LOOKING FOR REPAIR TECHS?

There are many resources to tap into

ROBB POWER // Contributing Editor

The search for talent is a perennial pursuit among collision centers. Young, qualified technicians — including painters — are not always easy to find. However, the industry's major companies, professional associations and technical schools are all working to attract new people to the field.

Coursework

Within the educational sector, tech schools across the country are developing courses to draw students and promote the trade. A variety of initiatives offer young people the chance to learn about collision repair and paint refinish as promising careers. Consider Baton Rouge Community College (BRCC), part of PPG's Partners in Education Program, which pairs the company with technical schools across North America. The Louisiana-based program gives students the chance to become familiar with the industry and learn the skills it requires. It also provides specialized classroom instruction and practical shop experience to prepare individuals for entry-level jobs. The school recently built a \$50 million, 100,000-square-foot, state-of-the-art facility for its repair classes. The facility is so well outfitted with the latest equipment that it's also

used by the pros — I-CAR, Work-Force, PPG and other groups — to train future techs. Similar initiatives are being applied at other schools.

"Our technician base is shrinking, and we need quality painters," says Jeff Johnson, PPG territory manager. "Facilities and programs like these allow us to develop the talent the industry requires."

Coursework

Industry organizations are also taking part. The Collision Repair Education Foundation (CREF) is dedicated to ensuring that there will be a sufficient number of qualified, properly trained and immediately productive entry-level employees. The organization works with its industry partners to attract students, see that they receive the most current technical education and connect them with local and national employers. The foundation achieves its mission through:

- Career fairs across the country that bring together technical students and potential refinish industry employ-



ers (major corporations);

- Fundraisers that help finance professional-level collision shop floor setups at 150 schools nationwide;
- Generous scholarships for promising students who need financial support.

"These programs are the industry's future," says Tom Wolf, PPG director of business development, USCA. "We're educating a new generation of refinish technicians to help young people recognize the opportunities and rewards the industry offers."

SkillsUSA is another organization that brings young people into the industry. This national nonprofit involves more than 300,000 high school, middle school and college students, preparing them through regional and national competitions for careers in trade, technical and skilled service occupations. The program

includes collision repair and car painting and was developed to help make young people aware of the industry's career opportunities. While the program emphasizes skills competition, students also improve those skills by learning from the professionals who instruct and support them at the organization's events. The competition has produced countless success stories. One is Erin Detchon.

Detchon was introduced to the industry through the Medina County Career Center, an Ohio technical school where she took auto refinish and collision repair courses and, in her words, "Loved it!" She entered the SkillsUSA competition and took first in her region. Winning was important — plus she got the chance to network with industry professionals. She attended a job fair and was hired by a major paint company. Today she's a sales trainee for that company. Erin believes that there is a ready pool of talent out there, waiting to learn about careers in collision repair.

"We've gotten away from trades," she says. "We need to emphasize opportunities in the trades. A lot of my friends wish they had gone into the trades."

I-CAR is also vital to the industry's recruiting success. Industry leaders are part of I-CAR's Sustaining Partner program, an initiative designed to help address the tech shortage and expand training opportunities for technicians at every level. The program makes I-CAR classes more accessible and affordable for technical school students as well as career technicians.

Grow your own

Collision centers themselves also have a role. For those centers that say that they can't find qualified talent, there are solutions: make yourself visible and grow your own. There are plenty of ways to do this. Support the industry organizations that develop young painters and participate in their events. Collision

centers can easily get involved with the refinish programs at local technical schools. Shop personnel can visit classrooms and offer instruction. These are all great ways to make students aware of your shop while identifying individuals who might be great additions to your staff.

Inviting classes to your shop to see the real collision repair world in action or holding a community open house often brings out the students who are very interested. In offering a job to someone you think could succeed, you grow your reputation as an approachable company, resulting in even more recruiting opportunities.

Putting yourself or your company out there and simply talking to students helps show young people that car painting is a rewarding career. Point out that it is well paying, challenging and satisfying work — and that doing a good job is something to be genuinely proud of.

Enlightened owners and managers are taking those steps.

Industry-developed instruction

Some shops are going to the next level by sending their new talent to "prepper" courses to help promising but inexperienced rookie technicians learn the ropes. PPG, for example, recently introduced a course called Refinish Preparation Specialist. The class is directed at entry-level personnel who have never received formal in-shop training and work alongside body and refinish technicians.

"This is a class that our customers requested," explains Gregg Whitmer, PPG training manager. "There have been instances in which technicians working in our customers' operations are not



properly trained on how to prepare a vehicle for refinishing. This class directly addresses these concerns."

The course instructs entry-level refinish technicians in personal safety, equipment and fundamental preparation procedures of the repair and refinish process. Techs who have taken the course have been positive about their experience and view it as a valuable step in their career.

No question that there is a constant need to search for new talent in car painting and collision repair. But by getting involved with tech schools and industry organizations, actively looking for the right people, giving them the chance to learn and grow, and recognizing and rewarding their progress the search is easier and more productive. ■



ROBB POWER began his career in the collision industry 34 years ago as a refinish technician. Since that time, he has gained a wealth of industry experience through roles in collision center management, distributor technical services, sales and business development. Robb's experience also includes more than 10 years as a PPG business solutions manager, focusing on the development and delivery of customer training programs, including on-site consulting services. In his current role as PPG senior manager, refinish solutions, Robb is responsible for PPG's training strategy and business solutions support for collision and commercial customers.



THE CHANGING WORLD OF TRAINING, EDUCATION

E-learning continues to gain traction as COVID maintains its hold on society

I-CAR continues to lead and drive the conversation on industry-wide topics, concerns, needs, solutions and advancements. This article comes from I-CAR and was first run in the August issue of the I-CAR Collision Reporter publication. View it at [I-CAR.com/CollisionReporter](https://www.i-car.com/CollisionReporter).

E-learning continues to become a more convenient and efficient way for shops to manage and maintain training requirements, especially in light of the global COVID-19 pandemic.

Technicians and owners from three

I-CAR Gold Class shops met virtually for a wide-ranging discussion on the importance of education and training in today's world. Topics included:

- I-CAR's growing online curriculum
- How shorter courses fit the needs

of diverse workforces

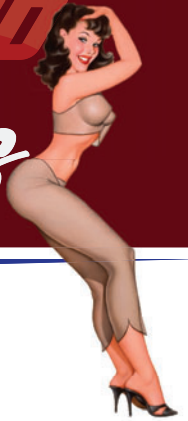
- How online training has been used to engage techs during the pandemic

- How live and hands-on training still remain an important part of learning

Our panelists were Greg Gambrel, Quality Technical Coach with Caliber Collision; Todd Gillette, owner of Gil-



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I-CAR INTRODUCES “GET TO GOLD CLASS” TRAINING PACKAGE

I-CAR,[®] the Inter-Industry Conference on Auto Collision Repair, announced the launch of Get to Gold Class, an all-inclusive package customized for shops working toward I-CAR Gold Class[®] recognition.

The new Get to Gold Class package features a customized training prescription based on shop size and existing knowledge-base, turnover protection considerations, flexible payment options and discounts, and a simplified “one-stop” enrollment process.

“Gold Class represents the highest levels of training commitment in the industry — training that has become increasingly critical amid an era of advanced vehicle repairs, including Advanced Driver-Assisted Systems (ADAS) and Hybrid and EV (Electric Vehicle) considerations,” said Nick Notte, Senior Vice President, I-CAR Sales & Marketing. “Our goal in developing this program is to provide more cost-effective measures and to create a guided experience for shops who want to achieve Gold Class.”

Highlights of the Get to Gold Class Package include:

- An In-Shop Knowledge Assessment that provides a customized package for your shop.
- Pricing scaled to reflect the size of a shop’s technician base and their training history.
- Turnover protection considerations: if a technician

leaves, Get to Gold Class shops receive live, online and virtual training for a replacement technician at no extra cost.

- Flexible pay-in-full or monthly payment options.
- Streamlined, one-stop enrollment, with one I-CAR customer care representative managing all elements of a shop’s Get to Gold Class process.

▪ Automatic enrollment in I-CAR’s Training Subscription, upon achieving Gold Class recognition.

“We continue to lean on all segments of the industry to identify real-time solutions and opportunities to bring critical collision repair education to shops, said Nick Notte, Senior Vice President, I-CAR Sales & Marketing. “In particular, we thank I-CAR’s new Member Council participants for ideas and insights in making “Get to Gold Class” a reality.

Notte explained that Get to Gold Class is ideal for both shops in the process of achieving Gold Class, and for those that are not currently training but are ready to commit to receiving high standards of education, professionalism and quality.

“It’s all part of I-CAR’s quest to deliver laser-focused, relevant educational solutions now in a more convenient, straightforward way.”

For complete details of I-CAR’s Get to Gold Class Package, please visit www.i-car.com.

lette’s Collision Center; Jeremy Weiss, technician at Gillette’s Collision Center; and Will Perry, structural technician at Dorn’s Body & Paint. The session was moderated by Aaron Danielson, Senior Manager – Product Development with I-CAR.

In light of the COVID-19 impact, what are your views on training for your shop? And, how have you kept training this year?

Gillette: We did close down for two weeks. We didn’t have to, but I wanted to be proactive. Everybody here was doing their online training. They could knock out their online training at home, too. So we really heaved up on that. Didn’t have it quite budgeted for, but it was a good time to get it done. We’ve also been



TODD GILLETTE

We definitely haven’t stopped on our training. With the slowdown (due to the pandemic), we actually have pushed more on training because it’s been slow. And since we’ve had that extra time, our approach has been “let’s get it done.”

Perry: We did the exact same thing. We didn’t shut down our shop, but we went through a slow spell for a little while. And we all got caught up on our training as well. I did it in every spare moment that I had. Left work to go home and did

doing a lot of in-house training now with I-CAR-affiliated partners, like Chief Automotive. And it goes toward our I-CAR credits.

all the training I needed for the whole entire year. I don’t think there’s anybody else in the shop that isn’t caught up currently with training, which is great. The online stuff really helped us out a lot.

The online training is great. But I will say that I still really like classroom training. With classroom/in-shop training, I retain all that information because it’s all hands-on, a lot of interaction. Online, it has its benefits, but I feel you really retain more, especially as a technician, when you’re actually in a classroom environment with people that know the industry and know how to prepare this course.



WILL PERRY

Danielson: Great points about instructor-led live classroom settings. When it comes to learning online or virtual, like a webinar format, one of the benefits to our recently-expanded curriculum is that the average time to complete most of these training courses is now under an hour.



AARON DANIELSON

And I want to share with you that one of the enhancements we recently enacted this year was an improvement to the virtual platform, the webinar delivery tool. Now, for I-CAR students joining a webinar, the feedback we're getting is that while the shortened duration for most of the virtual classes are very appreciated, the ease of joining the webinar and the interactivity with the tool is so much better and the user experience has vastly improved. I think that the next time that you get to join one of those, you're going to see that right off the bat.

Perry: I really do like that point. Because you can just jump on the computer and do it. If you can't complete a course, you can come back to it later. Take the test later if you need to.

We talk about the I-CAR training courses offered today being purpose-built. What does that mean to you, and how is this benefitting your training goals?

Gambrel: It gives me a direction; I call it the roadmap. With some of the classes we've had in the past, live classes...let's use CR2000. It was "semi-purpose" built, and I think that got us in that thought process. And then we had Advanced Vehicles 1, 2, Electronics 1, 2, which was taking people from basic beginning knowledge and then expanding their

7 ELECTED TO FILL OPEN BOARD SEATS

I-CAR announced the election of seven individuals to fill open board seats, including three members returning for a second, three-year term. The newly elected members are:

Jennifer Boyer, Global Collision & Strategy Manager, Ford Motor Company; Dean Fisher, President, CARSTAR/Driven Brands, Collision Repair Segment; Patrick Hart,

President, New York Automotive & Diesel Institute, Education Segment; and Bill Shaw, Director Strategic Sales and Training, PPG, Equipment, Tool and Supply Segment.

The three returning members are Mark Allen with Audi; Dan Friedman with Enterprise Holdings, Inc. and Jim Guthrie, President of Car Crafters, Inc.

knowledge to get them in a direction that ensured training and education could benefit their day-to-day job, to help them become more efficient, to help them reduce their liability. We're all concerned about liability. I mean with the advancement of these vehicles, it's scary.

A Honda may as well be a European vehicle...I mean we're talking about eight different alloys of steel inside a vehicle! We all have blind spots. I think the way that I-CAR's purpose-driven curriculum is set



GREG GAMBREL

up, it's sequential enough that it helps cover some of our blind spots. It's hard to ask questions about a vehicle or a repair when you don't know that it even exists. For me, purpose-driven is really getting that information out to allow our employees and I-CAR students across the country to be able to know what questions to ask before they actually get in the midst of those repairs.

Has the availability of many new online and virtual training courses been helpful as you train toward your goals?

Weiss: It's been pretty nice. I've always been hungry to learn; therefore, you al-

ways need training available. Because it's always changing, if you're not always looking you're never going to see the changes and you're not going to repair cars right. You may as well not be repairing cars.

Danielson: What would you share with technicians who have 30+ years of experience and don't think they need today's training?

Weiss: You can't look at it like that. Car technology is never going to stop moving forward, so therefore the people repairing them should never stop moving forward with it. If not, it can be very dangerous and put many people in danger. You have to keep moving forward, keep learning, stay hungry. There's always more to learn. 📺



JEREMY WEISS



I-CAR'S COLLISION REPORTER is a quarterly magazine dedicated to helping navigate

the rapid changes happening within the collision repair industry, providing exclusive highlights, resources and solutions. Advance your career and business with the knowledge gained from each issue.

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Think about the future by looking at current realities

Learn how to adjust to today's market to ensure success going forward

As a tumultuous year winds down, I often get asked what I expect to see ahead for the industry. The lack of industry gatherings this year has many wondering what's happening out there now, beyond the walls of their own shop.

So as someone who has the opportunity to glimpse into different shops and different segments of the industry in every part of the country, I thought it might be just as helpful to talk here about the present rather than project about the future.

Here are a few of my recent observations.

The election is behind us. Now what? No matter who is in office, people are still going to wreck cars, insurance companies are still going to want fast and cheap, vehicles are still going to become increasingly complex. I know some shops were going to "wait until after the election" to make decisions about their company. I don't see the connection. We still have to properly repair vehicles. That's a nonpartisan given.

What you see now is "what's for dinner." I hate the overused term "the new normal." But despite the pandemic, the riots, the wildfires and hurricanes, life for most of us has gone on. We're dealing with it. Sure, business may be down 15 or even 25 percent, but that's just the way it is. The truth is, if you can't live on 25 percent less than what you were doing before, you weren't running a good business anyway.

This isn't all that different from 2008, other than the bottom dropped out a lot faster. It went down fast, but it has come back faster, too. Maybe not fully to what it was before, but smart operators are diversifying and otherwise making it work. As always, those who are doing a good job are going to be fine, and those who aren't, aren't.

So I'm seeing more optimism. Or at least a realization that this is "what's for dinner." If you want to eat, what you're seeing is what's on the plate.

People are looking for body techs once again. Starting



THE TRUTH IS, IF YOU CAN'T LIVE ON 25 PERCENT LESS THAN WHAT YOU WERE DOING BEFORE, YOU WEREN'T RUNNING A GOOD BUSINESS ANYWAY.

early this fall, I started hearing "Does anybody know a good tech?" — a question I hadn't heard much for the previous six months. That tells me two things. First, some people are getting busy again. But there are also some who didn't have the foresight to somehow keep their good quality people through the worst of times. The smart shop owners I know understood that someday things were going to come back, and when it did, they wanted to still have the good people they had. So they kept them around.

The insurance companies are taking full advantage of the situation. Insurance companies see that shops are slow and that some will do whatever they can to get more cars in. "Now is the time to pound on them for more discounts," I can just see insurance companies thinking, "and tell them we'll only pay 'X' for this and that."

Shops now more than ever are part of insurers' claims departments. We all know major insurance companies that pulled everyone in-house this year. You haven't seen one of their ad-

justers since March, and that may not change soon. They've shifted to photo-estimating systems, or relying solely on shops to prepare any estimates.

The good news in this: I'm starting to see a lot more shops charging an estimating fee. And they're getting paid for it.

There's no excuses for not learning when education is everywhere. Sure, there's no substitute for getting out to association meetings or seminars, or for talking to fellow students at an I-CAR class. But there is now so much information and training that is no further than your laptop or desktop monitor. If you're not taking advantage of all the online training and webinars, you're missing out on the knowledge that will help you in 2021 and beyond. 📖

MARK OLSON is the founder of Vehicle Collision Experts, LLC (VECO Experts), a consulting firm that takes a holistic approach to working with shops on repair quality and business performance. mark@vecoexperts.com

EMPOWER EMPLOYEES TO GET MAXIMUM PERFORMANCE

Learn the formula for
getting your staff
running on all cylinders



CHRIS “CHUBBY” FREDERICK //

Contributing Editor

Relying on our vehicles for transportation is a must in today's world. Vehicles are best when they function properly on all cylinders, right? Well, our business and our employees are no different. Working on all cylinders together is a must to achieve the results and goals that you are working toward. This month let's listen to ATI Performance Coach LeAnne Williamson explain how she teaches this to shop owners.

Everyone is aware that finding the RIGHT hire is difficult. So, when you have the RIGHT employees, you're in the best position to succeed. The fact is, it's so much easier to achieve the business results you need with your current

employees than to start over every 60 to 90 days with someone new.

Another challenge that shop owners face is letting go of day-to-day tasks that they did well in prior roles (technician, service writer, manager, etc.). Instead of working on the business, many shop owners continue to work in the business — because it is easier for them to do the work — and they know it will be done right. If this is how you run your shop, you'll be handling every task and problem in your shop while your team of employees wait for their next assignment.

Your role as owner, manager or supervisor is to lead and manage your employees to do their work properly and efficiently, and achieve the goals and results you have set for the business. As a performance coach for ATI, I help many shop owners shift their thinking

to achieve their fullest potential. I'd like to share a formula and coaching process I use to assist you in getting your employees running on all cylinders toward achieving your business goals.

The formula is: Expectations + Observation = Accountability

Before we dive into this formula, let me first state that employees are most successful when they have the knowledge and the ability to perform their jobs. They must also have the necessary tools to perform their job, the confidence to complete their assignments and the desire to perform well and achieve the results you are seeking. Only when these factors are in place can you begin to set expectations.

As the owner, you are responsible for making sure employees know your expectations — the goals, behaviors and performance level you expect from them

on the job. As they work to meet the expectations and performance level you desire, you must share your observations with them by providing feedback weekly in 15-minute, one-on-one meetings. Through this communication process, you are then able to hold employees accountable for their performance and provide the guidance, correction or praise needed. Agreement between you and your employees on performance results is key to your business's success. Otherwise they will set their own performance goals and behaviors.

The coaching process I share with shop owners is called G.R.O.W.

The G.R.O.W. process will give you a framework that will assist you in setting the expectations, goals, behaviors, performance and follow-through with the feedback to hold your employees accountable for their work. Here's how it works:

G – Goals: Again, employees must know what you expect from them (goals, behaviors, performance). Job expectations must be communicated in one-on-one meetings so that they are not left open to interpretation. Be clear about your goals for them and make sure that they are S.M.A.R.T. (Specific, Measurable, Attainable, Realistic and Timebound). Please be sure to work on 1-2 items at a time; too many will be overwhelming, and their focus will be pulled in too many directions.

R – Reality: Have measurable data to share with them on what is happening right now with their work assignments, behavior or results. Have facts, examples, specific evidence on what you have observed; be objective, not subjective.

O – Options: Have your employees brainstorm on what improvements can be made to your shop's processes and services. What solutions can aid them in improving their performance, behaviors and goals? Your input may be necessary if they are unable to come up with ideas themselves. Be creative; get many helpful tools from ATI, outside classes, an ap-

prentice/mentor program and practice sessions. Have fun with this step — remember: work can be enjoyable.

W – Way Forward to Win: Make an agreement with your employees on how they plan to accomplish their goals. If both parties commit to the process, both parties will reap the rewards. Employees will improve their performance, behaviors, and goals, and you will achieve better results for the business. Track and measure to show growth and success by using ATI's G.R.O.W. Coaching & Planning Form.

If you think that adopting and implementing these new processes are a lot of work, you're right. It's a big commitment to get the performance results you want. Working ON the business is always harder than IN the business. Once you develop the habit of communicating feedback weekly to your team of employees, they will feel like they are a part of the success of the business.

I know first-hand how making this mindset and operation shift can help your business. My first store manager assignment was to open a brand-new repair shop from the ground up. I was so excited and thrilled. I just knew it would all go so smoothly — and then I got a reality check. The day-to-day chaos took over and I was working IN the business and not working ON the business. I enrolled in a participative management class to assist me in being able to run my location more effectively. That's where I learned my moment of truth on how to become a better leader.

Upon my return, I held a team meeting to share what I had learned and how I wanted to move forward with monthly team meetings and weekly one-on-one meetings. I stressed the importance of two-way dialogue and getting feedback. I just knew they would all be excited, but to my surprise, they were not. They just figured it was more work for them to do and there was nothing for them in return. Well, I overcame their objections, and we

agreed on a plan to move forward and see how the meetings went for 90 days. The monthly meetings ran better than the one-on-ones in the beginning. It took time for the employees to become comfortable in one-on-ones and share feedback with me on how I was doing and how the business could improve. Sharing ideas did not come easily — they had to feel that it was OK to share the truth and not get in trouble for it. Having a flip chart for the meetings and allowing employees to be the authors of their ideas and plans, made it much more exciting. They felt they were a part of the solutions to improving the performance of the business. The one-on-one meetings rarely went past 10 to 15 minutes each week. Staying focused on the subject for discussion is what helped us keep these meetings productive and efficient.

It took eight months to finally have the formula (Expectation + Observation = Accountability) and the coaching process in place and running smoothly — to the point where employees were running on all cylinders. Together we achieved the results we set for ourselves. Because of the two-way feedback dialogue, my employees aided me in becoming a better leader/manager and they became valued employees. We became a high-performing team together.

I know you can do the same with your business and your team. Together everyone achieves more. 



CHRIS "CHUBBY" FREDERICK is the founder of the Automotive Training Institute. ATI's 145 full-time associates train and coach more than

1,700 shop owners every week across North America to drive profits and dreams home to their families. Our 32 full-time Certified Performance Coaches have helped our members earn over ONE BILLION DOLLARS in return on their coaching investment since ATI was founded. This month's article was written with the help of ATI Performance Coach LeAnne Williamson. chubby@autotraining.net

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CIECA'S NEW LEADER



Executive Director Paul Barry talks COVID, the organization's direction and future goals

KRISTA MCNAMARA // Editorial Director

Paul Barry may be new to the role of executive director for CIECA, but his longstanding relationship with the association made him a natural fit. Having begun his role on June 1 — amid a global health pandemic and the onslaught of continuing technology advancements across the industry — Barry recognizes the challenges the association faces. But

he's ready to meet them head-on. He sat down with *ABRN* to discuss the COVID impact, CIECA's overall goals and how they are meeting industry challenges and encouraging partnerships.

What do you see as some of the greatest challenges CIECA faces in light of the COVID-19 pandemic?

COVID has certainly created issues for the entire industry. It has also

impacted CIECA and our members in some ways. Not so much from an operational perspective, however. CIECA is and always has been a fairly virtual organization with staff and board members located across the country. We have used phone and web-based meeting technology for years to develop data integration standards, so from an operational standpoint, COVID has not

really been a challenge.

I think the biggest impact for CIECA is the inability to travel, network with a cross-section of the industry and have face-to-face meetings. CIECA has become a forum for the industry to meet and discuss technology topics and challenges. Often, it is the informal or casual conversation after the meeting where relationships are built and ideas are generated. It is the inability to have face-to-face meetings and network that we all really miss.

What are your goals for CIECA in your first 12 months as executive director?

This is an interesting time for CIECA. I am new to the organization, having just started a few months ago. In addition, long-time CIECA staff member Charley Quirt recently retired, so we have another new face, Paulette Reed, who recently joined us to replace Charley. With new players involved, it's a good time to take a fresh look at where CIECA has been, what's happening in the industry and where we should go in the future.

My first order of business is getting up to speed on the day-to-day operations of running CIECA. I am talking to our board and other members of the industry, trying to understand where they see the industry going and getting input on how CIECA needs to prepare for the future. With all that, we are taking a fresh look at our strategic plans for 2021 and beyond. My goal is to ensure that we have a solid plan for the next year that will position CIECA to provide the most benefit to our members and the industry.

I am doing a lot of work on our internal operations, looking to improve our processes and membership services. We also want to continue the mission to grow CIECA and attract new entrants as well as established companies that may not yet know all the benefits of CIECA membership.



PAUL BARRY

Are there new partnerships or directions you are looking to develop with CIECA over the next five years?

There are really two key areas we are focusing on for the foreseeable future:

1. OEMs: Manufacturers are taking a much more active role in defining collision repair procedures. This is having a big impact on the industry. The electrification of vehicles, the rapid evolution of electronic sensors and autonomous driving features are making the repair process significantly more complex. We need to build stronger relationships with the OEMs and get them involved in setting standards so that we can help the industry adapt to these changes quickly and efficiently. We simply can't do that without the OEMs involvement.

2. Insurtechs: The proliferation of new insurance technology (Insurtech) companies has been booming for years and does not appear to be slowing down. The Insurtech companies that are developing products for the collision space should all be aware of and be part of CIECA. We can help them significantly in terms of building integrations and market adoption, and it is in everyone's best interest if new players in the market can leverage technology standards that are already in place

rather than introducing proprietary means of integration.

How has your past experience prepared you for this role?

I have more than 35 years of experience in various aspects of the collision repair industry. I have held executive-level positions at both a software company and multiple insurance companies. Through these experiences, I have learned firsthand the challenges faced by insurance companies trying to communicate efficiently with thousands of body shops and the challenges faced by shops trying to communicate with dozens of insurance companies.

I have worked on a number of projects over the years, often focused on integration with partners in the supply chain including claims assignment, estimate and photo upload, paint & materials ordering, estimatics and repair analytics.

I have been involved with CIECA for more than 20 years and served on the CIECA Board of Trustees for about seven years. I was also on the CIECA Executive Committee, holding the positions of secretary, treasurer and vice-chair, so I have a long-term relationship with CIECA and the many great people who are part of the organization.

I feel that all of these experiences have given me a greater appreciation for what CIECA does and how I can help it continue to be successful in the future.

Like many other events, the CIECA CONNEX conference had to be cancelled this year. What can CIECA members do to stay connected until events are given a green light again?

We were certainly all disappointed that we had to cancel the CONNEX Conference this year due to COVID. CONNEX is our biggest event each year and provides the industry with an opportunity for both business and technical people to get together and share views and perspective on issues facing the in-

dusty. It has grown over the years and is now an event that many people look forward to.

We hope very much to hold the CONNEX Conference in September 2021 and plan to host it in Charlotte, NC. We will be sharing more about registration as the time gets closer.

The other great industry outreach that we offer is our monthly CIECAST webinar series. These are one-hour presentations where we invite experts from the industry to talk about topics that are timely and relevant. Each month, hundreds of people from all segments of the industry register to attend our CIECAST events. You do not need to be a CIECA member to attend and there is no cost. Simply go to www.cieca.com and register under the CIECASTS tab.

Technology continues to grow and advance across all facets of the automotive industry. How has this shined a light on some of CIECA's core focuses?

As an industry, we see a lot of change coming at us in the not-to-distant future. This includes the growing development of the electric vehicle, the rapid evolution of autonomous and Advanced Driver-Assistance Systems (ADAS) technologies, battery technology and the environmental impacts it is creating, smart roads and smart cities, the internet of things (IoT) and connected cars. These developments will all result in some kind of changes in the repair process. Whether it is the processes of the supply chain, repair techniques or the parts we use, there will ultimately be changes in the future. CIECA can respond to these changes by amending our current standards or developing new ones as needs dictate.

We also want to stay up to date in terms of standards technology. Our current data standards were developed for XML. Companies today are moving to APIs, many using the JSON format be-

CIECA DEBUTS NEW CALIBRATION STANDARDS FOR COLLISION INDUSTRY

CIECA announced in September that the organization completed the 2020R2 Release of the CIECA Standards. The release includes new Calibration Standards developed by CIECA's Calibration Committee and an enhancement to CIECA's Scanning Standards.

"CIECA's mission is the exchange of electronic data within the collision repair industry," said Darrell Amberson, chairman of CIECA's Calibration Committee. "The Calibration Committee worked diligently to develop and maintain message standards and codes for the industry in regard to the calibration process and properly documenting all of the procedures."

Formed in January 2019, CIECA's Calibration Committee represents all segments of the collision repair industry. This includes repairers, insurers, information providers,

OEMs, parts providers, car rental companies, recyclers, financial services, glass companies, vendors of scan and calibration tools, and calibration service providers.

Gene Lopez, a member of the Calibration Committee, said committee participants drafted a document with details on the calibration process. This includes information from the initial pre-scan to the disassembly of the damaged vehicle, blueprinting, discovering Diagnostics Trouble Codes (DTCs), vehicle repair, the post-scan process and calibration functions.

"By having all of the industry segments come together on the committee calls each week, it helped us identify a broad range of possible 'what if' scenarios in terms of the documentation that may be required or expected pertaining to the repair," said Amberson.

cause it is more efficient. We are exploring how to support the needs of both XML and JSON standards for the future.

Are there any areas where CIECA is looking for more industry involvement and participation?

CIECA was founded to support all aspects of the collision industry. Our goal is to help the industry operate more efficiently in support of our members and, ultimately, the consumer.

CIECA is principally a volunteer-based organization. All of our standards committees are comprised of volunteers from different companies within the industry. It is not unusual to have people from software companies, insurance companies, recyclers, salvage companies, parts companies and others working together to develop and refine the

CIECA Standards.

We are always open and welcoming to new volunteers. You don't have to be part of a CIECA member company to participate. We invite anyone interested in learning more about CIECA or joining a CIECA committee to reach out to us. We will be happy to invite you to a meeting, give you an opportunity to learn about our various committees and introduce you to committee members.

For more information, email executivedirector@cieca.com or visit www.cieca.com. ■



KRISTA MCNAMARA is Editorial Director for *ABRN* and its sister publications, *Motor Age* and *Aftermarket Business World*.

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SHOP HELPS BOY GET TRUCK SHOW READY

Arizona's Sun Devil Auto pitches in to help airman and his son finish their '67 C10 project

JAY SICHT // Contributing Editor

Community involvement projects can come in many forms, but how often does an auto repair shop get to assist with “fixing up” a classic truck, especially for an enthusiastic boy? Regular customer Hugo Caballero approached Sun Devil Auto in Surprise, Ariz., for assistance in getting the '67 C10 belonging to his 11-year-old son, Venicio, roadworthy and otherwise ready for an October car show. Store Manager Mike Arana saw the unique opportunity, and he jumped at the chance.

“We quickly noticed the passion that Venicio had and understood how important this father-son project was going to be, so helping them in every possible way was an easy decision for us,” Arana said. “It’s essential that we support young enthusiasts who share our passion for restoring vehicles to their original beauty.”

After earning money mowing lawns and doing other odd jobs, Venicio asked his dad if he could use the proceeds to purchase a classic truck to restore as a father-son project. The duo pored over online ads before Venicio found the object of his dreams in Clearlake Oaks, Calif., a '67 C10 short bed pickup. Venicio

said he was particularly drawn to the unique patina of the blue respray over the factory white finish, timeworn in spots down to the oxide primer. Hugo Caballero was new to the car-restoration hobby, but he and Venicio dug into the truck project. Their knowledge and confidence enhanced after watching dozens of YouTube videos on the subject and watching several automotive-restoration TV shows.

The Caballeros installed a new master cylinder, drop spindles, tie rod ends, lower ball joints, a disc-brake conversion, and shocks and springs. They occasionally ran into a particularly tough spot, such as a ball joint that refused to separate from the spindle without a torch. As fate would have it, though, their new neighbor, Bill Tuttle, is an experienced automotive technician and has come to their aid multiple times when



THE SURPRISE, ARIZ., SUN DEVIL AUTO, led by Store Manager Mike Arana (right) with Technician Edgar Mendez providing his expertise, helped Hugo Caballero get his son, Venicio's '67 C10 back on the road.

he'd see the father and son working in their garage across the street.

With the push on to make the Oct. 24 Oasis Classic Car Show in Westgate, Ariz., the truck still needed rear suspension work, such as new drop springs, shocks and track bar installed, and of course a wheel alignment. Caballero, a busy Air Force airman at nearby Luke Air Force Base, approached Arana with his request for help to make the deadline.

“Not only did the folks at Sun Devil Auto spend days with us to get the C10 in improved working order, but they also

helped Venicio gain valuable knowledge and experience. Special thanks to our mechanic, Edgar Mendez, who took the time to explain everything he had repaired and installed,” Caballero said, noting that Venicio was particularly enthused in seeing Mendez perform the alignment procedure using lasers.

The ride height is now 2-1/2 inches lower in the front and 4 inches in the rear, with new smoothie black wheels wrapped in 255/60 front tires and 275/60 rear tires.

“He was a little nervous, because he didn’t want to go too low. But like his mom, brother and friends said, ‘Is that even the same truck?’ Because it originally looked like a farm truck. But the moment you drop it, you’ve got that dominant, mean stance. And everyone just loves it.”

Now sporting its new moniker “Relic” on its personalized license plate, the truck has been freshened up not only with the typical tuneup parts, such as spark plugs, wires and a fuel filter, but it’s also been upgraded to an HEI (High-Energy Ignition) distributor. The duo also installed a RetroSound Bluetooth radio, which preserved much of the original AM radio’s looks.

At some point, Caballero would like to pull the original 327 engine and reseal it, install a slightly larger camshaft, headers, new water pump and timing chain. Then, perhaps power steering and A/C.

“In Arizona, driving it in 115-degree heat is not fun. The truck could always use more things, but he’s got to deal with the money; I have to teach him to work hard.”

For now, Venicio is content to sit in the truck in the garage, practicing depressing the clutch pedal and shifting the four-speed manual transmission until he and his father get the chance to practice driving in a field. The Caballeros have sanded the frame, firewall and supports for the wooden bed floor

before finishing re-painting them. Near-term plans are for Sun Devil’s auto body shop to repair some of the dents, but preserve the patina that first drew Venicio to the truck.

Montgomery Miller, area manager for Sun Devil Auto, which has 23 stores in the Phoenix area, eight in Las Vegas, and four in Texas, has also been involved in the project.

“I’ve never seen an 11-year-old kid who was so much a purist about a project. He wants to keep that patina. On the driver’s door, there is a spot where you can tell someone had their elbow on there for just years and rubbed it all the way through every layer of paint down through the actual primer, and then the metal itself is actually discolored from the rubbing and sweat. And he says, ‘I don’t want to touch that, because I want the history of that in the truck.’”

So the plan at the moment is to clearcoat the truck over the existing paint to preserve its look, while massaging out some of the dents. Desiree “Dez” Ferrell, who was a contestant on the recent “Bitchin’ Boot Camp” TV show, will be in charge of that project.

“We’re going to be working to see if we can do some of these minor detail things without changing too much of the original quality of the truck,” Miller said.

Store managers have the authority to help out a customer in need, said Miller, who even assisted in diagnosing why the truck wouldn’t run when Venicio got a little too enthusiastic with the pressure washer while cleaning the engine bay and got the distributor wet.

“What we preach to our employees isn’t how to sell air filters, tires or shocks



VENICIO CABALLERO TRIES OUT the new RetroSound Bluetooth radio he and his father just installed.

and struts,” he said. “We talk about ‘What do we need to do to help somebody?’ We’ve got to understand what their problem is, but it’s more about what does the customer need from us to get the project done? Do they need a knowledgeable person to listen? Do they need a specialized technician? It’s about the individual’s needs. So when they see things like this, they have the ability to jump in and help out. Obviously, when it comes to larger things, we have to get involved to make some of those financial decisions. But this one was a no-brainer for them. It was a few hours of labor to help someone out.”

Miller said the company has been involved in a number of civic projects in its communities since it began 42 years ago.

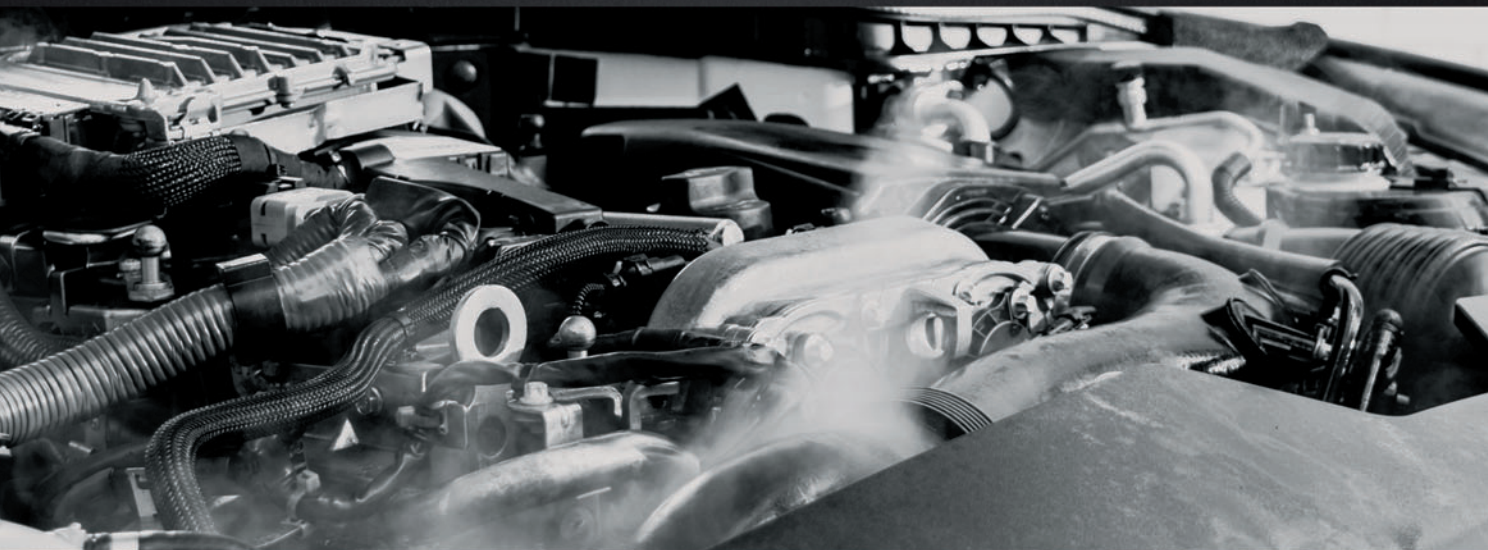
“But we never really dove into this type of project. Having the ability to jump in with Hugo and Venicio on this project has opened our eyes to the possibilities. It’s been more personal, more one-on-one, and it’s something we may look at doing more of in the future.” ■



JAY SIGHT has worked in a number of roles in the automotive aftermarket for more than 25 years.

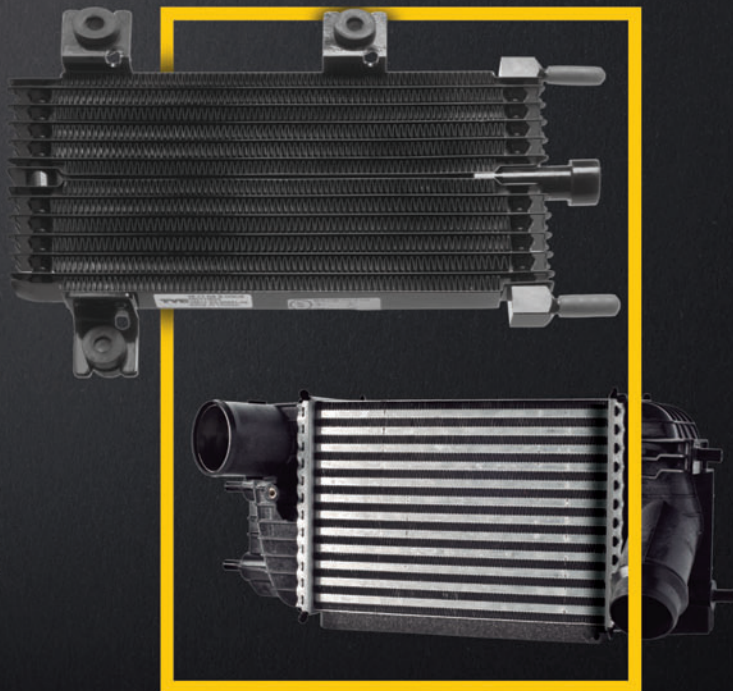
Based in Columbia, Mo., he has covered all industry segments of the business as a writer and editor for 15 of those years. jaysicht@gmail.com

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RV repairs go the distance

Shop en route to do more business thanks to pandemic-induced family travel plans

JAMES E. GUYETTE // Contributing Editor

➔ Practicing the ultimate in social distancing is gathering your relatives together and putting miles and miles of safely self-contained accommodations between you and whatever apprehensions you're leaving behind. And a lot of families are doing just that by hitting the road in recreational vehicles during this period of shutdowns and quarantines.

In August alone a record-setting 39,486 new RVs rolled off dealer lots, marking a 17.3 percent increase over the sales figures posted in August 2019.

"The RV industry has experienced strong consumer growth over the past 10 years, but the recent soar in consumer interest in RVing driven by the COVID-19 pandemic has led to a marked increase in RV shipments," reports Craig Kirby, president of the Recreational Vehicle Industry Association (RVIA). "People turn to RVs as a way to have the freedom to travel and experience an active outdoor lifestyle while also controlling their environment."

Among the standout specialized repairers serving the needs of these modern-day nomads is Ultimate Collision & RV of Peoria, Ariz. — a Phoenix suburb famed for its 23,000-acre Lake Pleasant Regional Park, "a true oasis in the desert" featuring two marinas for boating, fishing, water skiing, kayaking, camping and scuba diving.

"At Ultimate Collision we know how frustrating it is when your RV gets damaged," notes Tino Escobedo Jr., who owns the shop along with Sunny Singh. Tino Escobedo Sr. is the production manager with 40 years of paint & body experience, joining his son in leading a staff of 30 skilled workers.

"Even a minor repair can become a big pain when you are traveling or storing your RV at home or in a remote location," Escobedo Jr. points out.

A 5-star Google rating, I-CAR Gold Certification and VeriFacts VQ (Verified Quality) status confirms a commitment to meeting and exceeding the expectations of an on-the-go clientele.

"Our team goes the extra mile to ensure that the customer drives away delighted in the service that they received and the condition of their repaired vehicle," Escobedo Jr. says. "Customer service is our No. 1 priority, and every vehicle is meticulously inspected before being returned to its owner."



ULTIMATE COLLISION & RV Peoria, Ariz. // www.ucrvaz.com

Tino Escobedo Jr. & Sunny Singh
Owner

**10 days (RVs);
5 days (cars)**
Average cycle time

1
No. of shops

**\$10,000 (RVs);
\$3,500 (cars)**
Average repair order

2
Years in business

8 RVs; 30 cars
Average vehicles per week

30
No. of employees

\$120,000
Average weekly volume

6
No. of DRPs

Axalta
Paint supplier

20,000
Total square footage of shops

\$6 million
Annual gross revenue

20
No. of bays

RV repairs, restorations and modifications are offered along with services for all vehicle sizes and styles, including autos.

Generating an average RV repair ticket of \$10,000, fixing a camper can be pricey with cascading tasks to be tackled. For example, a heavy limb crashing down across the roof



can necessitate addressing a smashed vent and damaged air conditioning unit along with a crumpled up-top body panel.

Situated on a 2.5-acre lot with 20,000 sq. ft. of covered work space containing state-of-the-art equipment capable of fixing any car, truck, SUV or RV, the partners have recently purchased 6.4 acres just down the road for a future location hosting a 60,000 sq.-ft. indoor facility.

“We are currently working with architects and developers to draft our new shop with functionality and ease of access in mind,” says Escobedo Jr. “We will be able to complete the entire repair process indoors and further streamline our already seamless repair process.”

Setting the business apart from competitors “is our practice and understanding that the best way to earn business is to treat every customer with respect and integrity.”

This policy of always putting the customer first includes establishing upfront expectations. “Customers are kept informed about the status of their vehicle throughout every step of the repair process,” he says. Each repair comes with a lifetime warranty for the duration of vehicle ownership.

“If the repair is being paid by the insurer, once the claim is started we work with the insurance companies to minimize the inconvenience to our customers.” Six direct repair programs (DRPs)

are utilized: Geico, Amica, State Auto, Common Wealth, Safe Auto and Fleet Response.

“As with any healthy relationship, we focus on honesty and transparency with all the insurance providers we work with. Becoming a preferred shop for an insurance provider is a privilege that we take very seriously,” according to Escobedo Jr.

“We guarantee every repair and aim for the greatest possible customer experience. We receive repeat business and referrals from our customers and insurance providers/agents due to our consistency and attention to detail,” he says.

“One of the most satisfying aspects of working at Ultimate Collision is repairing a customer’s vehicle back to like-new condition,” Escobedo Jr. adds. “Seeing someone who was distraught when they dropped off their vehicle, then beaming with excitement when they receive their vehicle back makes it all worth it.”

Teaching, training and coaching

A Verified Quality (VQ) designation from VeriFacts Automotive — obtained in June — confirms that the shop adheres to the highest of vehicle repair standards. Not only do the VeriFacts coaches teach and train, but they also perform unannounced on-site visits to

verify technician repair skills, methodologies and overall quality processes.

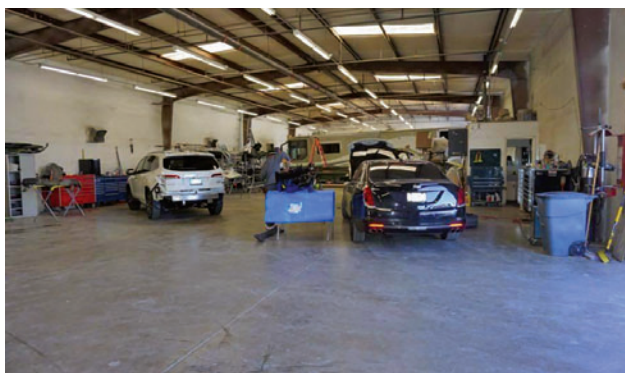
“VeriFacts Automotive provides a valuable service to our team,” says Ultimate Director Scott Amrine. “It’s a big benefit to have a third party provide the training and inspect our repairs for us. They can go a lot further than our production management team can go.”

According to VeriFacts Vice President of Operations Bill Romaniello, Ultimate’s participation in the program “is testament to their commitment to excellence and continuous improvement.”

The provided advice assisted the shop in creating an efficient and accurate weld-testing process. “This ensures that every weld we make is done correctly and documented. They have worked with our technicians on using the proper products for corrosion protection to meet each OEM’s requirements and proper application techniques,” says Escobedo Jr.

“Their coaches even inspect our paint quality. All of this makes our technicians the best that they can be, ensuring the safest, highest-quality repairs for our customers,” he emphasizes. “VeriFacts VQ repair facilities are known to be among the most reputable in the collision repair industry, and we are humbled and proud to be included in that elite group.”

The father and son Escobedo duo



established Ultimate in 2014. Soon after they pursued Honda certification, calling upon VeriFacts for the training and coaching needed to meet the automaker's standards.

Certification from Ford is another achievement, and they are working on earning additional OEM certifications.

"Our technicians are qualified to work on any vehicle and have the proper tools and training to do the job correctly," says Escobedo Jr. "This is one of the benefits of partnering with VeriFacts Automotive. They make sure that all our technicians are using the proper tools and procedures recommended by the vehicle manufacturer."

Repairs, restoration and customization

A 60-foot paint booth is a key element of the state-of-the-art facility, which offers restoration and customization projects in addition to full-service maintenance. "We have top-of-the-line equipment, including premium Pro Spot welders and a Chief frame repair system," he says. "There is no job too big or too small for us to handle."

Value and respect

"We are able to maintain a positive relationship with our parts and materials vendors by being consistent. We firmly believe that consistency is the key to success in this industry on multiple levels," Escobedo Jr. continues.

"If you pay vendors consistently, purchase consistently and communicate effectively on a consistent basis, parts and material vendors will want to do business with you," he notes.

"We also maintain a level of respect for all vendors and the products that we receive. From everything from paint and primers to parts, we only use the highest quality products from reliable manufacturers like Axalta and 3M. We hold our vendors to that same standard and we ask that they hold us to the same standard," says Escobedo Jr.

"As with any healthy relationship, we focus on honesty and transparency with all the insurance providers we work with," he further explains.

"Becoming a preferred shop for an insurance provider is a privilege that we take very seriously. We guarantee every repair and aim for the greatest possible customer experience. We receive repeat business and referrals from our customers and insurance providers/agents due to our consistency and attention to detail," Escobedo Jr. reports.

Qualified employees are recruited by offering a mentorship program and a complete training curriculum "to help them grow and progress in their careers," he says, adding that "each employee serves a very critical role in the repair process, and we treat them with value and respect. Most employees refer to Ultimate Collision as their second family."

Frequent company-wide lunches and other events are conducted. "We have worked hard to create an environment where our employees feel valued and appreciated. This in return incentivizes our employees to work hard and do their best on every repair, and to repair each car as if it belonged to their family," says Escobedo Jr.

"At Ultimate Collision we know that a happy, motivated employee will produce the best results," he points out, "all with safety and customer satisfaction as the goal."

Escobedo Jr. goes on to observe that "we believe in the power of word-of-mouth marketing, and we receive referrals and repeat business from very satisfied customers. We have worked hard to establish and maintain a great reputation in our marketplace, which is so important for a family-owned business. Our No. 1 goal is always that every customer leaves our shop totally satisfied," according to Amrine, the shop's director.

He adds, "We have been blessed that despite the COVID-19 situation we have had plenty of repair work and have been able to keep our entire staff working." ■



JAMES E. GUYETTE is a long-time contributing editor to *ABRN*, *Aftermarket Business World* and *MotorAge* magazines. JimGuyette2004@yahoo.com

TORQUE SPECIFICATIONS

CLAMPING DOWN ON WHAT YOU SHOULD KNOW

DAVID BRINKLEY // Contributing Editor

As a young man, many hours were focused on torque as it related to horsepower at the local dragstrip. It was never applied on the streets (fingers crossed behind my back), though, as I always drove conservatively on public roads. It may be a bit more fun if we were going to cover torque as it relates to a performance engine, but I'm afraid it will be in the arena of collision repair. There is an interesting relationship between horsepower and torque as it relates to performance. It's worth diving into — after the shop closes for the day, of course. As far as the aspect of torque we will discuss here goes, I do think it will enlighten your sense of the repair process, as this area is typically misunderstood when it comes to bolt-on body panels and other components as well. We are all familiar with the torque specifications for a wheel on vehicles of all types. At least I hope you are; we will touch on that subject as well. I will also attempt to enlighten you on the less common areas of specific torque applications. As the vehicles we repair are changing rapidly, we should all understand the current repair procedures and adopt the changes to be a regular procedure moving forward. Some of these areas we will discuss have been in place for some time but are oftentimes overlooked by those in and outside of the shop.

I will revisit torque as it relates to what we do — specifically with fasten-

ers of all types. The definition of torque as it relates to physics goes about as far over my head as the clouds on any given day. I'm going to give you the definition as it relates to what we do with screws, nuts and the like. Torque is the application of force at a radial distance while causing rotation. It is also referred to as torque loading when we are specifically discussing threaded fasteners. The word "torque" is derived from the Latin word "twist." That background on the origin drives home the rotational aspect of torque as we know it. In simpler terms, it's the amount of pressure exerted on two or more objects where they are joined. We should all be familiar in its most common form where a lug nut or wheel screw is torqued to a specified value. The value most commonly used is newton-meter, or sometimes represented as "N-M" or "Nm". It can also be expressed in pound-foot (lb-ft). For a simple explanation of this British-derived measurement, it is that one pound-foot is the torque created by one pound of force from a pivot point. Conversions can be done for either value. One-foot-pound is equal to 1.356 newton-meters. If you need to convert newton-meters to foot-pounds all you would need to do is divide your Nm value by 1.356.

Torque specifications are not to be confused with a Torque-to-yield bolt.



TORQUING A FENDER BOLT TO SPECIFICATION

They are one-time-use bolts that are designed to stretch. I-CAR RTS Back-To-Basics: Torque-To-Yield Bolts (posted February 12, 2020) says this:

Sometimes going back to the basics can make the difference between a quality repair and a failed repair. Let's take a look at torque-to-yield bolts.

What is a torque-to-yield bolt? It is a one-time-use fastener that is designed to stretch during the torquing process (installation). Because of this stretching, the integrity of the bolt is compromised. These bolts cannot and should not be reused due to the stress caused to the bolt during its first installation.

It is important to be aware that these bolts will not have the same clamping strength if attempted to be used a second time. Torque-to-yield

bolts may break if reused or become loose over time. Some common areas where these bolts are found include cab, pickup box and suspension mounting locations. It is important to note that most repair manuals refer to these bolts simply as one-time-use fasteners instead of torque-to-yield.

The repair manual should always be referenced to ensure the correct fasteners are being used for a complete, safe and quality repair.

Once we know what the values are and what we are trying to achieve, a torque wrench is typically the tool that is used. It's very similar to a ratchet in that they can use different size sockets depending on the fastener. There are a few different types. Split-beam click wrenches, torque wrenches and digital torque wrenches are some of the categories you may come across when shopping for one. Torque screwdrivers are similar in the way they function. It is at this point I should cover the variations in torque wrench sizes and types. The most commonly used and recognized size in our industry is the 1/2-inch drive version. As stated before, the tools may be that of a 1/4-inch drive. 3/8-inch and 3/4-inch drive versions are available as well. They all arrive at the same function, but may differ in the way they are used/set. Typically the value is set to a predetermined number you wish to reach. The tool will let you know in a variety of ways when that specification is reached. I'm gonna go back a few years here and tell you that some of my early ones used a needle that would climb a scale as pressure was applied. It was up to the technician to stop at the desired force. They actually use a variation of that in some tools today. It is a bit more advanced than a crudely exposed needle of days past. Popular for some time now has been the preset version where a value is entered, usually by twisting the handle at the base

or "rolling" a value with a thumb wheel to the desired spec. When that specification was reached, the tool would let you know. An audible click is common on the regular and split-beam versions. Digital torque wrenches may let the technician know when the preset number has been reached through a series of lights, audible tones or both. For more in-depth education about torque wrenches, take the online "Torque Wrenches" course offered by I-CAR.

The Torque Wrenches training course is designed to provide a basic understanding of torque wrenches used with collision repairs, including an overview of all the various types of torque wrenches. Operation and maintenance considerations for torque wrenches are also included.

We covered a bit of the basics and history to this point. I've also touched on the most common ways the torque specifications and tools are used. If you are familiar with and have been a part of wheel torque, that is a good thing. Just know that is the tip of the proverbial iceberg when it comes to torque settings and specifications on a vehicle. The wheel/tire combination is important for occupant safety, but the correct torque specs for bolted-on body parts, seats, suspension components, latches and a host of other items are important, as well. We have been pounding each other with the realization that today's vehicles are built and repaired differently. I'm going to borrow Jeff Peevy's line he used in a Collision Boost Radio podcast: "It's no longer your father's body shop and in fact the industry already belongs to the next generation." This statement sums up why we must expand our existing knowledge and continue to accept change. I'll give some examples of torque specifications in areas we have typically tightened by using hand or power tools without measuring.

I have taken an excerpt of a procedure for a GM truck front bumper



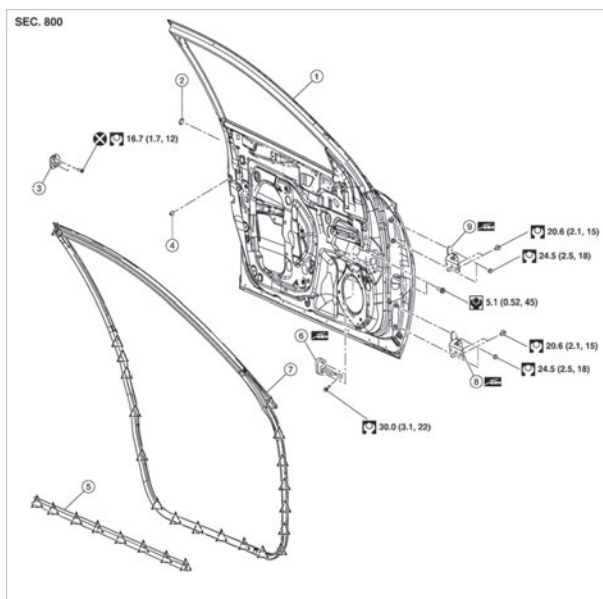
SNAP-ON DEALER DAVE WOOLUM

displays a 1/2- and 1/4-inch drive torque wrenches.



TORQUING A DOOR HINGE BOLT TO SPECIFICATION

replacement from an online repair information provider. This is what you may encounter when pulling up procedures for the repair and documentation that would accompany the file when completed. You should note that what would seem to be a relatively insignificant component has a specific torque specification of 58Mn (43 lb-ft). Once you understand what it is and why we need it you should be able to spot the specification when reading a procedure.



They can be “off to the side,” randomly noted within or even called out on an exploded view of parts. You should now be able to quickly spot it below and have it on your “radar” moving forward.

2016 Chevy Truck Silverado 1500 4WD V8-5.3L

Front Bumper Impact Bar Outer Reinforcement Replacement

- Vehicle
- Body and Frame
- Bumper
- Front Bumper
- Front Bumper Reinforcement
- Service and Repair
- Removal and Replacement

Call out

Component Name

1. Preliminary Procedures
2. Front Wheelhouse Liner Replacement — Right Side
3. Front Bumper Impact Bar Lower Bracket Replacement

Front Bumper Impact Bar Outer Reinforcement Bolt [4x]

Caution: Refer to Fastener Caution. 58 Nm (43 lb-ft)

Another example is for a 2019 Honda Civic Coupe. The hood latch bolts are to be torqued to 9.3 Mn (6.9 lb-ft).

These lower amounts of torque would be typically done with a smaller torque wrench such as a 1/4-inch drive version.

As I continued my searches through various manufacturers, I found torque specifications for a 2019 Nissan Altima front door. There were specific specifications for the hinge fasteners at the body as well as the door side. The striker had a specified

torque, as well. Below is a partial segment on the door striker replacement procedure:

DOOR STRIKER ADJUSTMENT

1. Loosen door striker bolts.
2. Adjust door striker so that it becomes parallel with front door lock insertion direction.

RPR-000925096-01-IIB2804J

CAUTION: Tighten bolts to specified torque.

Refer to FRONT DOOR: Exploded View.

Notice the “CAUTION” telling you that the components have a specific torque setting. You would then be prompted to click the hyperlink for the exploded view, which will give the torque specifications I noted earlier in the parts diagram shown on this page. The torque values are within the wrench symbol in the picture.

It was also interesting to note the striker bolts are a one-time-use only if removing or replacing the striker. More on that subject at a later time. The point to these examples is that manufacturer guidelines are to be followed at all times. I did run across “sufficiently tighten the bolts” and other similar directions. It will be common to find that

there was not a specific value given by the manufacturer. It may very well be that there is not a specific torque specification given for every component on a particular vehicle.

It is important to know that lubricants, refinish material and corrosion inhibiting products on the fastener or surface it comes in contact with can affect torque outcome. Once again, follow the manufacturer’s guidelines when it comes to these topics. It may be that information is located in a “general guidelines” area, but will give you a reason for the specific instructions you may encounter. An example might be that it would seem prudent to use a corrosion-resisting product on a bolt, but the manufacturer clearly states not to. The reason would likely be that they have a specific torque requirement and the addition of any substance would jeopardize that specification required.

To sum up, it is important to be vigilant about the various areas torque specifications are used and to be knowledgeable about the tools that allow that procedure to be completed. The examples I used are that of vehicles that are several years old. That was done on purpose to show that this is not a new area of concern. I know this was a long read, but anything worth knowing or doing typically takes time. The upside is you’ve earned that “track time.” Now that you’ve studied torque in the shop and know there is a difference, you’ve earned the right to “study” it at the track! 🏁



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A GREAT DETAILING JOB
always involves significant
work on wheels and tires.

DOUBLING DOWN ON DETAILING

USE THESE SUGGESTIONS TO BOOST YOUR DETAILING PROCESSES AND PROFITS

TIM SRAMCIK // Contributing Editor

What is your shop's position on detailing? Do you focus on offering a competent job that checks all the right boxes and highlights an already great repair? Do you specialize in detailing and market it regularly to customers? Or do you contract out to a third party?

Shops run their operations a number of different ways, but nowhere are these variances more arguably pronounced

than in detailing work, which some shops enthusiastically embrace while others consider simply a necessary part of the job. Regardless of where you stand, there are two important factors to keep in mind about this work.

One, it can differentiate you from the competition. An exceptional, professionally-detailed vehicle always stands out and can help attract new or return business. Two, with the possible exception of painting, no other part of your business receives as many regular product upgrades and opportunities. Product

manufacturers roll out arsenals of new products, some professional-grade not available to the general public. While these updates may cost a bit in investment, the added expenses quite often are offset by savings in resources (water, product, time, etc.) that can put more money back in your pockets.

Here's a look at some of the latest detailing products you should consider both to put a boost in your bottom line and put a bigger smile on the faces of your customers.

A note on safety: With the nation

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still in the grips of a serious pandemic, it should go without saying that your detailers should be wearing the proper personal protection equipment (PPE). Gloves, masks and the use of disinfectants will protect your employees, customers and their friends and families.

Exterior work

Turn up the pressure. If you're still using a regular water hose to spray down and rinse vehicles, you're probably wasting lots of water and adding a lot of unnecessary time and effort to the job. It's time to seriously consider a pressure washing system. Pressure washers are the single best solution for removing grime and other contaminants. Since they remove a great bit of the outlying dirt and dust on a vehicle, they'll save time during the wash. If you have an older model, consider upgrading to something newer that can deliver a better spray, along with other options, such as the ability to apply foamed soap. Tip: Look for models that provide a suitable length of power cord and spraying wand to help you negotiate comfortably around vehicles in your detailing bay.

Get underneath the problem. No doubt as a first-time vehicle owner who did your own detailing at home or in a DIY bay, you bemoaned your inability to effectively spray the underside of a car. In cold weather states, road salt and sand can embed themselves in places that are nearly impossible to reach, as can tar and other contaminants during the summer. Automated car washes responded with undercarriage spraying and cleaning. You can bring this technology into your shop without having to use a lift by investing in an undercarriage cleaner.

These tools, which feature wheels so that they can be rolled under a vehicle, connect to your spraying equipment and allow you to fully spray the undercarriage with soap and water. Some

even provide spraying pressure over 3000 psi to knock loose even the most stubborn contaminants.

Target the wheels. How would you look if you got decked out in your best new suit and then pulled on a dirty pair of work boots? That's

exactly how a vehicle appears when a beautifully-repaired, shiny exterior sits atop fading, rusting wheels and tires that have gone through a quick cleaning. Even if the tires and wheels are newer, that same quick wash won't restore them to the same level that a proper detailing job would — the kind of level a professional detailing should feature.

Upgrade your wheel work with a set of wheel brushes that will allow you to scrub throughout the wheel area, even in the small nooks around the lug nuts, and back into the brake calipers. Then, incorporate several other products. Start with your high-pressure washer since it will remove the first level of grime and grease. In fact, these sprayers are arguably the only tools that can provide this level of cleaning.

Next, wash the vehicle with automotive soap and rinse. Then, and this can't be stressed enough, apply a specialty wheel cleaner designed to remove brake dust and other contaminants. Allow the product to sit as long as the instructions indicate. Use your brushes to thoroughly clean every part of the wheel area.

This is also a good point to apply a specialty tire cleaner. Use a brush to apply and follow the cleaner directions for proper application times.

While you're cleaning the wheels



PHOTO: GM MEDIA

VEHICLES ROLLING OUT OF YOUR DETAILING DEPARTMENT

don't have to look like SEMA concept vehicles. The latest product offerings can help you give customers something just as memorable.

and tires, don't forget about the wheel wells. Even if the wheel well area isn't exposed as it might be on a lifted truck, it still shows. Beyond that, wheel wells can trap dirt and contaminants that can drip onto a clean tire, along with contributing to corrosion. Clean them as you would the wheels, once again with a brush, sprayer and auto soap.

When the entire wheel area is clean, give it a good final blast with the high-pressure sprayer and apply protectants to the tires, wheels and wheel wells (there are new products engineered specifically for the wells). While this process may seem to entail a lot of extra work, it really doesn't. The combination of high-pressure spraying, brushes and cleaners can do a phenomenal job while adding just minutes to the work time of each tire.

Add a foam volcano. Many high-pressure washer systems include accessories for spraying automotive soap. Even if yours does, consider buying a separate foam cannon or gun. These products quickly and efficiently cover a vehicle in a foamy cleaning solution, making it easier to clean with a sponge. Along with that, they drive cleaner into areas and crevices that can't be reached by brush or hand. They can be a bit pricey, but you'll get better use out of your soap and cut cleaning times.

Note that there's a significant difference between the cannon and gun. The cannon, as its name indicates, is far more powerful and typically uses compressed air while the gun usually connects to a water hose and doesn't produce the same amount of foam. What's nice about some of these products is that they can be used on interiors as well (more on this shortly).

Invest in a high-quality automotive soap. Detailing has always been an area where shops can be penny wise and pound foolish. Paying for the most affordable auto detailing soap might make some financial sense, but investing a little more or looking into other options can provide significant benefits. Newer soaps help prevent streaks and swirls and are pH balanced so they won't dry out vinyl and other materials that you otherwise might need to spend extra time restoring.

Interiors

Detailers can be forgiven if they believe auto designers and consumers are in a never-ending battle with them. Designers continue packing vehicles with every sort of electronic and other accessory that must be cleaned around. Consumers continue "living out" their lives every way possible in their vehicles, turning them into mobile cafes, coffee shops, work stations, kid zones and pet haulers. OEMs have responded with fabric protectors that do a good job of repelling most spills, but holding back a never-ending wave of coffee, juice, grease, etc. spills is a losing proposition.

Once again, detailing providers have updated their product lines with great solutions that also are quite affordable.

Get the attachments. Shop vacs are fine for sweeping up practically everything that can be dropped onto an interior, but often they need a little help. If you're using the same attachment to clean the entire interior, you're missing a lot of dust and dirt. Instead, purchase a

set of attachments and brushes that can fit into all areas, every nook of the vehicles, especially around vents and electronics where dust can settle. A couple of extra dollars and minutes spent here make a noticeable difference and cut down on the time you'll spend cleaning up by hand.

Put water to work. Many foam cannon/guns also are designed for interior cleaning. This is a nice extra since the best way to clean carpets and fabrics is with water (particularly hot water) and soap. Foam cannons/guns frequently promise to dry in just seconds after application.

Hot water extractors are great alternatives. In cases where stains are worn in or run deeply into carpeting, they can be the best option. Regardless of how you clean with water, don't forget to target the pedals and the entire driver foot area. This is where detailers can practically destroy the impression many have so far created. Imagine being a vehicle owner looking into a freshly repaired and detailed vehicle only to notice that above the paper floor mats the gas and brake pedals have dirt ground into them. Use your brushes, water equipment and a little effort to work out this issue. Note that there are now cleaners designed for pedals that will dry without leaving a slick coating.

Knock the smell out. Even after a vehicle interior has been thoroughly cleaned, the interior may not smell clean. Odors from smoke and contaminants spread via the vehicle climate system, along with pet and people smells and mold and mildew, can linger after the vehicle has been cleaned. Some shops try to compensate with the traditional hanging air freshener. Don't be these shops. Turn again to the latest detailing technology — for example,



PHOTO: MEGUIARS

DETAILING PRODUCTS CAN HELP YOU

CUT WORK TIMES and costs in some cases by performing multiple tasks at once — such as cleaning and deodorizing.

cleaners with deodorizing agents, chlorine dioxide products and odor "bombs." These products can be applied directly to the interior or, in some cases, circulated through the climate system.

Important to note — don't wait to address odor issues until after the interior is cleaned. Many of these products should be used as you clean. Some interior cleaners provide deodorizing properties to knock out bad smells as they remove stains. Once these products have done their job and the vehicle smells as great as it looks, then you can turn to a friendly hanging freshener (maybe even one that advertises your shop).

Of course, the benefits provided by any of these products can be upsold to customers as part of a detailing package. That's the beauty of detailing. It's a very necessary part of your business that can be incorporated and marketed any number of ways. With detailing companies evolving their offerings every year, you can change, grow and build revenue with them. Appearances matter. ■



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HOLOLENS CONNECTS TECHS WITH REMOTE EXPERTS

MERCEDES-BENZ USA'S VIRTUAL REMOTE SUPPORT USES MICROSOFT HOLOLENS 2 TO ENHANCE EFFICIENCY AND PRODUCTIVITY

JAY SICHT // Contributing Editor

When the *Iron Man* movie came out in 2008, Tony Stark's holographic computer seemed to be far in the future. With a wave of his hands, our protagonist could rapidly grab and scroll through holographic data screens seemingly floating at arm's length. It's not just the stuff of fiction anymore.

In September, Mercedes-Benz announced the nationwide rollout to its 383 U.S. dealerships of the industry's first mixed reality automotive maintenance system, Mercedes-Benz Virtual Remote Support. Developed in partnership with Microsoft and piloted in 13 dealerships, it uses the tech company's HoloLens 2 headset and Dynamics 365 Remote Assist software.

The system allows onsite dealership technicians to work hands-free, sharing real-time views and sounds of the vehicle while talking with Mercedes-Benz technical specialists in Jacksonville, Fla. Mercedes-Benz describes the technology as an "immersive experience where they both can view intricate 3D images and holograms, see where changes need



MICROSOFT'S HOLOLENS 2 is worn by the dealership technician and shares real-time views and sounds of the vehicle while talking with Mercedes-Benz technical specialists.

to be made, annotate the visual information, add documents, insert arrows, circles and more, all to highlight areas on which to focus."

Prior to the system's introduction, after exhausting onsite resources, a dealership technician would call a remote specialist, but if further assistance was required for a particularly complex issue, it would sometimes require an onsite visit, and of course a wait.

Those in the pilot program reported a "dramatic reduction in wait times for technical assistance," according to the

company. Additionally, the launch of the technology comes at a time when social distancing is encouraged and travel is minimized.

"This is a massive shift in the way we do business — helping us to serve our customers more quickly — and is especially timely with the new realities of COVID-19 and our desire to keep employees safe," said Christian Treiber, Vice President of Customer Services at MBUSA. "Today's vehicles feature more than 100 million lines of software code. Through our partnership with Microsoft,

we have a new paradigm for technology support and communication that helps our dealers and technicians master the complexity of these vehicles while eliminating travel time and onsite visits. It's like having an expert on your shoulder."

A spokesperson for Microsoft Azure Edge Communications – IoT & Mixed Reality, said the HoloLens 2 was designed to "provide an experience as innate to humans as possible. Interaction models for HoloLens 2 include voice control, direct hand manipulation and gaze."

Microsoft's HoloLens 2 and Dynamics 365 have been used together in a number of industries to allow an onsite technician to consult a remote expert. The quality of the images displayed on the technician's headset depend on the brightness of ambient lighting and even the user's eye calibration, and the content displayed.

The HoloLens 2 headsets used for Mercedes-Benz Virtual Remote Support can also be used by dealership technicians while they are not engaged in live troubleshooting with a Mercedes-Benz USA field technical specialist. Technicians can download images, schematics and repair instructions to the HoloLens 2, which are then projected in 2D onto the headset.

Technology has applications for collision repair

The most common application of the technology is for mechanical problems, but there are cases for its use in collision repair, too.

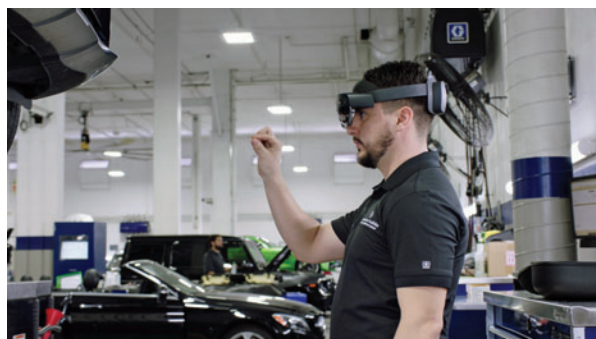
"The HoloLens 2 headsets used for Mercedes-Benz Virtual Remote Support allow our field specialists to annotate the live image in front of a technician's eyes," said a spokesperson for the Mercedes-Benz USA Engineering Services Team. "This makes the HoloLens 2 particularly useful in the identification of hard-to-find sensors or wiring, along with any visible trouble areas in the repair area.

"For example, if there are two similarly designed sensors located in close proximity, our field specialists can circle the correct sensor to address. The HoloLens 2's live imaging can also allow our field specialists to perform up-close visual inspections of worn parts such as wiring harnesses to determine if a replacement is warranted. For a disassembled transmission, it can be used to determine what may be causing a malfunction or even to forensically diagnose the cause of a bearing failure."

For collision repair, the primary use of the technology is for field technical specialists to visually diagnose any repair issues arising from a collision, including collaborating on complex diagnostics.

"However, there have also been instances where our specialists have used the HoloLens 2 headsets to guide a technician through an uncommon body repair. For example, one of our field technical specialists in Jacksonville provided live, step-by-step, guidance to help a dealership technician through the tricky process of removing and replacing a damaged ground stud, which involved carefully cutting the damaged stud from the car and welding in a new part."

Although the company spokesperson would not comment on whether the technology would in the future be offered to independent repairers, such



THE HOLOLENS 2 CONSISTS of a camera, microphone and speakers. It also projects images in front of the wearer's headset. These can be sent from the remote expert, such as a wiring diagram, or the remote expert can take a snapshot of the technician's view and insert an arrow or circle to direct the technician's attention to that problem area.



THE TWO PROJECTED SCREENS are what the dealership technician sees, including the left-hand screen showing the active call and options, and a screen on the right displaying, as the example shows, a wiring schematic.

as Mercedes-Benz Certified Collision Centers, the company does foresee other uses for it.

"In the short term, Mercedes-Benz Virtual Remote Support will be used to provide remote support and training to Mercedes-Benz service technicians working at dealerships. Looking ahead, we will continue to seek opportunities to integrate mixed reality into our business landscape, potentially leveraging it for training and peer-to-peer collaboration." ■



JAY SIGHT has worked in a number of roles in the automotive aftermarket for more than 25 years. Based in Columbia, Mo., he has covered all industry segments of the business as a writer and editor for 15 of those years.

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DIAGNOSING NVH ON TODAY'S CARS

TODAY'S MECHANIZED WORLD REQUIRES POWER MOVEMENT FROM ONE SOURCE TO ANOTHER, AND WITH THAT COMES VIBRATION AND SOUND

BERNIE THOMPSON //

Contributing Editor

Vibration and sound are the same in that they are both frequencies. When we consider vibration, it is a frequency that is moving through a mechanical means that produces mechanical force. When we consider sound, it is a vibrating frequency that is moving through air or another medium and can be heard when it reaches a person's ear or a sensing device (such as a microphone).

All power or energy transmission through mechanical means produces vibration and sound. This fundamental principle will be important when dealing with vehicle vibration and sound issues. Now that we have established that all vehicles will produce vibration and sound, it is imperative to understand the difference between vibration and harshness, and the difference between sound and noise.

Noise vibration and harshness (NVH) has become an ever-increasing problem for engineering teams on modern vehicles. The modern vehicle is designed and engineered to reduce vibration and sound within the vehicle. Therefore any additional vibration and/or noise is much easier for the vehicle occupants to recognize.

Cross Section Width
(Millimeters)

Aspect Ratio
(Height/Width)

Wheel Diameter
(Inches)

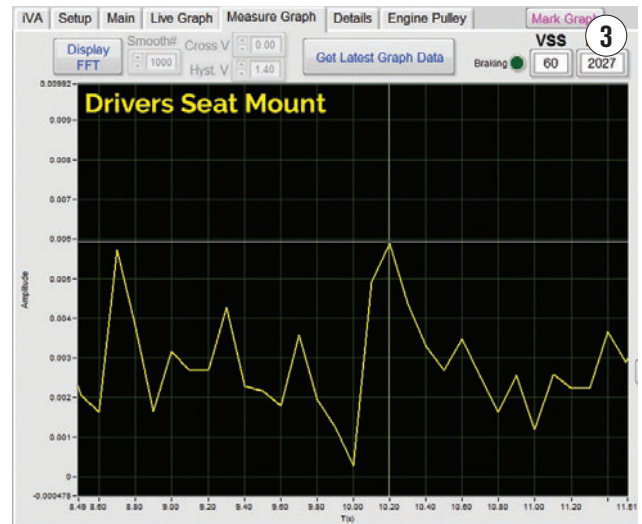
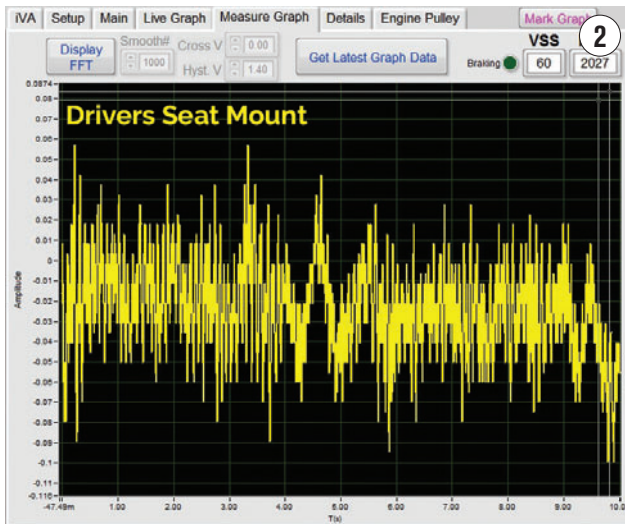


1

In order to calculate the circumference of the tire take the width of the tire x the height of the tire; $285 \times 75 = 21375$. Take the sum and divide it by 2540; $21375 / 2540 = 8.41$. Now take the sum and multiple it by 2; $8.41 \times 2 = 16.83$. Then add the wheel diameter to the sum; $16.83 + 16 = 32.83$ Inch tire diameter. Now multiple the sum by π ; $32.83 \times 3.1416 = 103.13$ inches of tire circumference.

The modern vehicle comes in many sizes and weight categories. Therefore, the vibration and noise from each ve-

hicle will be different. For example, a luxury sedan's vibration and/or noise concern would be much less than a 1



ton truck's vibration and/or noise concern. Each vehicle has a different design target for what vibration and noise level is acceptable. So first, one needs to know what is normal for the vehicle that is being diagnosed. That being said, most vehicles that are brought to you to diagnose have a definite vibration and/or noise issue.

It has long been known that rotating components can produce unwanted vibrations. When these vibrations are produced by components within a vehicle, it can be very difficult to determine where the vibrations are emanating from. Vehicles contain many rotating components — for example: tires, wheels, hubs, rotors, drums, axle shafts, driveshafts, transmissions, differentials, pumps, generators and engines, just to name a few. These components are balanced to assure that they will not create vibrations. However from either imbalance, wear or poor design, vibrations can (and will) be present in vehicles. The question is how to locate the cause of the issue?

The scientific approach to vibration analysis

Perhaps the best method to locate these vibrations is to have an in-depth understanding of how these vibrations and/or noise issues are produced. To under-

stand this, we need to understand what components on the vehicle are in rotation and the speed at which they are rotating. So first let's take a look at the tire/wheel rotational speed. Tires have their size coded into the tire sidewall. For example, a tire that is 285/75/R16; 285 indicates the width, /75 indicates the height, /R16 indicates the wheel diameter (in inches). The circumference of this tire will need to be calculated to know the tire's rotational speed. The equations to calculate this are shown, but please don't get caught up in the math — just the idea (**Figure 1**).

With the tire circumference known, you can calculate the tire/wheel rotation speed. There are 63,360 inches in a mile, so divide the inches in a mile by the tire circumference; $63,360/103.13 = 614.37$. Take the sum and multiply it by the vehicle speed; tire's revolution per miles $614.37 \times 60 \text{ MPH} = 36,862$ revolution per hour. There are 3,600 seconds in one hour, so divide the tire revolutions per hour by 3,600; $36,862/3,600 = 10.23$ tire rotations per second or 10.23 Hz of tire rotational rate. To calculate the tire's Revolution Per Minute (RPM); $10.23 \text{ Hz} \times 60 \text{ sec} = 614 \text{ Tire RPM}$.

Now that you have a rate of a rotating component (the tire and wheel), how would you use this? At 60 MPH

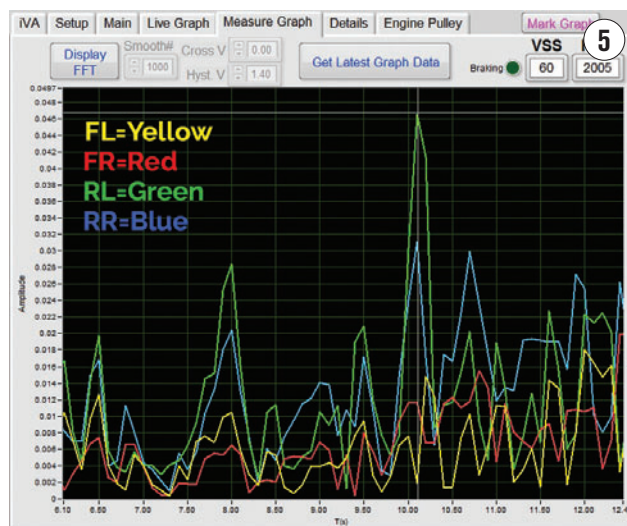
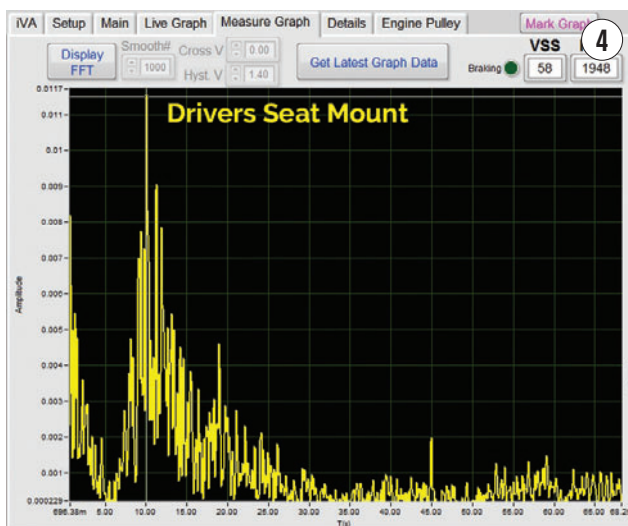
the tire and wheel produced 10.23 rotations per second. Now that this quantity is known, you will need a way of measuring the vibration. Vibration is the amount that a frequency is moving through a mechanical means that produces mechanical force.

The frequency of the tire at 60 MPH is 10.23 Hz, so the measurement will need to test the force that is present at this frequency.

Vibration is mechanical force-creating frequency

To test the force, we will need a sensor that can provide such a measurement. Accelerometers are one such sensor that can read mechanical force. An accelerometer is a very sensitive device that can measure proper acceleration. Proper acceleration is the acceleration or the rate that an object changed its velocity. For example, an accelerometer at rest on the surface of the Earth will measure an acceleration due to the Earth's gravity.

Typical accelerometers are made up of multiple axes (two, to determine most two-dimensional movement with the option of a third, for three-dimensional [3D] positioning). Accelerometers used for NVH are 3D and can read force in three planes of movement (X, Y and Z).



With an X-Y-Z coordinate system, the X axis would go from front to back, the Y axis would go from left to right, and the Z axis would go from up to down.

With an accelerometer mounted to the vehicle, and a way in which to monitor the X-Y-Z planes, the tire/wheel forces can be calculated. The accelerometer will read the forces that are present from where the device is mounted. Let's say the accelerometer is mounted on the driver seat mounting bracket. In this position, the sensor would read the forces that a driver might feel (**Figure 2**). This data is being monitored with a Personal Computer (PC) and an Analog to Digital Converter (ADC). An ADC is what a multimeter and/or oscilloscope use to read the voltage levels with.

The accelerometer data is showing the movement of the sensor and since it is attached to the vehicle, this shows each movement of the vehicle. More to the point, in this configuration, the data shows the repetitious movement of the vehicle. So if a tire/wheel assembly is out of balance, it will produce a repetitious movement at the rate of the tire/wheel's rotational speed. Which, in this example, is 10.23 Hz.

Decoding the secret message

When analyzing this waveform, it be-

comes clear that it is very hard, if not impossible, for us to determine what the frequency of the movement would be. Therefore, we will need an algorithm to unlock the frequency from this accelerometer's output data. This algorithm is referred to as "Fast Fourier Transform" (FFT). Fourier analysis converts a signal from its original domain, which in this case is the mechanical movement in time, to a representation in the frequency domain in Hz. Since in this example we know the tire/wheel assembly is rotating at 10.23 Hz, if we convert this accelerometer data to find the repetitious movement we can compare this data's output at 10.23 Hz, as shown (**Figures 3, 4**). In **Figure 3**, the tires are in balance. In **Figure 4**, a tire is out of balance.

This vehicle is moving at 60 MPH in both **Figures 3** and **4**. The lower horizontal scale indicates the Hz; the vertical scale to the left indicates the amplitude. So we need to locate the 10 Hz position on the lower scale. Now find the amplitude on the scale to the left. It is clear the amplitude in **Figure 4** is much higher than the amplitude in **Figure 3**. This is the difference between vibration and harshness. **Figure 3** shows vibration (remember that all vehicles produce vibration). But **Figure**

4 shows harshness. This is a vibration that has exceeded the manufacturer's design threshold. This is excessive vibration that is recognized by the vehicle's occupants.

The problem with this accelerometer's location is that we now know that a tire/wheel assembly is exhibiting a harness problem, but which wheel? So basically, this is no better than a good technician, for a good technician can feel this vibration's frequency and determine if it is at the tire/wheel rotational speed. What one needs to know is which tire/wheel assembly is creating the vibration. For this to occur, we will need to change where the accelerometer is mounted. If we mount the accelerometer at each suspension component for each tire/wheel assembly we can quickly determine which tire/wheel assemblies are creating the vibration and harshness problem. The RL (green trace) has a higher amplitude than the other traces, this indicates that the RL is creating the vibration (**Figure 5**).

In this example, there are four accelerometers in place (one at each tire/wheel suspension component). The data is acquired simultaneously. This is important because during a harshness problem the entire vehicle

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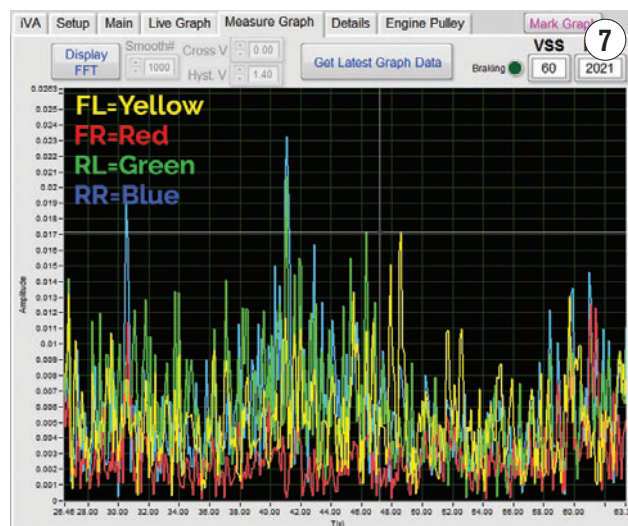
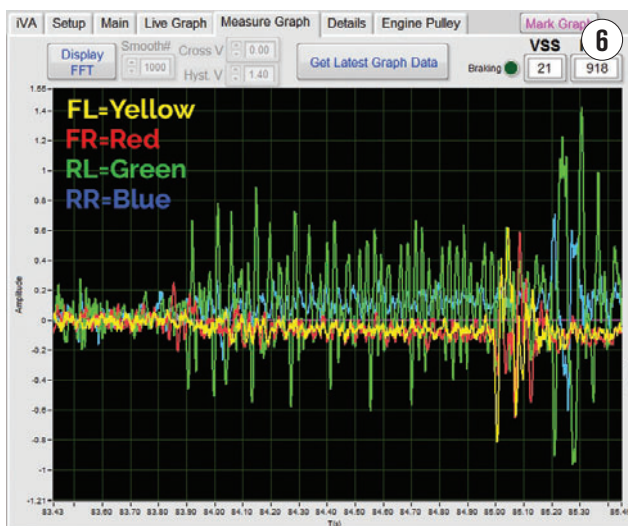
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is vibrating. All the vibration sensors will need to be monitored at the same time and compared to each other. If only one sensor is used at a time, it will be very hard to determine which tire/wheel assembly is creating the vibration. For example, on a solid axle assembly, a vibration on either side creates the entire solid axle to vibrate. You will need a sensor on each end of the axle to determine which sensor has the greatest amplitude. This, in turn, allows you to determine which of the tire/wheel assemblies are creating the vibration. Therefore, to analyze where the vibration is being emitted from on a vehicle, one will need an accelerometer on each of the suspension corners: Front Left (FL), Front Right (FR), Rear Left (RL) and Rear Right (RR).

With this accelerometer configuration, brake vibrations can also be isolated to the brake component that created it. When the vehicle is braking and the vibration is felt, capture the data. You will find the brake that is creating the vibration will have an amplitude greater than the other brakes. The RL (green) brake is the one creating the vibration during a brake application (Figure 6).

To find driveshaft vibration, one will need to calculate the driveshaft rota-

tional speed. To accomplish this, one will need to know the ring and pinion ratio. Since the tire/wheel assembly is connected mechanically to the ring gear carrier, the ring gear is rotating at the same speed as the tire/wheel assembly. Therefore, if the ring and pinion ratio is known, and the tire/wheel speed is known, then one would simply multiply the tire speed by the ring and pinion ratio.

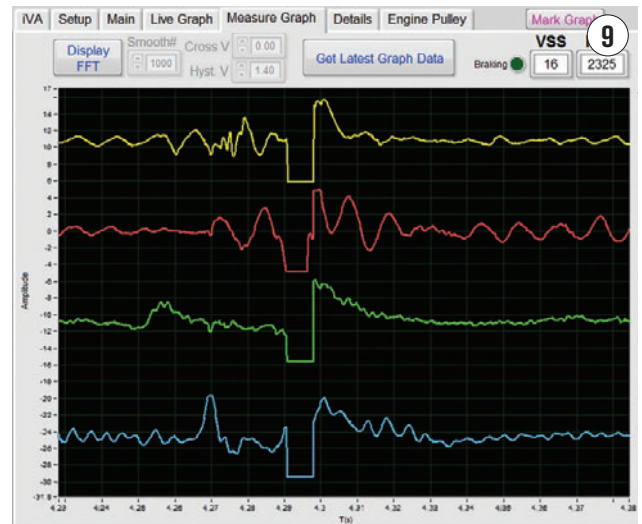
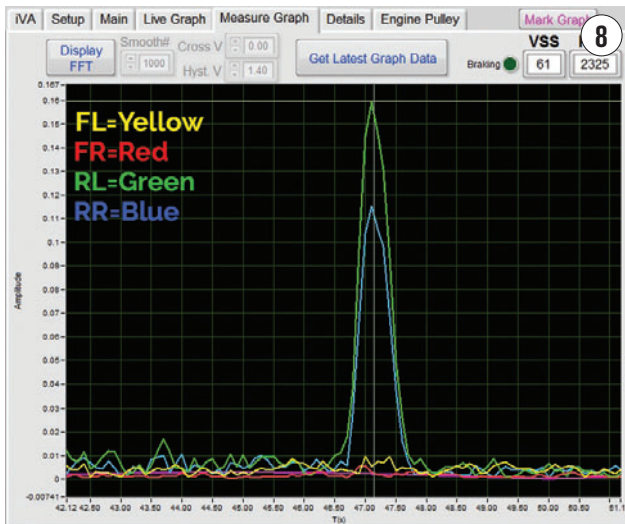
So if the tire speed is 10.23 Hz and the ring and pinion ratio is 4.56 to 1; $10.23 \text{ Hz} \times 4.56 = 46.64 \text{ Hz}$ driveshaft rotational speed. This shows that on this vehicle the driveshaft rotates 4.56 times for each tire/wheel rotation.

Now that we have the drive shaft rotational speed in "Hz," we can check the data acquired from the accelerometer, with the FFT (Figures 7 and 8). This vehicle is moving at 60 MPH in both Figures 8 and 9. The lower horizontal scale indicates the Hz; the vertical scale to the left indicates the amplitude. So we need to locate the 47 Hz position on the lower horizontal scale. Now find the amplitude on the vertical scale to the left. It is clear the amplitude in Figure 8 is much higher than the amplitude in Figure 7. This is the difference between vibration and harshness. Figure 7 shows vibration;

remember that all vehicles produce vibration. Figure 8 shows harshness; this is a vibration that has exceeded the manufacturer's design threshold. This is excessive vibration that is recognized by the vehicle's occupants.

The data in Figure 7 and 8 was taken on a 4-wheel drive with two drive shafts, one to the front differential and one to the rear differential. When analyzing the data, note that the accelerometers on the RL and RR are much greater in amplitude than the accelerometers on the FL and FR. This indicates that the rear driveshaft is the cause of the vibration. Be aware: if only one accelerometer were used on the driver seat mounting rail, you would be unable to determine which driveshaft was causing the vibration and harshness problem, only that the vibration was at driveshaft speed.

To determine an engine vibration problem, the RPM will need to be converted to revolution per second. This is done by dividing the RPM by 60 seconds. So if the RPM is 800; $800 \text{ RPM} / 60 \text{ seconds} = 13.33 \text{ Hz}$. If an accelerometer is placed on the engine and other accelerometers are placed next to each engine mount on the frame or supporting structure, a bad mount can be determined. The engine mounts are designed



to absorb vibration from the engine. For example, if the engine vibration has an amplitude of 16 (at 13 Hz), then the other accelerometers should read less than half of the engine amplitude, or about the amplitude of 8. This would show that the engine mounts are absorbing the engine's vibration. If the accelerometer next to the mount is reading about the same as the engine, the mount is bad or is in a bind where it cannot work correctly. To determine if the engine has excessive vibration or a misfire, raise the RPM of the engine. If the vibration goes away, suspect a misfire; if the vibration gets worse when revving the engine, suspect a balance problem.

Additionally, one of the driven components on the engine can cause a vibration, as well. If the diameter of the pulleys is known, then one can calculate the rotational speed of each pulley. With the accelerometer mounted on the engine, the output data from the accelerometer can be processed with the FFT. Now each component can be monitored at its rotational speed. If there is a problem, the amplitude at the pulley's Hz-output is the component that is creating the vibration. If the engine is creating the vibration, the rotational speed of the engine (in Hz) will produce the greatest amplitude at that Hz reading.

Like the sound of this so far?

Sounds are part of a vehicle's normal operation. When these sounds become loud enough that the occupants can distinguish them from normal operation, then this is noise. The origin of this noise can be very difficult to locate. Perhaps one of the most difficult sounds to isolate is a suspension chassis pop. For instance, this can occur when hitting road bumps or when the vehicle is pulling into a driveway. When the pop occurs, the sound travels throughout the vehicle. When listening for this noise, it can usually be isolated to a corner of the suspension, but it seems as though all the components on the suspension corner are making the same popping noise.

When these popping noises occur, it is much easier to find the origin of the popping sound by using microphones. However, if one were to listen to these microphones, one would still be unable to determine the origin of the noise. For when this popping noise occurs, it emanates through all the components. This is due to all the components being connected, and sound travels through metal easier than it does through air. Metal is denser than air, which allows the sound vibration to travel at a faster rate through metals or solids. However, if

one were to graph the microphone's output, it becomes much easier to identify the origin of the pop (**Figure 9**). There are four microphones attached to the vehicle's suspension system. The yellow trace is connected to the lower ball joint; the red trace is connected to the strut; the green trace is connected to the tie rod; the blue trace is connected to the strut top. The sound is emitting from the component that rings out like a bell. This can be seen on the red trace and indicates that the strut is creating the popping sound.

NVH systems will automatically do the calculations for you, so don't worry — you won't have to be a mathematician. If you can enter basic information (such as the tire size) you can become proficient in quickly finding vibration and noise issues. The vehicles that have these type problems are money makers for your shop, so don't pass these jobs up. With the right NVH system, these problems are quite easy to solve. 📡



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Stratification, discrimination in the collision industry

Treating all collision shops equally is no longer fair

Think back to your middle school science class. Picture staring at a graduated cylinder filled with a mystery concoction. As time passes, different densities emerge from the emulsion, stratifying into distinguishable layers with unique attributes. The lesson teaches about densities and creates awareness based upon observations. This forms a foundation for greater learning in the future.

The collision industry is really the emulsion inside the graduated cylinder. For many years, insurers and information providers treated repairers as a homogeneous group of equals. Yet over time, just like the science lesson, the emulsion of the industry began to separate and stratify into identifiable layers. Cycle time, training, tooling, OEM certification and advanced substrate specialization began to define the layers in the industry. This is when the opportunity began.

2020 has been a year for civil movements and the fight for equality and equity in our nation. In the context of the collision industry, treating all shops the same would appear to be a major victory. But that is only half the battle. Treating all shops the same is no longer equitable; it is unfair. Insurers manage severity by comparing shops within a market to one another using a myriad of KPIs. These comparisons are healthy and have been the catalyst to improving cycle time and customer service to new levels. However, due to stratification, all shops are no longer equal, but KPIs assume total equality. This is where the inequality resides. A common KPI — average labor hours — is not equitable between repairers of different stratifications.

Comparing a shop that does not participate in I-CAR Gold Class or other more advanced training to a shop that is OEM trained, certified and audited for procedural compliance is like comparing apples to zucchini. Insurers have every right to manage severity. However, the KPI of average labor hours is blind to diversity. Average labor hours rewards shops for skipping or subletting calibrations and inspections and punishes shops who train and equip to perform these operations



THE KPI OF AVERAGE LABOR HOURS REWARDS SHOPS FOR SKIPPING OR SUBLETTING CALIBRATIONS AND INSPECTIONS.

in-house, saving insurers time and money. The discrimination occurs during performance reviews with insurers when the shop that performs calibrations and inspections in-house is scored lower, put on probation or has referral capacity reduced as a corrective action for choosing not to sublet work. Another inequitable KPI tracks the number of manual line entries on an estimate. This can also result in unfavorable reviews from insurers for doing the right thing.

All information provider databases are designed to be used as guides only when preparing an estimate. Each repair is possibly unique and dependent upon the repairer's commitments and business decisions as to how many manual line entries are required to document the complete repair. Again, stratification in the industry matters, but it is not acknowledged during insurance performance reviews. Shops that only add manual line entries for basic operations like retaping moldings and freight are not competing within the same

stratification as shops that are performing OEM-certified levels of repairs. OEM inspections, ADAS calibrations, initializations and other emerging operations have limited availability in databases. These additional repair considerations are causing friction during performance reviews. Repairers that perform complete repairs are again viewed negatively by being treated as equals.

Equality is not equity. What is right for one is not right for all. The collision industry is at the early stages of awakening to disparities present in performance reviews from insurers and KPIs provided by the big data aggregators. It is through mindful observation of the stratification occurring in our industry that the greatest lessons can be learned and KPIs, surveys and other severity control methods can be re-engineered to become more targeted, more equitable and more effective going forward. ■

WILL LATUFF is a manager of Latuff Brothers Auto Body in St. Paul, Minn. He is an active member of AASP-MN, participating on the board of directors as well as serving as AASP-MN Collision Division director. wlatuff@latuffbrothers.com



2020 is Finally Done. But We Never Stopped.

Thank you to all the technicians, managers and employees that kept working in body shops around the world during these unprecedented times. We want to thank the entire Pro Spot International staff and Distributors as well. When the world came to a stand still, they were there and ready to help out in any way they could. 2020 has not stopped us from providing the collision repair industry with the best equipment and service possible.

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