

OCTOBER 2022

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If seeing is believing, then there's no doubting the power of aftermarket light bars. An industry staple that's keeping up with the times, these powerful units continue to receive glowing reviews from shop owners and drivers alike. See article on page 56. (Photo courtesy of HELLA)



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## Auto Shows & Events Bounce Back

**W**hether it's an industry trade show, your city's annual new vehicle showcase or a simple cars and coffee event at the local burger joint, auto shows are a great place for specialty aftermarket shops to meet potential customers and show off their skills.

Two years ago, the pandemic brought the car show industry to a screeching halt. Empirical evidence and a new study from Foresight Research, however, reveal that events are bouncing back in a big way.

Following the successful return of in-person industry gatherings such as the SEMA and PRI shows late in 2021, millions of America's car shoppers headed back to their local new car shows this year, according to the recently published

Foresight Research 2021-22 U.S. Auto Show Season Attendance Report.

Even though 21 shows have not yet resumed, according to the report, half of pre-pandemic national attendance has already been recovered.

"COVID-19 continues to impact auto shows as the top barrier to attendance, most notably among older consumers. But the data shows that many new vehicle shoppers were eager to return to their local auto show, and did," says Christopher Stommel, Foresight Research president. "Foresight Research reports seeing more 12-month intenders, longer dwell times and more engaged shopping. Consumers have a lot of auto industry developments they needed to catch up on from (the past) two years."

Among the developments is the new car industry's rapid transition toward electrification. While consumer acceptance of electrics is rising, industry experts agree that a sizeable gap remains.

Proponents believe the most effective way to build acceptance is through direct, hands-on consumer interaction with EVs.

"Auto shows play a significant role by supplying a larger concentration of in-market and motivated new vehicle buyers than other experiential events out there," Stommel adds. "Three-out-of-four auto show visitors are more likely to buy a hybrid or full electric vehicle after attending a show."

Another key finding of the report is the negative consequences of brands not exhibiting at auto shows, he continues.

"People notice when their own brand—or preferred next brand—is not there," Stommel says. "This is leading to lower brand opinion and purchase likelihood, since when a show visitor can't find a brand on the floor, they don't just turn around and leave; they take another look at the competition."

Increasingly, these shoppers are finding suitable alternatives from other manufacturers, as research shows a 50% increase in brand additions happening on show floors from just a few years ago.

Meanwhile, for more on industry events, check out Ron Knoch's report on the 2022 DIESEL Motorsports season on page 36, and Barry Alt's SEMA Show primer on page 90. **TS**

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Space Campers has created a customizable wedge-style camper for Tesla's sharp-edge Cybertruck. (Photo courtesy Space Campers)

# EV ROUNDUP

Recent happenings in the everchanging world of electric cars.

Things are happening quickly in the world of electric vehicles. Here's a look at some recent EV news of importance to aftermarket shops.

## EV GENERATION GAP

If it seems like the number of electric vehicles on the road is lower than the number of people who say they support them, that's because it's true. And when your shop will begin to see an influx of battery electric vehicles (BEVs) may depend on the age of your core customers.

Against a backdrop of skyrocketing gas prices, ongoing concerns about climate change and a push by the auto industry to launch more electric models, consumer interest in BEVs is also on the rise. According to the recent Ipsos Mobility Navigator Study, almost one-half of potential buyers in the U.S. say they will consider a fully electric vehicle for their next purchase.

That's an increase of almost 400% since 2018, when only 13% indicated they would consider a BEV for their next purchase.

Despite the surge in consumer interest, however, sales of fully electric vehicles remain a very small part of the overall light vehicle market. According to recent vehicle sales data obtained from Marklines, battery electric vehicles made up just 5% of light vehicle sales in the first quarter of 2022, despite volume being up over 70% from the same quarter in 2021.

And, even with high-profile launches of electric vehicle models from traditional automakers, Tesla remains the dominant force in EVs: its share of battery electric vehicle sales actually increased from 70% in the first quarter of 2021 to 76% in the first quarter of 2022 (though other studies predict the company could lose around 25% of its market share by 2025).

Questions abound. Why aren't EV sales higher? And why can't traditional brands close the gap with Tesla?

Insights from the 2022 Mobility Navigator Study suggest a dramatic difference in how older buyers view EVs versus their younger counterparts.

Almost three-quarters of Generation Y/Z consumers say they are willing to consider a battery electric vehicle for their next purchase. In stark contrast, less than 30% of baby boomers share the same sentiment.

To complicate matters further, interest among Gen Y/Z buyers has actually grown more in the past three years than for boomers. In other words, the gap between younger and older buyers is widening.

Not surprisingly, this gap in interest is driven by very different perceptions about battery electric vehicles, particularly views about the overall cost of ownership. Most Gen Y/Z consumers (63%) agree that the overall cost of ownership for a BEV is less than for a traditional gas/diesel vehicle. Among boomers, only 24% feel the same way.

There are some areas where older and younger consumers share common ground



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regarding BEVs, including battery life, recharging time and range. These are the most common reasons both groups give for deciding not to purchase a BEV after considering one initially, and for avoiding BEVs altogether.

Boomers currently buy more new vehicles than Gen Y/Z shoppers. According to Statista.com, boomers represented 41% of light vehicle sales in 2020, while Gen Y/Z only represented 23%. Conversely, boomers make up only 7% of those that actually considered a BEV during their last new vehicle purchase, whereas Gen Y/Z represent two-thirds of that group.

Boomers also tend to be more likely to afford the higher prices of most of today's BEVs. According to Kelly Blue Book, the average transaction price for an electric vehicle is \$56,437—roughly \$10,000 higher than the overall industry average of \$46,329.

Ultimately, boomers have the potential to



be either a secret weapon or an Achilles heel for the more traditional auto brands as they try to shift their business to EVs. Because boomers are a large group of buyers with an affinity for more established, mainstream brands, converting them to the BEV cause could pay huge dividends.

On the other hand, if boomers remain BEV-resistant, brands that depend on them for a large chunk of their sales may face



an uphill battle in achieving an electrified future.

When your shop begins to see an influx of battery electric vehicles (BEVs) may depend on the age of your core customers, as baby boomers are far less inclined to own an electric vehicle than their Gen Y/Z counterparts.

## WHICH EVS ARE THE FASTEST?

It seems that interest in electric sports cars is accelerating worldwide, as searches for Sports EVs increased by 400% in the past year.

So, what is the fastest electric sports car on the market? The Porsche Taycan Turbo S has been revealed as the speediest electric sports car, scoring 9.64 out of 10 in the uswitch.com/ev-charging speed index.

The study by uswitch.com/ev-charging created a points-based index that determined the top 10 fastest electric sports cars on the market by evaluating two main factors, the acceleration speed (0-100 km/h seconds) and top speed of 55 sports EVs, resulting in a final speed score.

Porsche hit the top spot with the Taycan Turbo S, achieving an overall speed score of 9.64 out of 10. Taking just 2.8 seconds to

| Ranking | The Sports EV                       | Acceleration Speed 0-100 km/h (seconds) | Top Speed (mph) | Speed Score /10 |
|---------|-------------------------------------|---|-----------------|-----------------|
| 1       | Porsche Taycan Turbo S              | 2.8                                     | 162             | 9.64            |
| 2       | Tesla Model 3 Performance           | 3.3                                     | 162             | 9.55            |
| 3       | Audi e-tron GT RS                   | 3.3                                     | 155             | 9.38            |
| 4       | Kia EV6 GT                          | 3.5                                     | 162             | 9.29            |
| 5       | Mercedes EQS AMG 53 4MATIC+         | 3.6                                     | 155             | 9.20            |
| 6       | Polestar 2 Long Range Dual Motor    | 4.7                                     | 127             | 8.66            |
| 7       | Ford Mustang Mach-E GT              | 4.4                                     | 124             | 8.57            |
| 8       | Tesla Model Y Long Range Dual Motor | 5                                       | 135             | 8.49            |
| 9       | BMW iX xDrive 50                    | 4.9                                     | 124             | 8.48            |
| 10      | Jeep 1-Pace EV400                   | 4.8                                     | 124             | 8.31            |

reach 62 mph, the German Taycan Turbo S had the highest acceleration speed of all the cars analyzed.

Its top speed is 162 mph, matching the Tesla Model 3 Performance, but a 0.5-second difference in acceleration time (2.8 seconds for the Porsche; 3.3 seconds for the

Tesla) pushed it to the peak.

Tesla's Model 3 Performance was the second-fastest electric sports car, with an overall speed score of 9.55 out of 10. The EV has a top speed of 162 mph, equal to the Kia EV6 GT (fourth place) and goes from 0-100 km/h (62 mph) in 3.3 seconds.

The Tesla Model 3 Performance has a 78% increase in acceleration over its sister model the Tesla Model Y, which placed eighth.

The Audi e-tron GT RS came in third with an overall speed score of 9.38 out of 10. When it comes to acceleration speed, the Audi matches the Tesla Model 3, taking 3.3 seconds to reach 62 mph.

However, with a top speed of 155 mph, the e-tron GT RS (155mph) falls to third, as it's nearly 5% slower than the Model 3 Performance (162mph).



The fastest electric sports cars on the market are (left to right) the Porsche Taycan Turbo S, the Tesla Model 3 Performance and the Audi e-tron GT RS.





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## INTERIOR INNOVATION

EV advancements can sometimes spark innovation beyond the powertrain, as shown by the latest Ultrafabrics interior found in a new luxury concept vehicle.

Ultrafabrics recently announced a partnership with Tata Passenger Electric Mobility (TPEM), the electric vehicle (EV) subsidiary of global automobile manufacturing company Tata Motors. The latest collections from the animal-free, high-performance fabric specialist have been selected for the contemporary interior of TPEM's new AVINYA Concept.

Inspired by the colors and crafts of Tata Motors' Indian heritage, the end result is a warm and inviting interior, according to the company, featuring Ultrafabrics' Fusion Shimmer (Copperhead) and Volar Bio (Silverstone) materials. The outcome is a "feeling of space and tranquility—a piece of high-tech design that feels premium while connecting with our senses beautifully," says Nicole Meier, director of branding, Ultrafabrics.

Calling the AVINYA Concept "the epitome of modern luxury," Ultrafabrics contributed material innovations including renewable bio ingredients, specifically in Volar Bio.

"The combination of Fusion Shimmer and Volar Bio also provides a truly sensorial



Ultrafabrics has partnered with Tata Passenger Electric Mobility (TPEM), providing animal-free, high-performance fabrics for the contemporary interior of TPEM's new AVINYA Concept EV. (Photos courtesy Ultrafabrics)



experience, heightened by its superb haptic qualities," TPEM adds.

The overall aesthetic of the AVINYA Concept was designed with Global India and Indian Locality in mind, combining warm terracotta with light gray, says Kyeong Shim, head of colour material finish, Tata Motors.

"Using tactile materials, coupled with incense, has also created an environment that stimulates our senses in a subtle and comforting way," she adds. "For us, Ultrafabrics is the perfect partner, not only because of its ongoing mission to drive a more sustainable future, but also because of its product innovation through the use of renewable sources and responsible manufacturing."

Based on TPEM's GEN 3 architecture, the AVINYA Concept is a next-generation EV.

"While it introduces a new typology of mobility that liberates roominess and comfort, it also comes packed with new-age technology, software and artificial intelligence to deliver wellness and tranquility during transit," the company notes.

Features include a sky dome that "enhances the overall sense of space and natural light," sustainable materials and an aroma diffuser. It is expected to be introduced to the market by 2025.

## CYBERTRUCK CAMPER

With the latest reports stating production of Tesla's sharp-edge Cybertruck is set to begin early next year, it's never too early to

Space Campers offer limitless personalization opportunities for the Tesla Cybertruck. (Photo courtesy Space Campers)

get to work on overland accessories.

That includes a customizable wedge-style camper from California startup Space Campers.

Featuring aerospace-grade composites, the Space Camper is designed to seamlessly integrate with the Cybertruck, providing full access to the truck bed with minimal drag and a sleek appearance. Features include electrical outlets, dimmable lights, induction cooktop, portable cooler and water heater, all compatible with the Tesla battery pack for weeks of auxiliary camping power.

The Murphy-style bed is big enough for two and tucks out of the way for ample standing room with detachable hinges to become an exterior table. Bed extensions quickly transform into benches or work surfaces, and a built-in awning offers protection from the elements.

With a flip of a switch, air-powered actuators use the Cybertruck's onboard compressor to open or retract the camper with ease.

The company says the modular build opens the door for limitless personalization, including plug-and-play accessory kits that can be installed at any point down the road with household tools. Replacement parts will be available online for straightforward repairs.





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## CUMMINS ACQUIRES MERITOR

A familiar name in the performance diesel market, power company Cummins Inc. recently completed its acquisition of Meritor Inc., a global supplier of drivetrain, mobility, braking, aftermarket and electric powertrain solutions for commercial vehicle and industrial markets.

“The integration of Meritor’s people, products and capabilities in axle and brake technology will position Cummins as a leading provider of integrated powertrain solutions across internal combustion and electric power applications,” the company says in a release announcing the acquisition. “As demand for decarbonized solutions accelerates, ePowertrains will be a critical integration point within hybrid and electric drivetrains, creating packaging and performance differentiation and the opportunity to provide advanced clean mobility products for customers.”

Cummins plans to accelerate Meritor’s investment in electrification and integrating development within its New Power business, according to the company.

“We are excited to welcome Meritor’s employees into Cummins,” says Jennifer Rumsey, Cummins’ president and CEO.

“Together, Cummins and Meritor will move further and faster in developing economically viable decarbonized powertrain solutions that are better for people and our planet.”

## MCLAREN'S E-RACING COLLABORATION

In Saudi Arabia, smart city NEOM announced a strategic partnership with McLaren Racing to become the title partner of the McLaren Formula E and Extreme E racing teams, bringing two all-electric race series efforts together under the banner of NEOM McLaren Electric Racing.

McLaren will collaborate with NEOM across multiple areas, becoming a founding partner of OXAGON, an area in NEOM set to be a blueprint for the future of advanced and clean industries and a hub for innovation. McLaren will be located within OXAGON’s Research and Innovation Campus, which is being designed by international architects Grimshaw.

The campus will provide cutting-edge facilities and collaboration spaces, accelerating ideas from labs to market to develop industries and products of the future, according to the companies.

“Our partnership with McLaren Racing complements NEOM’s commitment to driving sustainable solutions and tackling some of society’s most pressing challenges,” says Nadhmi Al-Nasr, NEOM CEO. “The partnership will allow us to share our collective resources and experience to yield exciting results—not only for our own

organizations, but also for the broader automotive and sports industries.”

Through its bespoke Accelerator program, where performance-driven data can be translated into the culture and thinking of its partners, McLaren will lend its digital and analytical expertise as a technical partner of OXAGON’s advanced and clean manufacturing ecosystem, the company notes.

“We are delighted to welcome NEOM to the McLaren Racing family. This is an incredible way to kick off our entry into Formula E and to unify our electric racing series,” says Zak Brown, CEO of McLaren Racing. “We are thrilled to introduce NEOM McLaren Electric Racing and to work with NEOM to nurture talent and drive innovation. Working with OXAGON will allow us to make meaningful contributions through our Accelerator program and assist with the development of advanced and clean industries.”

McLaren and NEOM are also committed to creating a bespoke program next year to nurture engineers and students. Twenty Saudi graduates from NEOM’s Graduate Program will take part in a one-year placement with McLaren Racing at the McLaren Technology Center in the United Kingdom.

Calling it “an accelerator of human progress and a vision of what a New Future might look like,” NEOM is a region in northwest Saudi Arabia on the Red Sea being built from the ground up as a smart city/living laboratory.

A recent partnership sparked the creation of NEOM McLaren Electric Racing. (Photo courtesy McLaren Racing)





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## ELECTRIC WATERCRAFT

It's not just the automotive market that's watching as EVs become part of the landscape. Electric power is making its way into powersports as well.

This summer, Canadian company Taiga Motors Corp. began deliveries of its electric Orca personal watercraft.

"This is a significant moment for the Taiga team because not only are we kicking off summer with Orca deliveries, but we are proudly marking the milestone of the first-ever mass-produced electric watercraft available to consumers," says Samuel Bruneau, Taiga CEO. "Years of engineering and testing of our revolutionary electric powertrain platform in snow and water has now come full circle, truly changing how people connect with the outdoors."

Taiga developed the world's first performance-focused, commercial electric off-road powertrain. It was initially installed into its snowmobiles and then adapted and fine-tuned for the Orca. The watercraft offers up to 120kW and peak torque from zero rpm.

"Orca redefines the personal watercraft experience with silent operation, powerful efficiency, no engine maintenance and intelligent connectivity," the company states. "The Orca Carbon model features a unique carbon fiber composite hull hydro-



Canadian company Taiga Motors Corp. began deliveries of its electric Orca personal watercraft this summer.

dynamically engineered for dynamic handling with leading power-to-weight ratio and stunning customizable color/finish combinations."

## FIRST PURE-ELECTRIC HYPER GT

Another first comes with the production of Battista, the world's first pure-electric hyper GT, which began earlier this year in a dedicated new Atelier space in Cambiano, Italy.

The next chapter in the development story of new Italian luxury carmaker Automobili Pininfarina, the car world was ready

to welcome the 1,800-hp Battista at Monterey Car Week in August.

With no more than 150 to be created over its lifecycle, each Battista is assembled by 10 craftspeople, taking more than 1,250 hours. The bespoke design features and finish of the exclusive Battista Anniversario extend the time to 1,340 hours.

"I am proud to lead the team responsible for bringing the award-winning Battista to life as a production car," says Per Svantesson, Automobili Pininfarina CEO. "Since launching Automobili Pininfarina in Rome in 2018, we have developed a team of 118 experts, drawn from 20 nations worldwide. This great family has overcome significant challenges in recent years by maintaining a laser focus on delighting Battista owners. The delivery of Battista this year marks a leap in the advancement of automotive design and technology, and I am sure owning one will be rewarding and remarkable in equal measure."

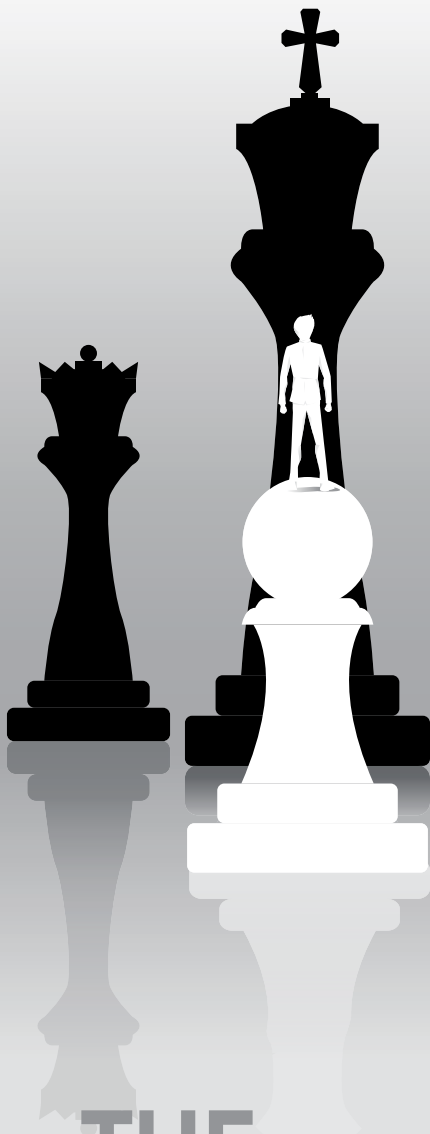
The goal was to blend technically advanced components, materials, and quality assurance processes to ensure Battista offers the ultimate driving experience, according to the company.

"Our objective with Battista was to deliver an alluring new kind of Gran Turismo driving experience, leveraging unprecedented power developed through electrification and perfectly complementing the exquisite work of our design team in the shapes and details featured throughout this hyper GT," says Paolo Dellacha, Automobili Pininfarina chief product and engineering officer. **TS**



Production of Battista, the world's first pure-electric hyper GT, began earlier this year in a dedicated new Atelier space in Cambiano, Italy.





# THE UNDERDOG EFFECT

■ Five ways to overcome & win.

By Darren LaCroix

**WHAT'S YOUR FAVORITE UNDERDOG STORY? WHY DID YOU ROOT FOR THEM? WHETHER IT IS A SMALL BUSINESS UP AGAINST A BIG COMPANY OR THE UNLIKELY HERO FINDING ROMANCE, YOU KNOW THE STORIES.**

You've seen them countless times in sports history, from the Pirates defeating the Yankees in 1960 to the 1980 USA Olympic Hockey team. Hollywood movies are filled with loveable underdogs. Legends are made because they overcome when the odds are stacked against them.

In real life, underdogs don't always win. But, when there's no other choice, they fight the best they can.

So, have the odds ever been stacked against your business? Here are five ways to give yourself a fighting chance to win as the underdog:

## 1 TAP INTO THE UNDERDOG EFFECT

*The odds against you can be an asset.*

Ever wonder why people root for the underdog? More importantly, how can you get people to not only root for you, but come alongside and actually help you?

When the odds are stacked against you, the crowd is rooting for you. It's in our DNA. People are programmed to want to help—even people you may not know.

When they see your persistence, they become inspired and will use their assets to help you get that seemingly unachievable win. Get their attention; that's an asset.

Get your story out there and tell it in a compelling way. The bigger your challenge, the more compelling your story. The more compelling your story, the more people will want to help.

Even unexpected people of influence or people you don't know may pitch in. Make sure your story includes all the ways the odds are stacked against you. If your Goliath is known as a bully, even better.

Get your story on the news, in industry magazines, on social media, in the papers or out to your community any way you can.

## 2 DECIDE TO BE ALL-IN

*What is the Underdog Effect?*

Intelligence is something that people love, respect and want more of. You've probably heard of EQ – Emotional Intelligence. Many people these days talk about AI – Artificial Intelligence.

Now you're about to discover A.I.I. – the Underdog Effect.

A.I.I. stands for All-In Intelligence.

When you are all-in, you think and decide differently. It's because the odds are against you that people not only will root for you, but some will even come alongside you and help.

To take advantage of the underdog effect, you must decide. But this isn't just deciding you are going to win—it is getting every person on your team to make an all-in decision. Once you burn the boats and decide to go all-in, your perspective changes dramatically.

You think and act differently. You feel differently.

It's like a parent caring for a child—there's nothing they won't do to protect them. What stops you from committing to a dream or challenge like that?

If one team member is not all-in, it affects the whole organization. If one team member is all-in, they can inspire others to follow their lead.

## 3 STOP WORRYING ABOUT THE 'HOW'

*Having a complete plan is optional.*

The exciting part of making a total commitment is that you may not know how—and that's OK! Embrace it.

As kids, we dream like rivers flow. We never worry about the how. So, why does this concern us so much as adults? Because if we can't see the entire path, we don't want to start the journey.

That is not how successful underdogs win. They don't worry about tomorrow; they focus on what they can do today, right here, with what they do have.

Underdogs win when they move with purpose, even when they don't know what tomorrow may bring. Improvisation is an essential underdog skill.

Having the ability to adapt and overcome each obstacle is part of their secret. They welcome mistakes because they are fully aware they can learn, adjust and re-engage. This becomes a huge advantage because the Goliaths usually have a strategy that they stick to. They are less likely to have to adapt because they usually win.

This means their *adapting* muscle is not as strong. If you are the underdog, build yours. It can be a huge advantage.

## 4 HAVE AN UNEXPECTED STRATEGY

*Look to be a game changer.*

Here are a couple of examples of doing

the unexpected to come out on top. In the movie *Rocky II*, Rocky's trainer Mickey has him tie his left hand behind his back and train to box righthanded. Mickey does it so Rocky can protect his blind spot.

Also, Apollo Creed, the champion, trains expecting to box a southpaw. Surprise. Midway through the fight, Rocky says, "no tricks" and reverts back to boxing lefty again. Yes, it's just a movie, but what if you could use that idea?

In the story of David and Goliath, Goliath was a massive, unbeatable warrior. David was a young shepherd. He was not a seasoned warrior, never mind a match for Goliath.

David did not try to fight Goliath sword for sword. Instead, he used a different weapon—a slingshot.

Think about this, though—it was *his* weapon. It was one he used for years protecting his herd. The one that came naturally to him. The one that gave him confidence. Using a slingshot allowed him to attack without being in the range of

Goliath's sword.

When the odds are against your shop and there's nowhere else to turn, what unexpected strategy could you implement?

## 5 BEAT THEM AT THEIR OWN GAME

*Meet your opponent where they live.*

What if you out-trained them? In the inspiring true-life story of the 1980 USA Hockey Team portrayed in the movie *Miracle*, coach Herb Brooks didn't have professional all-star hockey players from the NHL, and he didn't necessarily choose just the most outstanding college hockey players—he selected the best ones that would work together as a team.

He taught his team to play like the Russian hockey team that was considered unbeatable, with one big difference—his plan was for the U.S to train harder than the Russians did.

He chose the players that would train the hardest. It caught the team considered to be the best off-guard. Is there a way to out-train your competition?

## UNDERDOG STORIES AREN'T FAIRYTALES

Life is full of underdog stories, but those that come out on top don't do it with magic. They work to make their own luck.

Don't be a hobbyist; be a lobbyist for your dreams. Yeah, some people don't like lobbyists, but when you are all-in you won't care what other people think. You won't have the time.

Some time in your business life, you and your team may end up living your own underdog story. Will any of these five strategies help you come out on top? **TS**



**DARREN LACROIX**, founder of [stagetimeuniversity.com](http://stagetimeuniversity.com), is the only speaker in the world with credits that include CSP (Certified Speaking Professional), AS (Accredited Speaker) and World Champion of Public Speaking. He is the author of *17 Minutes to Your Dream* and the co-host of the *Unforgettable Presentations* podcast. Visit [17minutes-toyourdream.com](http://17minutes-toyourdream.com).

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# BALANCE OF POWER

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# BALANCE OF POWER

Staying connected in  
the drivetrain market.

By John Carollo

**T**he drivetrain market is a lot more complex than many folks think, with plenty to pay attention to from the transmission on back. In the end, however, it's all about creating a strong, reliable, efficient system that puts the power down on the dirt or pavement.

Shops that offer drivetrain products and service can attract a wide variety of customers, from street enthusiasts and racers to off-roaders, and everyone in between. Many drivers prefer a professional touch—or at least some good advice—when selecting and installing these components, since breaking one usually means the end

of a fun day.

Manufacturers are available to help answer questions regarding options, features and benefits, fitments and more. They also have their eyes on the market, including business trends, common misconceptions and real world collaborations that are moving the industry forward.



■ With every new vehicle model, a new drivetrain system is sure to follow. (Photo courtesy Motive Gear/Powertrax)





■ Ask what your customer is looking to achieve with their drivetrain upgrade, then make the appropriate recommendations. (Photos courtesy Motive Gear/Powertrax)



■ Aftermarket drivetrain products improve overall vehicle performance. (Photo courtesy 4 Wheel Parts)

## WHAT YOU SEE

Looking back at the recent history of the drivetrain market shows tremendous evolution and change.

“With new (off-road) vehicles facing more stringent EPA fuel requirements, 8- and 10-speed transmissions with gear ratios focused on efficiency rather than performance are now commonplace,” notes Dustin Waterfall, drivetrain category manager for 4 Wheel Parts. “This is great for a stock vehicle, but as soon as you increase tire size, add hundreds of pounds of equipment such as a winch, bumpers, roof rack, rooftop tent, fridge, etc., or hook up a trailer, those efficiencies are lost. The close-ratio transmissions do an OK job of masking this in the lower gears, but in the overdrive gears it becomes apparent as the vehicle downshifts constantly or you lose your overdrive gears altogether.”

An 8-speed transmission that no longer sees eighth gear is not an efficient vehicle, he continues.

“Re-gearing the vehicle to the appropriate ratio based on modifications and intended use will restore lost power and efficiency, and reduce engine and transmission stress. Helping customers understand these needs is critical.”

Shops can target truck customers of all types, from off-roaders to those towing and hauling.

“A 3/4-ton truck pulling a 12,000-pound fifth wheel on 37-inch tires will absolutely



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■ **HOT PRODUCTS:** Teraflex CRD60 HD Semi-Float Rear Axles

■ **FEATURES & BENEFITS:** Available for Jeep JL and JT models; offer 40-spline, semi-float axle shafts and bearings; use 3.25-inch O.D. by 0.375-inch wall DOM axle tube for superior strength; retain 5x5 bolt pattern and all JL/JT ESP, ABS and speedometer sensors; HD bearing caps; built in the USA.

*4 Wheel Parts  
Dustin Waterfall  
Drivetrain Category Manager*

■ **HOT PRODUCT:** Select-A-Loc Electric Locking Differential

■ **FEATURES & BENEFITS:** New release includes differentials for Dana 44 and AAM 11.5-inch axles; durable, quick-acting electronic lockers; the 11.5-inch was designed for Ram and GM Heavy Duty trucks for shops and consumers making horsepower improvements; made in Auburn, Indiana with 100% U.S. steel.

*Auburn Gear LLC  
Tom Sape  
Business Unit Manager, Specialty  
Diff & Axle Division*

■ **HOT PRODUCTS:** Powertrax Grip Pro Gear-Driven Posis

■ **FEATURES & BENEFITS:** Use helical cut gears in a forged steel case to provide a progressive transfer of power based on throttle input, putting the driver in control of how much traction is applied to the road.

*Motive Gear/Powertrax  
Eric Filar  
Brand Manager*

■ **HOT PRODUCTS:** Tom Wood's Custom Drive Shafts

■ **FEATURES & BENEFITS:** Manufactured in the U.S.; built with attention to detail; each driveshaft is balanced and ready for installation with everything needed; consistency from product to product.

*Quadratec  
Terry Pritchard  
Content Writer*

■ **HOT PRODUCTS:** New Staged Gear & Kit Packages

■ **FEATURES & BENEFITS:** Fully build axles with a single part number; Stage 2 kits include Yukon Hardcore covers; Stage 3 kits include all of Stage 2 plus a full Yukon 4340 chromoly axle kit; Stage 4 kits include everything plus the rear Yukon 4340 chromoly axle kit.

*RANDYS Worldwide/  
Yukon Gear & Axle  
Michael Naish  
Vice President of Sales*

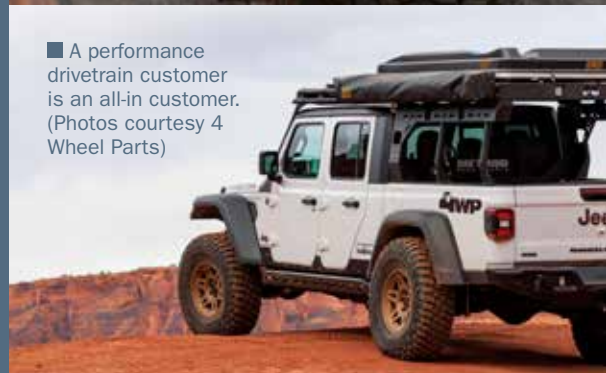
■ **HOT PRODUCT:** TREMEC TKX Transmission

■ **FEATURES & BENEFITS:** Small case size and increased torque capacity suit overdrive swaps into classic cars; cruise at highway speeds with lower rpm; easily fits most tunnels; custom shifter positions mirror OE locations; 600 pound-feet of torque capacity.

*Silver Sport Transmissions  
Bob Scheid  
Vice President*



■ A performance drivetrain customer is an all-in customer. (Photos courtesy 4 Wheel Parts)



benefit from a gear change to keep the engine in the power band. This is just as critical as the Jeepers on 37s who wants to apply maximum torque multiplication off-road," Waterfall says. "Both customers have invested heavily in their setups, so why not keep, or improve, their overall performance?"

Don't hesitate to mention these opportunities to your customers, advises Michael Naish, vice president of sales at RANDYS Worldwide/Yukon Gear & Axle, because they've likely done their research and will appreciate your advice.

"The consumer has become much more educated, as there is more information readily available," Naish says. "Gone are the days when big tires and a lift kit were enough. Consumers are starting to fully understand the importance of having the right gearing and the correct locker for their application, and the importance of high-strength axle shafts and driveshafts. These are all mission-critical components and, when done correctly, allow a vehicle to truly push its limits in terms of performance."

Manufacturers are working hard to keep

pace with market changes.

"Drivetrain parts used to be one size without variety. If modifications were required, then it was the consumer or shop that did them," says Terry Pritchard, content writer for Quadratec. "Now the industry has moved to custom work to fit almost every modification. A few simple measurements and a custom driveshaft can be built very quickly."

A little convenience also goes a long way, adds Tom Sape, business unit manager-specialty diff & axle division for Auburn Gear.





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■ Electronic differentials are gaining momentum as consumers want the ability to flip a switch for added traction. (Photo courtesy Auburn Gear)

“Electronic differentials are gaining momentum as consumers want the ability to flip a switch for added traction. We see this trend mostly in the light truck and SUV markets, but they are gaining in popularity with performance cars as well.”  
Continued attention from the OEMs

requires the market to constantly advance.  
“The performance drivetrain market is always evolving. With every new vehicle model, a new drivetrain system is sure to follow,” observes Eric Filar, brand manager of Motive Gear and Powertrax. “We strive to evolve just as quickly with performance

traction devices and gear ratios to improve vehicle performance.”

### FILL IN THE BLANKS

Suppliers have heard it all—or at least a lot—when it comes to common misconceptions surrounding the drivetrain components aftermarket. They’re here to set aside your fears and fill in any knowledge gaps.

“A lot of shops look at the margin on transmissions and think it’s not enough to be part of their offerings,” says Bob Scheid, vice president of Silver Sport Transmissions. “What they are missing is the fact that the customer will buy everything else needed for the job from them. What looks like a lower-margin project suddenly turns into a great opportunity to capture a customer and not send them elsewhere.”

While oftentimes involved, drivetrain installs are not overly complicated, according to Naish. And, again, manufacturers are here to help.

“These are highly technical products that

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■ Become a one-stop shop for consumers looking to upgrade or modify their drivetrains. (Photo courtesy Silver Sport Transmissions)



require knowledge and a certain skillset, but shops are not on their own. Yukon has tech support lines open every day to provide free assistance to anyone," he says. "We take hundreds of these calls daily and the tech support team has over 300 years of drivetrain experience. You get a

mechanic on the phone. We'll help you out regardless of what brand of products you are installing."

It's true that pros need to do their homework to effectively sell and install most drivetrain products. But immersing yourself in the market creates its own rewards,

Waterfall says.

"A performance drivetrain customer is an all-in customer, as they recognize how important drivetrain products can be to meet their specific needs," he explains. "These are customers who are going for a complete build. Any shop or customer

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## SEMA GARAGE OPENS IN MICHIGAN

The SEMA Garage in Michigan is now open for business.

The 45,000-square-foot research facility helps create connections and opportunities for collaborations between OEM and aftermarket companies and provides parts manufacturers access to sophisticated resources to create new products.

“SEMA Garage Detroit is a gamechanger in helping aftermarket manufacturers develop products for today’s sophisticated automobiles,” says Ben Kaminsky, general manager. “We will be collaborating with automakers, suppliers and key players in the industry to conduct some groundbreaking research. We are really going to be able to take product development and testing capabilities to a whole new level.”

Located about 30 miles from Detroit in Plymouth, Michigan, SEMA Garage Detroit features a large Advanced Driver Assistance Systems (ADAS) technology lab and an installation center, and will expand to include a four-wheel chassis dyno lab and another dyno station capable of testing diesel and gasoline tailpipe emissions.

Like its SEMA Garage counterpart in Diamond Bar, California, the new facility will also feature exclusive OEM measuring sessions, scanning services, advanced tools and equipment, a CARB-recognized emissions lab and a modern training center for members.

“The SEMA Garage Detroit facility opens up new doors and opportunities for our member companies and SEMA,” Kaminsky says. “We will be able to elevate our current offerings by making the services accessible to new members, incorporating new technology and collaborating with key partners in the area.”

SEMA Garage Detroit will offer all SEMA members complimentary access to automotive garage tools and equipment for aftermarket product development, R&D, prototyping and measuring sessions. Additionally, it is available for trainings, how-to/installation videos, product reveals, and production video and photography.

Through the facility’s resources, manufacturers are often able to develop fully functional prototypes in as little as two weeks and obtain CARB EOs in as little as 12 weeks.

“SEMA Garage provides manufacturers access to tools and equipment without the exorbitant individual costs,” says Kaminsky. “Manufacturers no longer need to rely on trial and error for their product development, reducing costs and increasing efficiency. SEMA Garage Detroit will enable more manufacturers access to our resources.”



■ SEMA Garage Detroit helps aftermarket manufacturers develop products for today’s sophisticated automobiles. (Photos courtesy SEMA)

For more information, visit [semagarage.com](http://semagarage.com).

*Editor’s note: This article originally appeared at [theshopmag.com](http://theshopmag.com). Visit today and sign up for the free daily eNewsletter.*

might be able to start with a lift, wheels and tires, but drivetrain is far more technical. The customer who wants drivetrain parts understands that, generally speaking, these are higher-dollar items that require expertise to install correctly. They want their vehicles performing at their absolute best.

Capturing drivetrain customers can lead to significant sales for your shop.”

With experience comes an understanding of what each project requires.

“There are so many reasons why a customer may want to upgrade his differential,” says Filar. “So, you have to ask

yourself, what is your customer looking to achieve in the end? Are they looking for performance, fuel economy, off-road durability, increased highway mileage or quick times at the drag strip? Find out, and then choose his or her gear or traction package accordingly.”



And most projects can be completed fairly quickly.

“Tom Woods driveshafts are produced in the USA daily and are available almost immediately,” Pritchard notes.

Sape outlines the type of knowledge you and your installers might need to be successful in the off-road market.

“Many shops and consumers don’t fully understand how limited-slip systems work. You need to think of them as a big multiplier in the center of the axle. So, if a wheel spins, the differential takes the torque from the spinning wheel and tries to transfer it to the opposite wheel that has better traction,” he notes. “Our limited-slip has a 5:1 bias ratio or multiplication effect. So, think of it as having five guys push your vehicle out of a stuck situation. Limited-slip performance fades once your tires are rotating at the same speed. An electronic differential locks the axle solid and allows the driver to control the on/off function. These are low-speed devices but provide the best solution for added traction.”

■ Consumers are more educated these days on available drivetrain upgrades, but still look to their local shop for advice and recommendations. (Photos courtesy RANDY’S Worldwide/ Yukon Gear & Axle)



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# BALANCE OF POWER

## UPDATED LIFT SAFETY REQUIREMENTS NOW IN EFFECT

The latest version of the American National Standard covering safety requirements for vehicle lift installation and service in North America is now in effect.

Approved by the American National Standards Institute (ANSI), ANSI/ALI ALIS 2022 replaces the existing standard, ANSI/ALI ALIS 2009 (R2015), as of early August.

The Automotive Lift Institute (ALI) is the ANSI Accredited Standards Developer and sponsor of ANSI/ALI ALIS.

“Staying safe in the service bay starts with buying an ALI-certified lift, but it doesn’t end there,” explains R.W. Bob O’Gorman, ALI president. “It’s crucial that the lift be installed properly by a qualified installer, inspected at least annually by a qualified lift inspector and serviced as needed by a qualified service technician. The ANSI/ALI ALIS 2022 standard offers guidance on all of these after-the-sale aspects of lift ownership.”

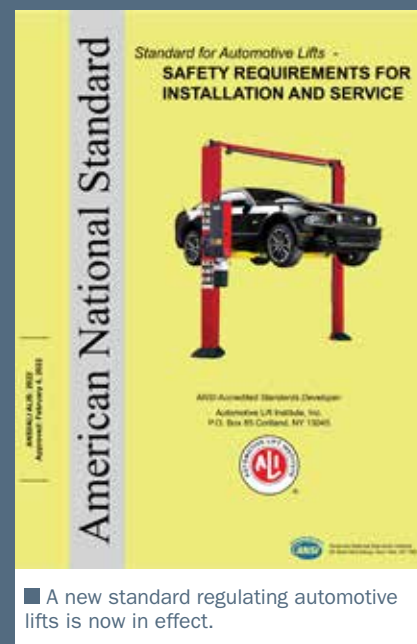
The new standard describes the duties and responsibilities of lift installers and service technicians, including required qualifications, training, reporting and documentation. About 50% longer than the prior version, it adds expanded content addressing accessories, attachments, decommissioning and removal; a new section focused on the need for post-in-

stallation inspection; and new definitions.

The standard applies to vehicle service lifts, generally called *car lifts*, *truck lifts* or *hoists*.

The 37-page standard is available in print from ALI, its member manufacturers and ALI Certified Lift Inspectors.

*Editor’s note: This article originally appeared at theshopmag.com. Visit today and sign up for the free daily eNewsletter.*



■ A new standard regulating automotive lifts is now in effect.

### A TEAM APPROACH

Innovation and ingenuity help drive the drivetrain market. Partnerships and collaborations accelerate growth.

“The Wharton Automotive Group is a prime example of the opportunities in the market,” says Scheid. “With FTI Converters, Silver Sport Transmissions and McLeod all under one umbrella, our distributors have the availability to offer a wide range of products, all of which are driveline focused. Our WD and jobber programs mean your business can be that one-stop shop for any consumer seeking to upgrade or modify their driveline.”

Over the last six months, Yukon, Dynatrac and ICON Vehicle Dynamics have partnered on several builds, says Naish.

“At the end of the day, a big build can be intimidating, and these three brands have come together to show consumers that when it comes to drivetrain components, complete axles, suspension systems and wheels, there are some great solutions that not only offer top-tier performance but connect to each other very well and don’t require major vehicle modifications.”

Complementary products are also a focus for Sape.

“Auburn is supplying many very popular aftermarket axle brands with Grip N Loc and Select A Loc differentials. With the recent introduction of an axle for GM and Ram heavy-duty trucks and our new Dana 44 Select A Loc, the axle makers are quickly adopting these products.”





■ From the racetrack to the trail, performance drivetrain upgrades give customers confidence and capabilities. (Photos courtesy Quadratec/Tom Wood's Custom Drive Shafts)

As they say, teamwork makes the dream work.

"After 4 Wheel Parts was acquired by Wheel Pros, we are very excited to start the collaboration between our G/2 brand and Teraflex," Waterfall says. "Our combined efforts should lead to additional innovation and options within the drivetrain market. There will be some great synergies as our companies come together."

The ideas behind the partnerships are aimed at helping shops thrive in the drivetrain market.

"Motive Gear, Powertrax and Ten Factory have combined forces to offer a complete line of ring and pinion packages, traction devices and performance axle shafts to make sourcing previously hard-to-find

parts easier and more affordable," Filar says.

Quality projects show what's possible.

"We used Tom Woods Driveshafts on our Jeep that we built for SEMA—a vehicle that would be at home on the show floor and has the confidence to hit the most demanding trails," says Pritchard from Quadratec. "Our 30th Anniversary Jeep YJL, with its fully customized styling and appearance, draws a crowd at every show. The YJL has been trail-tested in some of the most demanding conditions, including on trails in Johnson Valley and Moab." **TS**



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# FINDING YOUR LANE

The benefits of building for a specific niche. // // // // By Jeff Page



Most successful shops find a niche that they fall into as builders and stay in that lane.

**W**hy do successful custom car shops seem to build the same make and model vehicles over and over? It isn't by chance.

Most successful shops find a niche that they fall into as builders and stay in that lane. Of course, it doesn't always start out that way. In the beginning, we all take whatever comes through the door with a check that will clear at the bank!

My shop, Heartland Customs, started 15 years ago with small hot rod parts swaps. We then worked our way into some small

restoration jobs, which led to full restorations. Once we established our reputation as a shop that did good work and took care of our customers, we were able to move onto the next step in our business evolution.

It was at this crossroads that we had to decide if we still wanted to take on whatever jobs came through the door or focus on a specific market segment. Would we specialize in one niche like Detroit Speed had done with Camaros or Ringbrothers had done with Mustangs, or tackle a vast array of makes and models like Rad Rides

and Coddington?

After looking at all the options, we decided it made much more sense to focus on a specific niche. The question was, which one?

There are so many different paths to take in the car building world. You have restomods, straight restorations, street rods, trucks, muscle cars, ISCA-level show vehicles and specific OEM brands, plus many more.

We had to look at what was hot at the time, and what we thought would be hot in the future as we invested time and capital





Focusing on a certain industry niche allows us to hone our employees' skill sets to produce successful restomod Corvettes.

into positioning ourselves at the forefront of our specific niche.

#### MARKETING

One of the main advantages of focusing on a specific market segment is that it makes advertising easier.

Shops that take whatever jobs come through the door will need exposure in multiple markets. It's very difficult and expensive to advertise in many places in order to find those different customers.

If you focus on a specific niche, however, you can focus your advertising as well. If you want to buy a half-page advertisement in a car magazine, for instance, you can buy one ad in a publication that is geared toward your focused market.

For example, we at Heartland Customs are known worldwide for our restomod Corvettes. If we were going to purchase advertising, then we would buy ad space in a Corvette-specific magazine. The return on investment would be very low if we bought ad space in a truck magazine or a street rod publication.

Traditional advertising is just one way to gain attention for your shop, however. Here are some other avenues you may want to consider.

#### YouTube

YouTube is free and has proven extremely effective at reaching a worldwide audience.

Using keywords, you can direct YouTube searches to your videos. Be sure to use keywords that match the vehicle you are featuring in your video.

With today's handheld gimbals and high-quality smartphone cameras paired with a video editing program just about anyone can become a content creator.

#### Partnerships

We like to partner with successful vendors. This allows two companies to assist each other with getting the word out to prospective customers.

Partnerships can also help get your vehicles featured in vendor booths at car shows like Goodguys or SEMA, if you build a vehicle that's worthy.

These booths are expensive and usually outside the budget of a startup shop. By partnering with a successful vendor, they cover the expense of securing space, and your beautiful creation draws customers into their booth.

It's a symbiotic relationship that can be very profitable for both partners.

#### Manufacturing

A spinoff of aiming your shop into a specific niche is the option of designing and manufacturing parts. This is a very lucrative option that has proven effective for many businesses.

The vehicles you build and the social

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## CHROMOLY DRIVESHAFTS





This focused niche concept also allows you to try different products and methods and find which ones work best.



media and YouTube content you create give you a perfect way to display the parts you design and manufacture. Customers are much more likely to purchase parts from you because they can see them in action on your top projects.

### SHOP ADVANTAGES

At the end of the day, everyone wants to know how a niche approach can increase their bottom line. One place where it made a huge impact for us was in employee training.

Focusing on a certain industry niche allows us to hone our employees' skill sets to produce successful restomod Corvettes. We don't need to spend money and training

time on a Pullmax machine or an English wheel—as much as I love using them, they aren't required for a fiberglass car like the Corvette.

Instead, we spend time on perfecting our skills involving proper fiberglass repairs and how to make custom parts using molds and fiberglass resins. By focusing training on only the things that we need to accomplish for our niche, it gives us a smaller list of things to teach and, in turn, gives our employees more time to perfect them.

We are also able to fabricate jigs and templates to increase the speed in which we fabricate and mock-up items like Vintage Air systems. Rather than having to order the kit, unbox it, pull it out of the

plastic, hold it in place and drill holes for brackets, etc., we just pull the template off the wall, align the reference marks and drill the holes.

We can have a Vintage Air evaporator mocked up in 30 seconds, and we don't even need the actual unit to do it!

This focused niche concept also allows you to try different products and methods and find which ones work best. We have all tried a new product that failed, and this happens more often when you are building different vehicles that require different parts and methods.

By using the niche concept, you alleviate these struggles. This also rings true with which parts fit and work properly. By doing



the same vehicle over and over, it allows you to nail down exactly what works the way you want it to. No more trial and error.

**THE INDUSTRY**

The custom vehicle industry is amazing once you figure out the special formula for success.

This business will test you. It will throw all kinds of curveballs at you weekly, from bad customers to bad employees and everything in between.

However, it will also throw amazing experiences and victories your way, if you're willing to put in the time and effort. Knowing where you fit in—whether it's building a number of vehicle types or just one or two—is the first step to carving out a niche of your own. **TS**



Knowing where you fit in is the first step to carving out a niche of your own.



**JEFF PAGE** is the founder and CEO of Heartland Customs in Purcell, Oklahoma. The shop is world-renowned for its ability to build completely modernized classic

vehicles while retaining the original OEM look. Its restomod Corvettes are considered the market benchmark and have won numerous top awards nationwide including the SEMA General Motors Car of the Year. Jeff is very active in giving back to his community and sharing his experience and knowledge with fellow builders and enthusiasts. Visit [heartlandcustoms.us](http://heartlandcustoms.us).



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### Ford Truck Air Suspension

**Ridetech**, Jasper, Indiana, presents a bolt-on Performance Air Suspension System that improves the handling and ride of 1965-79 Ford F-100 and F-150 models. The system removes the entire factory front crossmember in favor of a bolt-on front crossmember and replaces the old leaf spring rear with a four-link. The package can be ordered with either Shockwaves or coil-overs, both of which enhance drivability and stance.



### One-Piece Carbon Fiber Wheels

**ESE Carbon Co.**, Miami, introduces E2 Wheels one-piece carbon fiber rims. Manufactured in the U.S., the E2 carbon fiber wheels weigh 17 pounds. Their lightweight qualities improve performance, handling and efficiency, and reduce noise. For electric vehicles, the lowered rotational inertia in turn lowers watt-hours per mile and increases vehicle range. The wheels are currently available in a 19x8.5 size, with additional sizes and designs planned for later this year.

### Mustang Hood Lift Kits

**California Pony Cars**, Ontario, California, presents its Ford Mustang NXT Generation Hood Lift Kits, made in the USA. Designed to eliminate the use of the outdated hood prop rod on 2005-22 Ford Mustang V-6 and GT models, the hood lift kits feature a unique strut tuck-back design with no drilling or cutting required.



### Mustang Race Brake Kit

**Wilwood**, Camarillo, California, presents Aero6R/ST Lug-Drive Road Race Brake Kits for 1994-2004 Ford Mustang racing applications. The kits, which feature Aerolite six-piston calipers and 14-inch floating rotors, are engineered for Ford SN-95 platform Mustangs in high-speed road racing classes using factory spindles. Lug-drive dynamic mounting simplifies assembly while eliminating the heat distortion of repeatedly slowing race vehicles. Differential bores in a rigid caliper evenly spread clamping force across the entire brake pad.



### Aluminum Wheel

**Method Race Wheels**, Santa Fe Springs, California, presents its solid aluminum 305 NV wheel, now available in a titanium finish. Offering a 12-window design with debossed Method logo, the wheel features a Street-Loc V.1 lip with undercut that simulates a true beadlock wheel, and replaceable lip bolts with optional colors available. Weight ratings are from 2,500 to 3,640 pounds, with HD 4,500-pound applications available.

### F-150 Leveling & Lowering Struts

**Belltech**, Clovis, California, part of **KW automotive North America**, presents Leveling and Lowering Struts for 2021-up Ford F-150 models. Engineered with a low-friction piston design and preset damping forces, the struts are designed to work with OE springs to lower the vehicle 0-3.5 inches. Easily adjustable ring spacers customize the truck's ride height and a progressive-rate polymer open-cell bump stop is included with each strut.







### Subaru/Toyota Exhaust Suite

**AWE**, Horsham, Pennsylvania, presents a new Exhaust Suite for Subaru BRZ and Toyota GR86 applications. Available systems include the Touring Edition that features the company's patented drone-canceling 180 Technology, and the Track Edition for drivers looking to decrease weight and enjoy a louder sound. Made from T304L stainless steel in the USA with a straight-through design that maximizes flow, the systems include a conversion kit that allows the owner to easily switch between editions.

### Multi-Directional Shifter Adapters

**Lokar**, Knoxville, Tennessee, presents its new, patent pending AxiShift and AxiShift Pro shifter adapters that offer an almost unlimited range of adjustment, allowing shifter levers to be oriented into their preferred location. Both versions deliver precise adjustments prior to locking in the desired position by providing 360 degrees of axial rotation of the shifter lever and the ability to tilt 15 degrees in any direction. The AxiShift Pro has all the features of the standard AxiShift but adds an additional level of both horizontal and axial adjustment. Both are made in the USA.



### Tacoma Gears

**Nitro Gear & Axle**, Cashmere, Washington, presents T8S Front Gears and TV6 and T8.75 Rear Gears available in 4.88 and 5.29 ratios for 2016-up Toyota Tacoma models. Manufactured from 8620 steel gear forgings, the gears are precision-machined using computer-controlled processes, heat treated, CNC triple-lapped and Rockwell tested for hardness.

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### Chevy Pro-Touring Fuel Tanks

#### Classic Performance Products

(CPP), Placentia, California, presents Pro-Touring Aluminum Fuel Tanks for Chevrolet muscle car applications.

Designed for high-performance builds, the tanks work with carbureted or fuel-injected engines and are easily installed using factory mounting locations. They feature an integrated surge tank to keep the fuel pickup submerged at all times and include provisions for two pumps. Sleek side cutouts help hide the tank underneath the car.

### Audi RS 3 Exhaust

**Akrapovič**, Horsham, Pennsylvania, presents an Audi RS 3 (8Y) Evolution Line (Titanium) exhaust system. Designed with two exhaust valves fitted outside the muffler to deliver improved flow and sound, the system is constructed using lightweight, race-proven materials—titanium for the muffler and link pipe section, and carbon fiber for the newly designed, handcrafted tailpipes. The system offers a power increase of 10.2 hp at 5,450 rpm and a torque gain of 12 pound-feet at 2,800 rpm.



### Motorsports Tire

**Yokohama Tire**, Santa Ana, California, presents the new ADVAN A055 motorsports tire. Built to provide added grip for on-track racing, the tires include symmetric alternating twin grooves that maximize the contact patch to increase dry-track performance. An ultra-high turn-up increases stiffness for enhanced cornering, and consistent performance is produced by a rounded profile that quickly transitions from straight-line sprints to high-speed cornering for predictable handling. An optimized tread depth eliminates the need for shaving.



### VW Coil-Overs

**H&R Special Springs**, Bellingham, Washington, presents its Street Performance Coil-Over system for Volkswagen Golf GTI models. Designed to improve handling while retaining ride comfort, the system features H&R's MONO – Tube shock technology for precise control. Lowering is adjustable between approximately 1 and 2 inches in the front and rear. Lowering the vehicle's center of gravity improves handling and creates a sleek European stance. The coil-overs are 100% made in Germany.



### Camaro Taillamp Assemblies

**Classic Industries**, Huntington Beach, California, presents new OER reproduction taillamp assemblies for 1982-92 Chevrolet Camaro models. The reproduction assemblies are manufactured using high-quality injection-molded acrylic lens material replicating the original lens design and coloration. The red, amber and white lenses provide an authentic and functional replacement, and the sets include the correct studs, quarter panel seals and license lamp lenses.

### Carbon Fiber Steering Wheel

**Ringbrothers**, Spring Green, Wisconsin, presents a Carbon Fiber Steering Wheel with billet aluminum spokes and a 3D-printed stainless steel center cap. Available with either a crushed carbon fiber or carbon fiber weave hoop, the three-spoke steering wheel is 14.5 inches in diameter and fits the 1967-94 GM steering column spline as well as universal **IDIDIT** and **Flaming River** steering columns.





## F-150 Exhaust Systems

**CORSA Performance**, Berea, Ohio, presents new Performance Exhaust Systems for 2021-22 Ford F-150 models, including V-8 and EcoBoost applications. Engineered to give drivers louder, more aggressive exhaust notes, a boost in performance and a drone-free ride, the systems are available in a variety of sound levels and exit options.



## Traction Control

**JMS Chip & Performance**, DeBary, Florida, presents its TractionMAX Traction Control device for high-horsepower, traction-limited vehicles. Designed and assembled in the USA, the device optimizes acceleration and traction and is compatible with factory and aftermarket tuning. Dual adjustment dials are included.

## GM Transmission Fluid Cooler Adapter

**Improved Racing**, Orlando, presents a bolt-on Thermostatic Transmission Fluid Cooler Adapter for GM 6L, 8L and 10L automatic transmission applications. The adapter's built-in thermostat automatically bypasses the transmission cooler until the fluid reaches operating temperature. The design eliminates rough shifts caused by overcooling the transmission, reduces wear and improves horsepower and longevity. Transmissions come up to temp quickly and still have all the cooling capacity needed for high-load activities such as towing or racing.



## Mustang Adjustable Camber Links

**BMR Suspension**, Seffner, Florida, presents Adjustable Camber Links for 2015-22 Ford Mustang applications. The kit replaces the factory rubber bushings with polyurethane bushings and rod ends for more consistent and repeatable handling performance. CNC-machined in the USA from billet aluminum, the camber links reduce flex and provide maximum strength and durability. They are available in a durable black anodized finish. **TS**



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# For the Love of Pickups

DIESEL/TRUCK Motorsports events keep packing them in. // // // // By Ron Knoch

Every year after our DIESEL/TRUCK Motorsports midsummer events I like to report to our supporters and shops what the diesel marketplace is looking like for the year. After 15 years, many people have said they look forward to these annual updates.

On the heels of COVID-19 it has become more difficult to not only report on the events, but simply put them on. Worker shortages at local tracks, businesses and hotels have made things more difficult, and travel schedules have been disrupted.

DIESEL/TRUCK Motorsports is like any other business, facing the same national issues—higher fuel prices and rising inflation among them. Thankfully, we have a lot of experience putting on these events, and even kept our notes from 2008 when the last recession hit.

## DIESEL DEMAND

Local shops report being very busy right

now, as customers are looking for repairs and upgrades to their current diesel vehicles, which are cheaper than buying a new model (if you can even find one at the lot!).

Shop owners are facing the same challenges, mainly difficulty in finding talented, dedicated employees, and parts manufacturing and delivery delays.

This year more shops are attending our DIESEL/TRUCK Motorsports events for many reasons. They are signing up as vendors for added exposure and bringing their customers' vehicles to compete. Everything is geared toward getting the word out about their services and available parts and accessories.

We've seen strong local attendance at each event, even though rising fuel prices are discouraging many folks who live farther away from driving in. Competitors have called saying they cannot trailer their competition vehicle to an event at 8-10 mpg without an outlay of major dollars.

Hassler Diesel's *Twisted Addiction* Super Pro Stock pulling truck dials in at well over 2,000 hp.





## Diesel Truck Trade Show

DIESEL/TRUCK Motorsports is hosting a first-time indoor trade show/outdoor car and truck show in November for shop owners wanting to find out more about the pickup market. The event is scheduled for Nov. 11-13 at The Regalia Hotel & Conference Center in Lake Ozark, Missouri.

For more information, search for Lake Ozark Performance Expo on Facebook.

I don't blame them. With fuel prices hitting the \$5- to \$7-a-gallon range, it can add up quickly.

Local diesel shops have stepped up, bringing in their customers' trucks to compete and be seen by our attendees. The atmosphere is still that of a family-friendly county fair, so many use the events as a quick vacation away from the hectic work week.

That is why DIESEL/TRUCK Motorsports goes to many state events and changes locations every two or three years, so we can get to different areas of the

country. Reaching rural truck markets has always been our focus, along with offering support to local brick-and-mortar shops.

Many shops use our sponsors' products daily for rebuilds or maintenance on diesel vehicles of all types.

### DIESEL DIVERSITY

You may have noticed that we now allow gas pickups into many of our classes and competitions. I have seen many of our diesel shops do the same to diversify their clientele.

Many smaller shows were canceled

by COVID, so I've had clubs ask to be included in our events. During tough times it is always good to come together where all groups enjoy motorsports and the components that go with them.

As a shop, serving both gas and diesel truck owners may allow you to pick up more profitable jobs and price your services to match your skill level. DIESEL/TRUCK Motorsports has even had car clubs want to join us at events after they couldn't find decent venues to gather at on their own.

If we think they fit we let them come, and our truck guys seem to enjoy it.

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# For the Love of Pickups



The Runwhatubrung Motorsports Class attracts powerful diesel trucks trying to hit top speeds in the 1/8-mile.



Multiple-engine alcohol modified tractors were added to the sled pulling category last year at two different locations, along with 2WD modified trucks. Both are huge crowd favorites.

All shapes and sizes of trucks can race down the track and also enter the show-n-shine competitions, like this truck did at the East Coast Diesel Nationals.



Winning offers bragging rights.

This past month we had a group of really nice dump trucks show up at our East Coast Diesel Nationals (14th year). They said they just wanted to come and enjoy the show. I told them to enter in the show-n-shine and I would make a dump truck class for them!

Coming up in September is our Horsepower Festival in Missouri where we pass out over 20 trophies in show-n-shine for trucks (diesel and gas), cars, rods, semis, work trucks, imports and Jeeps.

## DIESEL DRIVEN

On the track the diesel vehicles are getting faster, so we dropped the competition distance down to 1/8-mile to help avoid major breakdowns. I suggested this online more than 10 years ago and it has taken that long for it to take hold.

We now have six classes for drag racing. DIESEL/TRUCK Motorsports has built back the Workstock and HOT Workstock classes to get beginners interested in our pulling sport. Meanwhile, the upper classes have diversified between smooth bore and map-groove turbo groups, and we sometimes run both depending on the location.

Most of the pulling trucks and tractors are trailered in for the events since they are not street legal. As stated, higher fuel prices have affected entries in these classes, as it costs a lot to tow right now.

These competitors try to get to the closest pulls in their area, be it county fairs or state pulling group events. They love their sport and will travel as far as their budgets allow to pull in a competitive environment.

Crowd counts at the last two events have not suffered any from current conditions—fuel or economy. Fans and enthusiasts still enjoy seeing what these powerful vehicles can do in each area of competition. As mentioned, most of our DIESEL/TRUCK Motorsports events are held in rural settings, and the shows make for a fun weekend outing.

## DIESEL DYNAMICS

So, how can a local shop stay on top of this changing but growing market? One way is to attend shows as a vendor and ask the people what they want. Are they looking to upgrade, looking for maintenance or looking for accessories to customize their trucks? Likely it's all of the above.



Trucks and cars show together at three of our events and it makes for a diversified crowd, but they all love motorsports.



Truck people talking to other truck people is what our events are all about.



Fans back their trucks up to fences on both sides of the track and tailgate all day long while watching the show.



It's always about what the customer wants, and a good way to find out is to visit where they gather.

The truck market is still strong throughout the farming states, with many enthusiasts rebuilding a stronger pickup or maintaining an existing work vehicle. These people love trucks! I know I use mine weekly for errands and projects around the house, and then drive it to local events.

Rural truck owners are resourceful about the use and upkeep of their vehicles, enjoy watching other vehicles compete and are excited to be part of the diesel community.

These folks are used to hard times and know how to cope with life's ups and downs, meaning some of the challenges mentioned earlier aren't going to change their habits. For work or play, the diesel market is still going strong! **TS**



**RON KNOCH** is president of DIESEL/TRUCK Motorsports (National Association of Diesel Motorsports), a sanctioning body formed in 2007 for diesels that promotes all diesel motorsports associations, clubs and events, and hosts diesel drag racing, sled pulling and dyno competitions. Visit [dieselmotorsports.us](http://dieselmotorsports.us).

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The joy of converting shipping containers into workspaces.

I'll admit that for a while there I was binge-watching those YouTube shows about people turning shipping containers (SC) into houses, shopping outlets, restaurants, etc. I loved the idea of a ready-made box that you could cut a few holes into and *bingo!*—instant home.

That is until I watched a show that told what I believe to be the truth about building a SC-based home in the California desert. It was not as easy, or as cheap, as other videos made it seem.

In California, you need a permit and then must meet zoning requirements and building codes—you can't just plonk down a container, set up some furniture and move in. The producer of the show also gave an eye-opening breakdown of the costs, which included tens of thousands of dollars in fees.

That said, there are still advantages to SC-based structures—including opportunities to use them for automotive purposes. Let's explore.

#### UNPACKING THE SC CRAZE

The world has a surplus of unused containers. Most are made in China and shipped to the U.S. and elsewhere, often never to return because we don't have much to ship back.

That should mean containers are cheap,

and they used to be—but prices reflect demand, and a good *one- or single-use* container currently costs between \$4,400 and \$7,400, plus transport to your site.

*Single-use* means a container that has made just one trans-Pacific trip and hopefully has not contained anything toxic—what the trade calls *dangerous goods*—or, even worse, illegal travelers.

Another reason to opt for single-use is the probable lack of rust. These steel containers spend their lives on the ocean and rust can be a problem for a well-traveled box.

Containers offer an instant, lockable and secure storage facility where you can hide your stuff from filching eyes, vermin and inclement weather. That's like having



When not in use, a sideloader truck hauls the container and its contents to a warehouse.



A strong awning attached to the box creates a covered work area.

a secure house while you build out the interior.

The downside of container life, as I see it, is the fact that the box is steel and therefore is cold as heck in the winter and hotter



The Sigra Rollingstock Components Australian race team uses a shipping container as its pit structure at the track.



than hell in the summer. Consequently, you have to insulate them extremely well and, because they mostly have corrugated walls, they get narrow quickly.

Yes, they are 8-feet wide to start with, but the actual inside width before insulation is 7-feet, 8-inches. Add something like 4 inches of insulation and you begin to create a long, thin tunnel.

Another downside is that the only opening is the double doors at one end. Any additional windows or other doors you might require have to be cut and framed in steel. That's not difficult for many crafty people who can weld, but other, less-skilled buyers might find it a chore too big to tackle.

The final downside that many are not aware of is that, while they look structurally sound, shipping containers are designed to be stacked and are therefore solid at the corners—but the roofs themselves are not that strong. Likewise, the corrugated walls are strong-ish until you cut large holes in them.

Something else to consider if you plan



The craze of repurposing shipping containers for commercial, retail or even residential uses includes automotive applications.

to join two containers together for a wider space is that they will need linear welding along the join and 80 feet of welding (top and bottom) can get expensive.

Finally, you should be wary of the paint used on the container. Who knows

what it is? So, the box might need to be blasted clean.

Taking all of that into consideration, if you decide an SC might be the answer to your need for additional protected work-space, you'll want to have the ground



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Pinstriper Brad King is building out a container to house his experimental land speed racer.



King found his high-cube, 9-foot-tall aluminum container locally in Apple Valley, California. He's outfitted it with lighting, air conditioning, a man door and a hoist to lift the engine in and out of the race car.

graded where it will sit. The box should lean ever so slightly toward the door so that any water that does accumulate will not pool in the back where it can cause rust.

### A SHOP IS BORN

To see what building a container garage is really all about, we visited pinstriper Brad King, who is building out a container to house his experimental land speed racer. King found his high-cube, 9-foot-tall aluminum container locally in Apple Valley, California.

He paid just \$1,000 for it, plus another \$500 to transport it to his lot.

"I didn't really do a lot of ground prep," King says. "However, there is plenty to do in terms of outfitting it. It had a wooden floor, but I've had to install some good insulation. Despite its name, Apple Valley is actually high desert and, as a consequence, we get hot summers and some cold winters."

He agrees that thoughtful planning is required to maximize capacity.

"The insulation really sucks up interior space, but thankfully my streamliner is only 28 inches wide, so I have a reasonable amount of room to work around it," King notes. "Also, this aluminum container has flat interior walls—not corrugated like a steel container—with vertical ribs on the outside that are ideal for hiding the insulation attachments. With insulation in place I have an interior width of 7 feet, 6 inches."

He's outfitted it with lighting, air conditioning, a man door and a hoist to lift the engine in and out of the race car.

"Nevertheless, I have good workspace and room enough to install a small lathe as well as a disc/belt sander, two welders (MIG and TIG), a welding table, a bandsaw, two drill presses, a shop vac, a press, a compressor, tools and both 120V and 240V power," he reveals. "It's pretty self-contained."

### SHOP ON THE GO

Interestingly, container garages do not have to be static, meaning they can provide a mobile pit structure for race cars without the need for a tow vehicle. While in Australia, I came across a container used for just this purpose as a truck rolled in and dropped a box in its designated pit space.

The Sibra Rollingstock Components team soon arrived and began unpacking.

"It's a 40-foot, high-cube container with an added side door, so there is just one small step up into it," says Geoff Gradden, Sibra GM. "Most race trailers have several steps up and this becomes very tiring for the crew over a few days of racing. The race car goes in at one end, with screened storage above, and workbenches, spare parts storage and toolboxes, along with an office area, at the other end."

Sibra's setup is insulated with refrigerator paneling inside and has power, air, water tanks, compressor and air outlets built in. The awning rolls up into a pocket along the roofline that has been engineered to maintain the integrity of the container.

"The fit-out is high-quality and similar to a normal race car trailer, but we don't need to own and maintain a trailer or a truck to tow it with," Gradden explains. "We chose a shipping container so we can easily have it picked up from storage in our warehouse and delivered to the local drag-strip in Sydney by sideloader. If we travel to another state, we have it loaded onto a train and then have a sideloader pick it up at the railhead and take it to the track."

The race car is a 1959 Chrysler C-body Saratoga that in Australia runs Top Doorslammer or Pro Slammer, depending on the race promoter, which is similar to Pro Mod in the U.S.

It's admittedly pretty tight inside, but nobody works on their car in the trailer anyway. That said, a container for a race car might not be everybody's solution, but in the vastness of Australia it works. **TS**



Born in England, **TONY THACKER** is an accredited automotive journalist, author and book publisher, and served as marketing director at the famed SO-CAL Speed Shop.



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## Flathead 8BA Rebuild, Part III

Installing rods, pistons, the oil pump & more.

Build, text and photos by Mike Mavrigian

**EDITOR'S NOTE:** This is the third installment in a five-part series documenting the rebuild of a Ford flathead 8BA engine. Part I appeared in the April 2022 issue of *THE SHOP*, and Part II in the July 2022 issue.

Originally, Ford used a two-piece rope seal at the crank snout. While new rope seals are readily available, to make life easier I purchased a one-piece rubber-lipped seal from Speedway Motors (no messing with seating the rope pieces,

and less chance of a leak).

However, the front seal rides on a steel spacer sleeve that drops onto the crank snout (between the oil slinger and damper/pulley). The original sleeve features a spiral groove to help keep the rope seal lubricated. This grooved sleeve won't work with the one-piece seal, so I obtained an aftermarket sleeve from Luke's Custom Machine.

This is simply a steel tube machined at a height of 1.095 inches, with an I.D. of 1.310 inches and an O.D. of

1.626 inches, with a smooth outer surface (no grooves).

The spacer sleeve features about a 0.001-inch interference fit (snout diameter is 1.627 inches). Installation requires either tapping it onto the snout using an aluminum or brass tube and a hammer, or heating the sleeve in a convection oven (heat to about 300 degrees for about 15 minutes) and sliding it onto the snout. Just remember that the crank timing gear and oil slinger must be in place before installing the spacer sleeve.

### OIL PUMP IDLER GEAR

With the idler gear shaft, gear and shaft bushing clean and lubed, insert the shaft into the gear with the round head of the shaft mated to the side of the gear with the raised boss.

The side of the idler gear that features a flat, full face (the side with the raised boss) faces toward the rear (outward toward the transmission). The side of the gear with the concave face faces the front of the engine.

If you install the gear with the raised boss facing forward, the gear will stick out too far and not properly engage the gear on the cam. Some flathead books have made this confusing, with poor photos and poor

Original oil pump intermediate gear tooth condition was like new.



Our forged SCAT rods measure 7.000" center to center. The rods required no weight adjustment during balance check, as all were within 0.5-gram.





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The oil pump drive gear features a steel guide that registers into a locating hole in the rear of the block.



With the cam already installed, the oil pump gear is inserted with its guide into the hole, then rotated to engage cam-to-gear mesh. Apply assembly lube to the gears prior to installation.



The oil pump gear fully installed.



A cast iron cover plate (with gasket) seals off the rear oil pump gear and cam. This is one of the parts that you need to save from the old engine core.



Original rear main rope-type seals can be troublesome to install to seal properly. New braided graphite rope seals tend to work much better.

descriptions. Hold the gear (without the shaft) in place, meshed with the cam gear. The required orientation of the gear will be obvious.

Insert the gear by hand, meshing the gear teeth to the teeth on the rear of the camshaft. Insert the shaft into the shaft hole in the block as far as you can by hand. Using a clean brass drift and a hammer, tap the shaft into the block (while verifying that the gear rotates smoothly on the

shaft—make sure the shaft isn't cocked and jamming in the gear's bore).

Gently continue tapping the shaft into place until it gently bottoms out. Check for endplay (gear clearance fore/aft). Ours had about 0.001-inch of endplay.

Apply a thin coat of RTV to both sides of a new idler gear cover gasket and install the rear cover to the block using five 5/16-by-18-by-3/4-inch hex head bolts (with Loctite 242 on the threads and lock

washers). I tightened all bolts to a value of 15 pound-feet.

### IMPORTANT FUEL PUMP NOTE

The original location for the mechanical fuel pump is at the top rear of the intake manifold. The fuel pump mounts atop the intake manifold, and the fuel pump pushrod engages the cam's eccentric by passing (vertically) through a steel bushing located in the rear floor of the lifter valley.

The steel bushing features a machined groove around its outer perimeter, with a small orifice hole in the groove. The groove allows oil (pushing up through the main passage) to pass around and run forward through the lifter oiling tube.

The small orifice hole in the bushing allows feed oil to enter the bushing inner diameter and lube the fuel pump rod. This bushing would have been removed prior to block machining/cleaning and must be reinstalled.

However, the OE-style mechanical fuel pump may not be sufficient to feed a multiple-carb setup (making an electric pump the wise choice).

It's important to note that if you don't run the mechanical fuel pump, the small oil hole in the bushing will allow oil to escape under pressure, resulting in a slight reduction of oil pressure. (I admittedly don't know exactly how much of a drop would occur.)

So, if you don't plan to run the mechanical fuel pump, you need to block this small orifice hole in the bushing (via brazing) before press-fitting the bushing into the block.

I didn't realize this problem until after reinstalling the cleaned bushing into the block. Rather than remove the camshaft and the rear cam bearing (in order to drive the steel bushing out of the block again), I





When installing main bearings, make sure that the saddles and rear of the bearings are clean and dry. Oil trapped between the bearing and saddles can create tight installed bearing oil clearance.



When installing the crankshaft, do not immediately tighten the main cap bolts to spec. Begin by hand-snugging to about 5-7 pound-feet, then tighten in stages while gently rotating the crank back and forth and tapping the crank fore/aft with a rubber mallet. It may sound nit-picky, but it's worth the effort.

decided to take an easier route. Since the goal is simply to block off the small orifice hole in the bushing, I made an aluminum insert tube on my lathe.

The tube press fits into the bushing, leaving the vertical drain hole open (from lifter valley to rear cam bearing) while still allowing oil to run around the bushing's outer groove. In this case, my steel bushing's I.D. measured 0.441-inch. I machined the aluminum tube with an outer diameter of 0.4425-inch (for a 0.0015-inch interference fit).

I started with a 0.500-inch O.D. aluminum tube, machining the main body down to the 0.4425-inch O.D., but leaving a 0.500-inch diameter top flange (hat) to serve as a dead-stop during installation. I also turned down the bottom tip area of the tube to 0.040-inch (about 0.250-inch from the bottom) to aid in initial entry and centering.

If you opt to make this insert tube, use my dimensions as a general reference only, since your pump rod bushing's inner diameter may differ. Original factory tolerances and age can easily combine to result in bushing diameter variance. Measure your bushing I.D. first.

Of course, if you bothered to read this, you're already aware of the procedure, so brazing the orifice shut will be the simple solution, in which case you won't need to fabricate this insert tube.

I wanted to mention this so that you're aware of the need to block off the small oil feed hole in the fuel pump rod bushing in case you don't plan to run the mechanical pump. If you braze the orifice shut before installing the bushing, be sure to carefully grind the brazed area flush with the bushing's outer groove to avoid blocking oil flow around this groove.

#### TIMING COVER

The 8BA features a timing cover that doubles as a distributor housing. Ford has a few different versions of this cover (cast iron, aluminum, and some with and without a lower guide for the distributor shaft).

My cover is the cast iron version without the lower stop-guide. I degreased and bead-blasted the housing and hone-cleaned the distributor bore. I then had the unit powder-coated in a satin wrinkle black finish

at Greber Powder Coating in Elyria, Ohio.

With a timing cover gasket RTV-glued to the block, I installed the cover by first angle-inserting its power front seal groove over the one-piece front seal, then seating the cover to the block carefully. Once in place, I used a rubber mallet to tap the cover home (the rear of the cover registers tightly to the block).

It's important to make sure that the cover is fully seated to the block before

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## CRANK &amp; ROD CLEARANCE SPECS &amp; RESULTS

| FORD SPECS  |                   |
|---|-------------------|
| Main bearing clearance                                | 0.000" to 0.003"  |
| Crank endplay   | 0.002" to 0.006"  |
| Rod bearing clearance                                 | 0.0005" to 0.003" |
| Rod side clearance                                    | 0.006" to 0.020"  |
| OUR MEASURED RESULTS                                  |                   |
| Main bearing clearance                                | 0.0025"           |
| Crank endplay   | 0.003"            |
| Rod bearing clearance                                 | 0.002"            |
| Rod side clearance                                    | 0.020"            |
| 8BA BORE/STROKE                                       |                   |
| OE BORE   | 3.1875            |
| OE STROKE   | 3.750             |
| 3.1875 x 3.1875 x 3.750 x 0.7854 x 8 CYL = 239 CID    |                   |
| OUR BORES   | 3.3125 (+0.125")  |
| OUR STROKE  | 4.125             |
| 3.3125 x 3.3125 x 4.125 x 0.7854 x 8 CYL = 284.39 CID |                   |

## FASTENER TORQUE VALUES

|                        |   |
|------------------------|---|
| MAIN BOLTS             | 105 lb-ft   |
| ROD BOLTS              | 45 lb-ft (w/ARP moly) (stretch not to exceed 0.0047")<br>(Our rod bolts are ARP 8740 3/8" dia. x 1.600" shank length) |
| CYLINDER HEAD BOLTS    | 60 lb-ft (in three steps)<br>(60 lb-ft per Edelbrock, OE spec is 65-70)   |
| WATER PUMPS            | 23-28 lb-ft   |
| CAMSHAFT TIMING GEAR   | 15-20 lb-ft   |
| INTAKE MANIFOLD BOLTS  | 12 lb-ft, followed by a final 24 lb-ft  |
| TIMING COVER           | 13-18 lb-ft   |
| OIL PUMP TO BLOCK      | 12-15 lb-ft   |
| OIL PUMP COVER PLATE   | 7-10 lb-ft  |
| OIL PUMP PICKUP        | 80 lb-in  |
| OIL PAN                | 15-18 lb-ft   |
| FLYWHEEL TO CRANK      | 75-85 lb-ft   |
| EXHAUST MANIFOLD       | 25-30 lb-ft   |
| WATER OUTLETS          | 12-15 lb-ft   |
| CLUTCH PRESSURE PLATE  | 17-20 lb-ft   |
| BELLHOUSING TO BLOCK   | 37-42 lb-ft   |
| STARTER BOLTS          | 15-20 lb-ft   |
| OE FUEL PUMP           | 6-9 lb-ft   |
| GEN/ALTERNATOR BRACKET | 55-70 lb-ft   |

attempting to tighten the bolts (otherwise you risk breaking the cast iron cover). The stainless steel socket head cap screws, provided in a timing cover kit from Totally Stainless, were snugged to 15 pound-feet

in a crisscross pattern.

While I noted earlier that the engine was done, I've since decided to re-do the water pumps. The pumps (new units from Egge) are exact cast iron reproductions of the

originals, with the exception of sealed shaft bearings (the originals featured bushings that required periodic oiling maintenance).

After living with the black-painted, rough-textured cast iron pumps for a while, I've decided to have the pumps and pulleys fully polished and triple-chrome-plated. This will be performed by the folks at Tuff Stuff (the source for my chrome alternator).

Tuff Stuff's prep and chrome work (all performed in-house at its Cleveland manufacturing facility) is top-notch, so I'm looking forward to slapping these mirror-like pumps back onto the block. The polished and chromed water pumps and pulleys will add some much-needed pizzazz and contrast to the front of this engine.

The timing cover/distributor housing will remain in a black wrinkle powder-coat finish to provide a nice contrast between the red block and chromed pumps.

## INSTALLING RODS &amp; PISTONS

Now that our piston domes have been CNC lathe-cut at G.L. Heller, it's time to perform final piston/rod installation. Before installing the rings, I first check the piston ring fit of each ring at each cylinder bore.

Ideally, with our 3.3125-inch bore diameter, our top ring end gap should be about 0.015-inch and our second ring gap should be around 0.012-inch. Top ring gaps generally require about 0.0045-inch per inch of bore diameter; and second ring gaps about 0.0035-inch per inch of bore diameter.

Our Total Seal rings were boxed for a 3.312-inch bore and were supposedly file-to-fit. However, upon checking, the tops had a 0.027-inch gap and seconds had a 0.015-inch gap. I didn't really like the big gaps, so I purchased a set of Hastings rings designed for our plus-0.125-inch oversize bores, and they were livable. Top gaps were 0.019-inch and second ring gaps were 0.014-inch.

Instead of fit-checking the rings to one bore, I carefully fitted each individual ring to all cylinder bores, recorded each finding, and then dedicated and organized a set of rings to specific cylinder locations to assure the best fit. All pistons, connecting rods, rings and rod bearings were carefully organized on my Lista workbench, with each group labeled per cylinder location.

Installing the SCAT rods to the Egge pistons was a breeze. The wrist pins were



full-floaters and were secured with C-clips (supplied with the Egge pistons). This style of clip is easy to install. Simply squeeze the inboard fingers with needle-nose pliers, insert into the piston pin bore and release the clip into its retaining groove. Rotate the clip around a bit to make sure that it's fully seated in the groove.

Install one clip in one side of the piston pin bore. Next, lube the wrist pin (again, I prefer Royal Purple Max Tuff assembly lube). Insert the small end of the connecting rod into the piston underside between the pin bosses.

With our pistons, there was no need for piston-to-rod orienting—since the piston design is symmetrical, direction in the bore doesn't matter. Push the wrist pin into and through the rod small end bushing until the wrist pin stops against the pre-installed wire clip. Install the remaining clip on the opposite side of the wrist pin.

Note that immediately prior to rod-to-piston assembly, I once again painstakingly cleaned each rod, piston, rod cap, rod bolt, rod bearing and piston ring. I never assume that a previously cleaned component has remained clean while stored.

Install the upper rod bearing to the rod saddle (never lube the saddle or backside of the bearing; these surfaces must remain dry), aligning the locating notch and tang. Press firmly with clean fingers to verify full bearing seating. Make sure the ends of the bearings are even and flush with the rod cap mating surfaces.

The cylinder bores were checked for cleanliness. Using a white non-lint paper towel, I carefully wiped each bore until the paper towels remained white, with no residue evident. I then oiled each cylinder wall, using 30W non-detergent oil.

Using an adjustable piston ring compressor, the ring package was compressed, and each rod/piston assembly was carefully slid into its bore until the rod's upper bearing lightly contacted the crank rod journal. The rod cap (with bearing) was then located to the rod (with the chamfered side of the rod and cap facing the crank journal fillet).

Each ARP rod bolt was coated (threads and head underside) with ARP moly lube and installed finger-tight. Instead of drawing the cap to the rod by tightening the rod bolts, I first tapped each rod cap into semi-final position using a clean plastic



Prior to final assembly, all components were detail-cleaned and organized. All rings were file-fit for each dedicated cylinder.



The pistons we used feature full-float wrist pins. C-clips are installed to retain the pins. Installation is easy with needle-nose pliers.



With valves and pistons installed, decks were carefully cleaned of any oil prior to cylinder head installation. All head bolt holes were cleaned using a dedicated thread chase during initial block prep.

hammer.

The ARP 8740 rod bolts (3/8-inch diameter by 1.600-inches long) were then tightened to a value of 45 pound-feet. I checked rod bolt stretch during tightening, using a stretch gauge.

SCAT specifies that these rod bolts should not exceed a stretch of 0.0047-inch. After each journal's pair of rods/pistons were installed, I rotated the crank to check rotation smoothness and resistance. By checking each pair as you go (instead of waiting until all eight are installed), you can locate and identify any problems.

#### OIL PUMP & PICKUP

I pre-lubed the new Melling oil pump with a combination of Royal Purple Max Tuff on the gears and filled the pump with 30W non-detergent oil and rotated the pump by hand several times to run the lubricant through the pump.

The pump features a gear that engages to the idler gear installed earlier. Be sure to lube the pump gear before installing the pump.

I secured the pump to the block using



Copper head gaskets are a popular choice for many flathead builds.



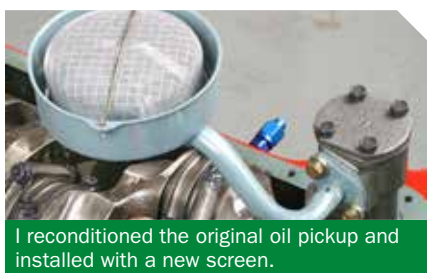
Following the advice from Best Gaskets, the composite graphite gaskets are considered a better option for performance use.



The new oil pump was oil-primed prior to installation.



Apply high-pressure lube to the oil pump gears before meshing with the cam-driven intermediate gear.



I reconditioned the original oil pickup and installed with a new screen.

a single 5/16-inch-by-18-by-1-inch hex head grade 8 bolt, lock washer and thread-locking compound on the bolt threads. The specification value is 15 pound-feet for this bolt. However, there's not a straight shot at the bolt head, so a 2-inch extension was needed on the torque wrench.

Note: whenever you extend the length of a torque wrench, you're adding leverage, so you must recalibrate in order to achieve the desired torque value. This isn't difficult. Here's the formula:

- First measure the effective length of the torque wrench (center of the drive head, where the socket or extension attaches, to the center of the grip handle). For the torque wrench I used, this length was 14.5 inches. In this particular case, I used a 1/2-inch straight extension wrench that has a center-to-center length of 2 inches. This made my torque wrench 2 inches longer.
- Length of torque wrench divided by the length of the torque wrench plus the length of the extension times the desired torque value equals the altered torque wrench setting.

In this case,

- $14.5 + 2 = 16.5$  effective torque wrench length
- $14.5$  divided by  $16.5 \times 15 =$  new torque wrench setting
- $0.87878 \times 15 = 13.18$  pound-feet
- In this case, I rounded the setting off to



Because of limited access to the oil pump mounting bolt, a 2-inch torque wrench extension was required. To achieve the spec 15 pound-feet, when using the 2-inch extension on a 14.5-inch torque wrench, I set the torque at 13.5 pound-feet.

13.5 pound-feet on my micrometer-style torque wrench.

I purchased a new oil pickup and pickup screen from Speedway Motors (I was told this would fit a center-sump oil pan). I test-mounted the pickup and test-fit my center-sump oil pan, only to discover that it wouldn't clear the sump (the new pickup was too short and was designed for a rear-sump pan).

Luckily, I still had the original (longer) pickup that matched my original center-sump oil pan.

I cleaned the pickup tube and housing thoroughly (hot tank, hot soapy water, flushed with solvent and flushed again with hot soapy water and then rinsed and air-flushed). I mounted a new pickup screen (purchased from Speedway) to this original pickup with the original wire clip. I then mounted the pickup to the pump using a new gasket (both sides of the gasket lightly coated with RTV) and two 1/4-inch-by-28-by-5/8-inch hex head bolts (with lock washers and thread-locking compound) and tightened both bolts to a value of 80 pound-inches.

As far as the oil pan was concerned, I discovered that apparently nobody makes a new replacement steel pan for the flathead, so I was forced to save my original pan.

First, I removed the original dipstick tube base (this was secured with three rivets). I cleaned, bead-blasted, primed and painted the dipstick tube a base satin black.

After hammering out a few major dents in the heavy-wall pan and finish-prepping with all-metal body filler and two coats of high-build primer (sanding each coat), we painted the pan with red basecoat and clear urethane clearcoat (same color and clear that we used on the block). I then

re-mounted the dipstick tube and base using three 10x32 stainless steel button-head screws and low-profile nylon locking nuts and a new dipstick tube base gasket (with a thin coat of RTV on both sides of the gasket).

Egge's gasket set conveniently included this gasket (even though I was told by one flathead expert that this gasket doesn't exist and that you need to make one). The end result of restoring this oil pan was spectacular—better than new by a long shot!

The very complete Egge gasket kit included two pan rail gaskets and the rear main seal set. The lower rear main seal (square-profile flexible braided rope) was fitted to the pan's rear main seal groove and trimmed at each end, leaving about 0.025-inch exposed above the pan rail surface.

The rail gaskets required slight trimming. The front of each gasket was notched to capture the front rubber crank seal, and the rear of each gasket was trimmed to clear the rear main seal ends.

The rail gaskets were positioned, temporarily using several 5/16x18 studs for location purposes. A small dab of RTV was applied at each end of the rail gaskets (both sides).

The pan was then lowered onto the studs. Once the pan was seated, I installed the Totally Stainless oil pan bolts (stainless steel socket head cap screws and flat washers), removing studs as I progressed. I initially tightened all cap screws to a value of 60 pound-inches. This is sufficient to seat the pan and to allow the RTV to spread and cure.

Once the RTV was fully cured, I re-torqued the screws to a value of 12 pound-feet (spec calls for 10-15 pound-feet).

Next time we'll tackle the heads, timing cover, twin water pumps and more. **TS**



**MIKE MAVRIGIAN** owns and operates Birchwood Automotive in Creston, Ohio, where he builds custom engines and street rods, and performs vehicle restorations. He has written thousands of technical articles, as well as nine books on automotive technology during the past 30 years. Mike can be reached at (330) 435-6347 or birchwdag@frontier.com. Visit Birchwood's website at birchwoodautomotive.com.





## Fuel Cell Surge Tank

**DeatschWerks**, Oklahoma City, presents its 2.0FST Fuel Cell Surge Tank. Offering a 2.0L tank volume, it fits standard 6-by-10-inch, 24-bolt fuel cells. Designed to work with one, two or three pressure pumps, the surge tank supports up to 2500bhp (N/A, gasoline, 40 psi) with an optional straight or angled filler neck (cap or remote fill) and four -6AN ORB ports for up to four lift pumps.

## Honda/Acura Pistons

**Wiseco**, Mentor, Ohio, presents Pistons for Honda/Acura J32 and J35 engine applications. Forged from 2618 aluminum alloy, the pistons are engineered to withstand high combustion pressures from various power-adders (turbo, nitrous, etc.) and feature internal struts for extra strength. They have a 10.5:1 compression ratio. In addition to the factory 89mm bore, they are available in 89.25mm and 89.50mm oversized versions and come equipped with a set of Wiseco XX piston rings as well as a rugged 22mm O.D. wrist pin.



## 4Runner Supercharger

**Magnuson Superchargers**, Ventura, California, offers a Supercharger Kit for 2020-22 Toyota 4Runner 4.0L V-6 applications. The bolt-on kit with calibration produces more than 335 hp and 345 pound-feet of torque at the crank. It is a fully integrated front inlet/front-drive TVS1320 supercharger assembly with a positive-displacement Roots-type design using **Eaton** TVS technology with proven OEM durability. Features include an integrated vacuum bypass for instant boost response at low engine speeds, and high-efficiency intercooler system.



## Cummins Turbo

**BD Diesel**, Abbotsford, British Columbia, presents its new BD HE351 CW Turbo Replacement for 2004.5-07 Dodge 5.9L Cummins engines. Manufactured from new parts and high-speed VSR balanced to ensure precision and quality, the stock replacement turbo includes a wastegate preset to OEM boost levels. It features a 68mm turbine wheel inducer and 60mm compressor wheel inducer.

## Bronco Programmer

**Superchips**, Bowling Green, Kentucky, presents the all-new Flashcal 1564 for 2021-22 Ford Bronco 2.3L and 2.7L engine applications. The calibration tool is a budget-friendly way to unlock numerous features not available from the factory. It also offers classic functions like speedometer correction, battery voltage readings, DTC read/clear functions and full datalogging.



## Truck Programmers

**Edge**, Ogden, Utah, presents Pulsar LT/Insight CTS3 Programming Kits for 2019-22 GM 1500 gas and 2015-19 GM Duramax diesel pickup applications. Pulsar LT offers complete adjustability of many features, all from the steering wheel controls. Without modifying the truck's ECM, Pulsar LT offers the ability to adjust throttle response, tire size, gear ratio, TPMS and top speed limiter.

## Protective Sleeves

**Heatshield Products**, Escondido, California, presents its Cold-Gold Sleeves for protecting wiring harnesses, fluid lines and mechanical linkages. The sleeves reflect up to 90% of radiant heat away from protected components, even with minimal air space. Multi-layer thermal barrier insulation topped with a specially formulated Cold-Gold outer layer provides continuous protection against radiant heat up to 1,100 degrees, and up to 500 degrees of direct-contact heat. The sleeves are available with internal diameters of 1/2 to 3 inches.



## Super Duty Air Intake

**Injen Technology**, Pomona, California, presents its Evolution Cold Air Intake System for Ford Super Duty applications. Offering dyno-proven gains of 28 hp and 63 pound-feet of torque, the systems feature a direct-fit design to integrate directly in place of the vehicle's stock intake tract. Utilizing stock mounting points for a simple installation with no cutting or drilling required, the stock air inlet location has been shaped for additional flow and a snug fit.

## Accessory Drive System Pump Mounts

**Aviaid Oil Systems**, Chatsworth, California, presents a series of Pump Mounts that adapt the company's dry or wet sump oil pumps to modular accessory drives or Sprint car magnet drives. The primary driveshaft of the pump (hex or keyed) connects directly to the geared accessory drive. Aviaid manufactures a wide variety of external oil pumps that range from compact single-stage wet and dry sump units to multi-stage dry sump applications in both Series 1 and Series 2 designs.



## Gasket Maker Online Training

**Permatex**, Solon, Ohio, offers expert-level Online Training for counter people and professional technicians on the topic of Chemical Gasket Makers. The online training modules and live training sessions are available to registered users and can be accessed by visiting the company's training portal. Each module includes informational videos presented by industry professionals, including Permatex-sponsored Formula DRIFT Pro driver Dylan Hughes, demonstrating proper usage and tips and tricks for better applications.



## Hydraulic Roller Lifters

**COMP Cams**, Memphis, presents Evolution Hydraulic Roller Lifters. Designed to be more responsive and produce less noise, the lifters were created using patented Hydraulic Cartridge Technology (HCT) for added reliability.

## Ford EcoBoost Piston Kit

**MAHLE Motorsport**, Fletcher, North Carolina, presents a 4032 alloy Ford EcoBoost 2.3L PowerPak Plus Piston kit. Designed for heavy-duty appli-



cations, the kit adds strength with a thick slipper skirt-style forging and enhanced OE crown design with increased radius, and allows for a tighter piston-to-wall clearance for quieter cold startup.





**Ford Turbo Kit**  
**Edelbrock**, Olive Branch, Mississippi, presents its Twin-Force Stage 3 Turbo System for 2017-20 Ford F-150/Raptor 3.5L H0 V-6 EcoBoost applications. Featuring an electronic booster, Stage 3 calibration

and a tuner, the kit delivers a 200-hp increase at the tires over stock. The direct bolt-in **Garrett** turbos incorporate the latest in turbocharger technology, offering a 54% increase in airflow over the factory units, while a 60mm billet compressor wheel improves efficiency and flow.

## Billet Plates

### Blower Drive Service (BDS),

Anaheim, California, offers a large selection of high-performance Billet Injector and Xcelerator plates. An in-house manufacturing process ensures quality and a precision fit. Models come in a variety of designs for use with BDS blowers and other superchargers. Related accessories including fuel rails and fuel lines are also available.



## Diagnostic & Calibration Support

**HP Tuners**, Buffalo Grove, Illinois, presents its Tuning and Diagnostic Support, now available for new vehicle models and years including 2019 Toyota Tundra Flex Fuel and 2019-21 Tundra non-Flex Fuel, 2016-19 Audi RS3 and 2022 Chevrolet Colorado ZR2 2.8L applications. The vehicles have full-functionality support from the MPVI2+ interface device and VCM Suite, including VCM Editor and VCM Scanner. Drivers can control air, fuel and spark parameters and vehicle diagnostics. **TS**



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Fuel additives can offer your customers some relief from high gas prices.

# Something to Add

The right type of fuel additive plays a critical role in engine protection.

By Josh Steinmetz

**W**ith gas prices hitting a seven-year high, your customers are probably on the lookout for products that maximize performance and save money at the pump. One way to do this is through fuel additives.

These convenient and effective performance enhancers can maximize a vehicle's performance in a variety of ways, and offer you a chance at add-on sales and increased customer loyalty. Here's how:

## ARE FUEL ADDITIVES NEEDED?

The right type of fuel additive plays a critical role in protecting the engine due to the sophistication of today's mechanical designs. Benefits of fuel additives include enhanced engine longevity and improved fuel efficiency.

Don't be surprised if it takes a few tanks of treated fuel to notice a difference. Fortunately, your customers' patience will pay off. As a rule of thumb, using fuel additives every 6,000 to 10,000 miles in gas vehicles should get the job done in daily drivers.

For diesels, it's best to treat each tank

with fuel additives. The quality of today's ULSD (ultra-low-sulfur diesel) can vary drastically straight from the pump, and a lack of lubricity has been shown to cause issues including the failure of vital fuel system parts.

Using the proper fuel additive can help consumers hold onto their vehicle longer while saving money during ownership.

## THE SCIENCE BEHIND FUEL ADDITIVES

As complex pieces of machinery, vehicle engines need to be maintained to perform properly. For diesel fuel applications, the factories are obligated to distribute the newer ultra-low-sulfur fuel with less lubricity.

Biodiesel contains moisture. Ethanol and methanol configurations require moisture to be removed from the fuel. With the different hydrocarbons and polar solvents in fuel mixtures, the unknown properties of the fuel at the pump can cause some harmful results in engines.

Proper fuel additives can help distribute the moisture, boost cetane, remove internal



As complex pieces of machinery, vehicle engines and components need to be maintained to perform properly.

deposits and buildup, and support the various fuel blends, so the engine operates more efficiently with less wear. Especially with diesel fuel, the proper additive helps restore the lubricity filtered out at the refinery.

Not all fuel additives, however, are created equal. Trustworthy manufacturers and scientifically proven formulas is the recipe for high-quality fuel additives. Bottom line, when proper research and science go into a product, your customers' vehicles will perform better.





Drivers will quickly notice mileage gains thanks to clean injectors with a better spray pattern and improvements to the combustion process.

### THE BENEFITS OF FUEL ADDITIVES

Research shows that using the proper fuel additives will produce several benefits over pump fuel alone. Here are some benefits of fuel additives and how they can maximize vehicle performance:

#### *Increase the Life Span of Fuel System Components*

Think of additives as insurance for a vehicle's performance. Fuel additives can help remove the buildup of deposits in the fuel system and its components, resulting in less wear and tear and faster acceleration response.

Removing and preventing carbon buildup will increase cylinder head compression, leading to smoother engine starts. Plus, the lack of lubricity in ULSD is a main reason behind the catastrophic failures of CP4 fuel pumps.

Fuel additives will improve the fuel's lubricity, preventing scarring and wear on the fuel system's components and drastically reducing the possibility of CP4 fuel pump failures.

#### *Save Money*

Customers may need to pay more money upfront for fuel additives, but they'll quickly notice the cost savings down the road. Rather than breaking the bank on preventative maintenance and repairs, fuel additives can prevent wasting fuel due to partial combustion or performance issues related to contaminants collecting in the engine.

#### *Increase Fuel Efficiency*

Fuel additives help vehicles use every

ounce of gas or diesel. When fuel goes through the combustion process, fuel additives support the vehicle by burning the fuel more effectively, adding

increased power to the engine.

As a result, drivers will quickly notice mileage gains, thanks to clean injectors with a better spray pattern and improvements to the combustion process (cetane in diesel.)

#### *Prevent Breakdowns*

Corrosion on metal parts can lead to premature breakdowns. Engines will stay newer longer with corrosion inhibitors and won't need frequent maintenance checks or costly repairs.

#### *Reduce Carbon Emissions*

Fuel additives remove carbon deposits, leading to better combustion and fewer carbon emissions.

#### TOP FUEL ADDITIVES

With so many fuel additives on the market (all designed for different purposes), how do you choose which ones are right for your customers? For maximum protection and performance gains look for multipurpose additives that perform more than one function. You'll want more than just a cetane improver, lubricity additive or injector cleaner. Each of these can help improve



Benefits of fuel additives include enhanced engine longevity and improved fuel efficiency.

fuel economy, but together the gains are even greater.

Offer your customers a well-known brand and complete fuel additives. Look at the reviews of each manufacturer and talk with their reps. If they can educate you as a shop, you will be successful and earn the business of the customers that walk through your door.

By recommending a product that saves your customers today, they will think of you tomorrow when they need service. The time and money they save will come back to you again and again. **TS**

**JOSH STEINMETZ** is digital marketing & eCommerce manager for Lubrication Specialties Inc. (LSI), manufacturer of Hot Shot's Secret high-performance fuel and oil additives and lubricants.

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## AFTERMARKET ACCESSORIES

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# Glowing Reviews

Illuminating trends in the light bar market. //////////////// By Jef White

If seeing is believing, then there's no doubting the power of aftermarket light bars. An industry staple that's keeping up with the times, these powerful units continue to receive glowing reviews from shop owners and drivers alike.

Found almost everywhere including off-road trails, desert races, overlanding camps,

construction sites or parking lot car shows, aftermarket light bars are popular because they provide real-life safety, utility and aesthetic benefits to a wide variety of vehicles.

The low power consumption of LEDs adds to their appeal, and suppliers are stepping up with color, beam pattern and lens cover options that fit any need or personality.

Meanwhile, intelligent wire harness designs and clever mounting options make basic installations quick and easy and custom projects possible.

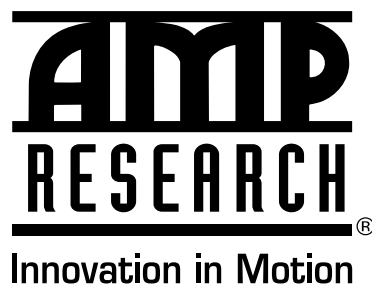
Suppliers offer additional information on this exciting niche, highlighting information and trends to help you and your customers see the light.



The light bar market is night and day from where it was 10 years ago. (Photo courtesy Baja Designs)

Today's light bar systems are brighter and smaller than ever. (Photo courtesy Baja Designs)





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## HOT LIGHT BAR PRODUCTS

■ **HOT PRODUCT:** XL Linkable Light Bar

■ **FEATURES & BENEFITS:** Versatile bar allows lights to be added or taken away to change the desired length; offers the ability to independently aim individual lights, including making the light shine straight or in an arc.

*Baja Designs  
Brennan Scully  
Sales Manager*

■ **HOT PRODUCTS:** Body Armor 4x4 Light Bars

■ **FEATURES & BENEFITS:** Available in 18-inch single-row, 20-inch blackout double-row and 30-inch blackout double-row configurations; good looks; essential features without breaking the bank; attractive beam patterns usable off-road or in inclement weather; brackets and wire harness included.

*Body Armor 4x4  
Nupesh Patel  
Body Armor 4x4 Brand Manager*

■ **HOT PRODUCTS:** Black Magic Series LED Bars & Pods

■ **FEATURES & BENEFITS:** Sleek blacked-out design; powerful light output; brand recognition; attractive price point.

*HELLA  
John Roney  
Sales Channel Director – Retail/  
Performance/HD Aftermarket*

■ **HOT PRODUCT:** Super Nova Strobe Light Bar

■ **FEATURES & BENEFITS:** A revamped light bar quiver killer; popular on tow trucks, snowplows, and construction and emergency vehicles; acts as a sequential strobe light bar or a traditional dual color-emitting light bar at the flick of a rocker switch; wire harness included.

*Quake LED  
Jack Biltmore III  
Master Product Developer*

■ **HOT PRODUCT:** Unite Series Modular LED Light Bar System

■ **FEATURES & BENEFITS:** Modular interchangeable design allows customization for each application; spot, flood and elliptical beam pattern pods; clear, selective yellow and amber lenses; frosted or blackout lens finishes; 6- to 50-inch straight and 20- to 50-inch curved length options.

*Vision X Lighting  
Brandon Nelson  
Marketing Manager*



A market staple that's keeping up with the times, light bars continue to receive glowing reviews. (Photo courtesy Body Armor 4x4)



### A CHANGING MARKET

Even if you sold a customer a light bar just a few years ago, it may be time to discuss an upgrade. That's how fast the industry is changing.

"The light bar market is night and day—literally—from where it was 10 years ago," says Brennan Scully, sales manager for Baja Designs. "The lights that are coming out now are able to reach distances that were only previously achieved with HID lighting, while providing a full pattern that allows the customer to run fewer lights to get the job done. We have also introduced a full line of laser lighting, which gets the light out even farther."

John Roney, sales channel director – retail/performance/HD aftermarket for HELLA, notes that when they first hit the market about 15 years ago, "the sole purpose of the light bar was to blast as much light as possible."

Now he sees the market moving more toward an overall appearance product.

"It still needs to be bright, but look good as well," he says. "This was our motivation behind developing the Black Magic series of light bars."

Innovation is driving the industry forward at a breakneck pace.

"From the big-name brands to small startups, technology is still evolving," says Nupesh Patel, brand manager for Body Armor 4x4. "Before the LED



Customers almost always prefer a professional installation for their light bar products. (Photos courtesy Body Armor 4x4)

craze, it was all about halogen. Then came HID and retrofitting them into the halogen housings. Now it is all about LEDs, which are fitted into every housing imaginable. Reflectors, IP ratings, beam pattern—these have all evolved into something greater."

Even the way they are sold is shifting. "Advancements in LED chips, low-cost manufacturing and eCommerce have completely changed the game," says Brandon Nelson, marketing manager for Vision X Lighting. "Light bars are getting brighter and brighter every year as LEDs get more efficient. The options in performance, style and quality have grown tremendously as well. With eCommerce booming, the LED light bar market space has become extremely competitive, with both the low-cost and high-end light bars."





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## NEARLY HALF OF ALL LATE-MODEL PICKUPS ARE ACCESSORIZED

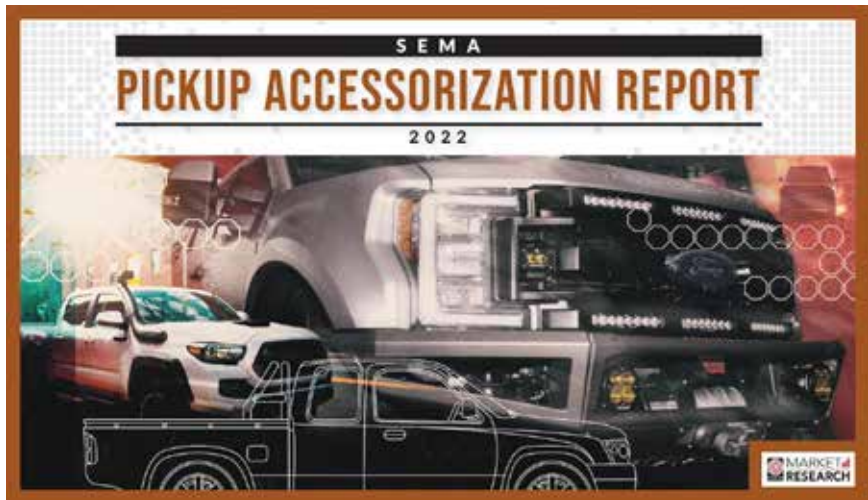
New research from the Specialty Equipment Market Association (SEMA) finds that 49% of all late-model pickups are modified with specialty equipment parts.

The finding comes from the 2022 SEMA Pickup Accessorization Report, which provides a comprehensive review of how the truck accessorization landscape is evolving, including sales forecasts, the types of parts pickup accessorizers buy and how they buy them.

“The pickup truck market is the largest segment of the specialty automotive aftermarket and a key opportunity for businesses,” says Gavin Knapp, SEMA director of market research. “SEMA’s newest market report helps members understand where the opportunities are and how to best connect with pickup accessorizers.”

Findings from the report include:

- Pickup owners spent \$16 billion on specialty equipment parts in 2021
- There are more than 29 million late-model (2010 and newer) pickups on the road, and about half of them are modified
- 62% of late-model pickup accessorizers buy off-road-focused parts



The 2022 SEMA Pickup Accessorization Report provides a comprehensive review of how the light-duty truck accessorization landscape is evolving. (Image courtesy SEMA)

- for their trucks
- 84% of late-model pickup accessorizers plan to make additional modifications in the near future
- 45% of specialty equipment businesses see electric pickups as an opportunity

“As pickups remain the single biggest segment in the specialty equipment parts market, SEMA’s report will help businesses learn more about pickup

owners and what they do after their parts are installed, and provide analysis of emerging markets for compact and electric pickups,” Knapp says.

Download the 2022 SEMA Pickup Accessorization Report at [sema.org/research](http://sema.org/research).

*Editor’s note: This item originally appeared on [theshopmag.com](http://theshopmag.com). Visit today and sign up for the free daily eNewsletter.*



Consumers appreciate light bars that look good whether the lights are shining or not. (Photo courtesy HELLA)



### BRIGHT IDEAS

The advancements allow manufacturers to change the market in unexpected ways.

“Quake LED likes to think outside the box and utilize new technologies to develop new light bar designs that incorporate never-before-seen lighting features, which add more function, more purpose and more value than standard on/off, white beam-only bars,” says Jack Biltmore III, master product developer.

And, while the versatility of today’s bars allows plenty of creativity when designing and installing a lighting system, there’s still room for targeted products that work particularly well for certain makes and models.

“We have created a category around all of our lighting products that are vehicle-specific,” Scully says. “These are easy installs





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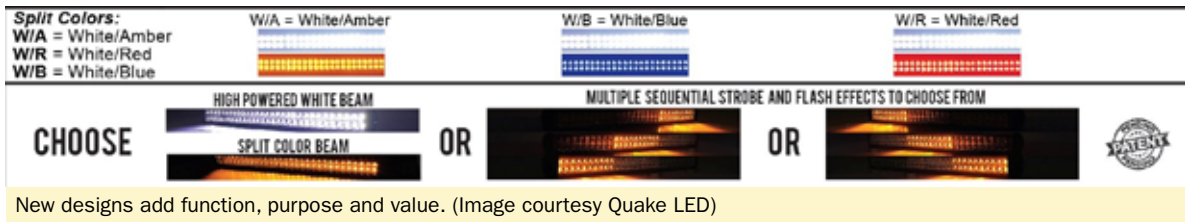
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with plug-and-play wiring. This means the shop can gain additional revenue on jobs that should take less than an hour to install.”

Nelson also sees cross-selling opportunities to drivers who want more than just a bar full of lights.

“There’s the chance to introduce customers to more accessory lighting options,” he says. “Once customers see the advantages of aftermarket LED lighting on one part of their vehicle, they want more.”



## LIGHTING THE WAY

For shops, the growth of the light bar market is due in part to its natural tendency to promote add-on sales opportunities.

“Like most aftermarket accessory sales, the additional products can really add up. Rarely have I seen a customer only buy a light bar. They are usually looking for cubes and pods to complement the light bar, as well as covers, wiring harnesses, mounting brackets, switches and controllers,” Roney says.

And it doesn’t stop there.

“Then there is the install revenue,” he continues. “Today’s auxiliary lighting is more technologically advanced and more complicated than ever before. This scares some people, and they will be looking for help.”

Light bars complement most popular aftermarket accessories.

“The majority of customers will always opt of have a light bar installed, which is just another form of revenue for the shop,”

## 2023 GMC CANYON AT4X

The 2023 GMC Canyon midsize truck line includes the new Canyon AT4X option and its available Edition 1 package of off-road-friendly add-ons including a 30-inch light bar.

“Boasting a fully redesigned exterior with a standard factory lift and widened track across the lineup, a new premium suite of advanced technology and an all-new interior design, the next-generation Canyon is built from the ground up to conquer any terrain,” GMC notes in the new model introduction.

Building on the success of AT4, the AT4X sub-brand is “the ultimate expression of GMC’s commitment to delivering serious off-road capability,” the company notes. First introduced on the 2022 Sierra, the

AT4X trim is aimed at building off-road credibility.

“GMC is flexing the might of our off-road muscle,” says Duncan Aldred, GMC global vice president. “Canyon benefits from key learnings gained from our AT4 strategy to bring customers the most advanced off-road midsize truck.”

Inspired by the Canyon AT4 concept first introduced in 2021, the Canyon AT4X boasts a factory lifted, ultra-wide track and comes standard with 33-inch tires, Multimatic DSSV dampers, front and rear e-lockers, underbody skid plates and the AT4X-exclusive Baja drive mode.

The Canyon AT4X’s factory lift enables

10.7 inches of ground clearance standard and a 36.9-degree approach angle. It will also be the only trim to offer the available Edition 1 package, which includes:

- Front- and rear-facing underbody cameras with wash function
- Off-road front bumper with safari bar
- Front 30-inch off-road grille light bar
- Winch by COMEUP
- 17-inch beadlock-capable wheels
- Reconfigurable bed rail system
- Performance front skid plate
- Unique Edition 1 tailgate badge

*This article originally appeared on theshopmag.com. Visit today and subscribe to the daily eNewsletter.*



The Edition 1 package for the Canyon AT4X pickup includes a 30-inch front light bar and other accessories. (Photo courtesy GMC)





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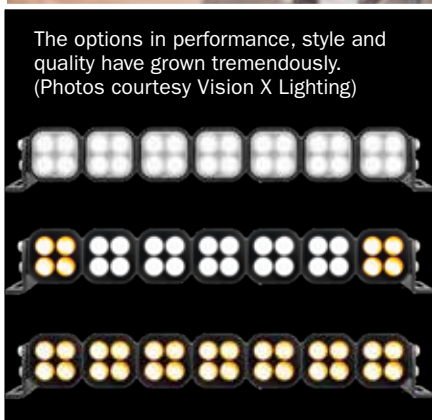


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The options in performance, style and quality have grown tremendously. (Photos courtesy Vision X Lighting)

Light bars are getting brighter and brighter every year as LEDs get more efficient. (Photos courtesy Vision X Lighting)



says Patel. “Plus, Body Armor light bars are meant to fit our bumpers without any hiccups while still fitting most other brands as well.”

And most are extremely versatile.

“Light bars can be used in many configurations other than the traditional forward-facing auxiliary light,” Biltmore notes. “We see a gigantic trend in our light bars being installed rear-facing and on the sides, especially on overland vehicles and commercial trucks, which provides ample lighting at the campsite, on backcountry roads or for late-night projects. What used to be only a one light bar sale is now possibly a four light bar sale.”

## SHINING EXAMPLES

If customers are skeptical of light bar performance claims, they should know that the

products are tested in some of the most severe conditions imaginable.

“We recently teamed up with Collins Motorsports in the desert outside of Las Vegas to run our Black Magic bars on one of its race trucks. Everyone present was pleased with the performance,” notes HELLA’s Roney. “These same bars have run the Baja 500 and will be on the truck for the Baja 1000. Off-road racing is more popular than ever. Enthusiasts will be looking for the products professional drivers run, and the retailer who carries these top brands will get the sale.”

In an industry that’s advancing quickly, suppliers are working hard to keep pace.

“We are always innovating and testing new technology. Our objective is to bring the brightest lights in the smallest package,” says Scully of Baja Designs. “Shops can be on the lookout for some new SAE and DOT offerings that will allow their customers to use our lights worry-free.”

In fact, some suppliers see benefits in partnering with fellow aftermarket manufacturers.

“Our program with Royalty Core where

we offer our lights as a packaged deal with their custom grilles is a great example of the potential in the light bar market,” notes Vision X’s Nelson. “Working with manufacturers and brands to cross-sell aftermarket LED lighting with current products they already sell is one of easiest ways to enter and grow the market.”

There no longer seems to be a reason to turn away any interested customers.

“Light bars are not only limited to Jeeps, Broncos or trucks anymore,” says Biltmore. “Quake LED’s collaboration with Freak Show Build vehicles at the SEMA Show has successfully proven that LED light bars are for all vehicles—even freak vehicles! Many ordinary vehicles taken off-road can also utilize this lighting technology.”

And don’t forget to include your dealership clients as well.

“Our recent projects include outfitting a dealer with bumpers, light bars and pods on their 2021 Ram 1500 and 2012 Toyota Tacoma, which turned into outfitting the rest of the vehicles with Body Armor 4x4 products,” says Patel. **TS**



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Power Trucks USA locations offer truck, Jeep, car and SUV aftermarket accessory sales, service and installations.



# Too Good Not to Share

The Power Trucks USA plan puts customers first.



Jeremiah Fiel, managing partner at aftermarket accessory shop franchisor Power Trucks USA, has spent a career under-promising and over-delivering.

In the tough times of a pandemic followed by supply chain stresses, aftermarket shops need to go above and beyond for customers to keep sales on track.

Such actions take many forms, from helping a supplier buy inventory they don't need right away to giving a regular customer a break on pricing if they're having financial troubles.

Jeremiah Fiel, managing partner at aftermarket accessory shop franchisor Power Trucks USA, says that if your shop is experiencing added pressures, you're not alone.

"I recently had a friend text me a photo of his truck with four brand-new tires from my shop," Fiel recalls. "He commented that he paid almost \$600 apiece—\$200 more than the last time he replaced tires. I texted him back that I was very sorry, but



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JL Wrangler UnderCloak System  
JL Wrangler Fender Gutz Delete Bracket  
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JK Wrangler UnderCloak System  
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JK Wrangler Front Bumper

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Adventure Rack Systems, a MetalCloak owned company, was founded on a rich history from the world of off-roading. Together, these two entities drive the purpose-built designs behind the entire rack system lineup that ARS has to offer. Designed specifically for Jeep JK, JL Wranglers, JT Gladiator and even Toyota Tacoma, these products withstand the punishment that other systems simply cannot. Extreme terrain and technical trails are no match for our rack systems, and we strive to ensure that your cargo finds its final destination intact and without casualty. We also strive to keep products in stock, ready to ship and backed with exceptional customer service and support. Our focus is keeping you and your customers happy prior to, during and after the entire sales, installation and implementation of our products.

So, whether its roof top tents, kayaks, bikes, lumber, rockcrawling, rocklanding or overland, our U.S. Made rack systems offer that peace-of-mind that allows you to simply enjoy the adventure without a worry in the world.



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MetalCloak is a Systems-Based Company. Our philosophy is to develop systems that work incredibly well together, designing every individual part to function and improve that system.

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# Too Good Not to Share

my supplier prices for tires had gone up. “He answered, ‘Don’t worry buddy, you were still cheaper than anyone else.’”

Fiel calls this the *chicken wing* rule. Recently, while eating at a favorite lunch spot, the manager shared that the cost of wings had gone from \$80 to \$225 a case in recent months. The manager said he’d have to charge \$35 a meal to get the same profit he had in the past.

Instead, the manager decided he would just have to make less money for a while to keep in good standing with his customers. Fiel agrees with the philosophy.

“I’ve benefited from playing the long

game rather than trying to realize a short-term gain,” he explains.

## KEEPING BUSINESS STRONG

Power Trucks USA locations offer truck, Jeep, car and SUV aftermarket accessory sales, service and installations. Products and services include everything from lift kits, wheels, bumpers, lighting, bed covers, toolboxes, hitches and winches to window tinting, audio systems and floor mats.

Fiel has spent his career under-promising and over-delivering. His habit of intense retail customer satisfaction and cultivating mutually beneficial relationships with busi-

ness accounts and suppliers turned into his company’s greatest asset over the past two years, he reveals.

He summarizes his business philosophy into five nuggets of advice:

## 1 FIGURE OUT A WAY TO MAKE THINGS WORK FOR THE CUSTOMER

Fiel says his business is built on the robust enthusiasm customers have for their trucks and Jeeps and what they can do with them—a passion he wholeheartedly shares.

Truck and Jeep owners want to create something unique to their own identity and functional to take them to the off-road places they want to explore. The company works every day to deliver those possibilities.

“I’ll give a job away if a customer hasn’t been treated right,” Fiel reports. “My customers appreciate that kind of loyalty from me, and in return they stay loyal to me.”

He also keeps good relationships with his automotive dealer accounts. The dealers offer him a steady flow of trucks for upgrades and add-ons.

And, since dealerships don’t usually need their vehicles back the next day like retail customers do, these projects allow for some flexibility in the shop’s job schedule.

## 2 EXPLAIN THINGS & EDUCATE YOUR CUSTOMERS

A part of the business Fiel enjoys is being transparent and informative with customers. They always appreciate it, he notes.

“I’ll talk to a client for as long as they want to about what we’re doing to their vehicle and why,” he says. “It’s not an imposition.”

Fiel wants his customers to have insight into why the shop does what it does to their vehicle. It is another step toward building trust.

When supply chain issues forced higher prices for his products, he was honest with his clients. And because he already had relationships established with them in good times, he says they have been understanding.

Customers, too, have price pressures, and they need to know what he knows so they can plan their purchasing decisions. Such options are important, as many are looking to refresh and update their rigs



Products and services include everything from lift kits, wheels, bumpers, lighting, bed covers, toolboxes, hitches and winches to window tinting, audio systems and floor mats.

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Customers appreciate working with shops that are transparent and informative when it comes to their vehicles.

the shop's overall business, as customers continue to buy upgrades.

Because he considers his supplier accounts just as important as his retail customers, Fiel has helped by buying extra inventory on a regular basis. He's steered clear of holding onto a lot of extra stock in the past, but since the pandemic he's found that higher inventory levels have helped to avoid some of the supply chain slowdowns that inconvenience his retail customers.

"It's turned into a win-win," he says.

## 4 THINK ABOUT HOW TO DIVERSIFY

Fiel has never been a business owner who gets comfortable with the way things are. He is always looking for new opportunities to meet customer needs. The philosophy has served him well since he started in the automotive sector spraying truck bedliners

In addition to serving consumers across the country, Power Trucks USA ([powertrucksusa.com](http://powertrucksusa.com)) offers auto expertise and a comprehensive array of aftermarket products and customization options to leading dealerships, so these businesses are better able to give their clients the products and services they need to optimize their rides.

The business is built on the enthusiasm of truck and Jeep owners.

rather than buy replacement trucks in the current sellers' market.

## 3 EXPAND YOUR BUSINESS LINE

For many years, Fiel says he avoided offering routine maintenance work such as brakes and oil changes, as the shop had more than enough work in its primary line of business—aftermarket upgrades.

"Customers kept asking us about performing routine maintenance work," Fiel says. "We never felt a pandemic pinch in business, but I finally decided, 'Yeah, we can do that.' If customers want it, that is a good enough reason to do it."

He explains that not only was it more convenient for clients to have a one-stop shop to take care of their maintenance and accessory needs, but it's also been good for



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Always look for new opportunities to meet client needs.



Establish long-term relationships as the go-to shop for your customers.

## 5 ABOVE ALL, HAVE A PLAN

Fiel is apprehensive about the economy's near-term future, and the possibility of a deeper recession worries him.

"Our customers have continued to spend over the past two years, but a recession

could change that," he notes.

Fiel believes that times of change make it necessary to have a plan. During the early stages of the pandemic, he worked on an ambition to franchise his business model.

"I'd been getting many inquiries about franchising in recent years, and I always said, 'No, I've got my hands full running my own business (in Virginia),' he says. "But in the past two years, I kept getting calls. So, part of my plan for the future was to take the time to work on the franchising agreement."

He says that interest has been especially strong in Texas and Florida, but since the Power Trucks USA franchise program is still fairly new, almost all territories are open.

The appeal is strong, he believes, because the business model offers owners a good work/life balance. Franchisees can be active in their communities as business leaders and successfully build and foster vital customer relationships.

"We started as a mom-and-pop business making contacts in our area. For almost 20 years, we've backed that commitment with community sponsorships and donations. That is a powerful business tool that I will encourage our franchise partners to follow," Fiel says.

Fiel routinely provides active military members, veterans and first responders with a discount. He plans to carry that practice over to his franchise business model with a 10% veteran franchise discount and 20% for multiple locations.

The programs and philosophies are recognition that customers have choices about where they spend their truck and vehicle add-on and enhancement dollars. It is, after all, a \$50 billion industry and growing.

"A customer can drive into any garage with vehicle issues," says Fiel. "They're not just looking for an install; they want an inspiring, long-term relationship, too. Our customers have many options, and I want them to choose us." **TS**



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# NEW VEHICLE REPORT



A sampling of the latest models, special editions & updates.

Carmakers are busy rolling out new models, special editions and notable updates as 2023 vehicles begin appearing nationwide. Here's a sampling of what restylers may soon encounter on dealer lots.

## 2022 RAM 1500 TRX SANDBLAST EDITION

### Exterior & interior appointments.

Ram expanded its light-duty lineup this summer with the addition of the 2022 Ram 1500 TRX Sandblast Edition.

"Performance truck buyers want to stand out from the crowd and the new Ram 1500 TRX Sandblast Edition allows them to do just that, while offering the segment's best combination of performance, capability and technology," says Mike Koval Jr., Ram brand CEO – Stellantis.

The Sandblast Edition enhances the already well-appointed TRX Level 2 Equipment Group and includes Mojave Sand exterior color and graphics; 18-inch, all-black beadlock-capable wheels; dual-pane panoramic sunroof; spray-in bedliner; cargo tie-downs; bed step; and an LED cab-mounted brake light.

Inside is Light Frost accent stitching, an embroidered TRX seatback logo, carbon fiber accents, a leather and carbon fiber flat-bottom steering wheel, unique center console badge, heads-up display and safety features including adaptive cruise control, Lane Keep Assist and pedestrian emergency braking.

It's all powered by a high-performance, 6.2L supercharged Hemi V-8.



Ram unveiled a gritty new Sandblast Edition light-duty pickup. (Photos courtesy RAM/Stellantis)



# ADVENTURE BEYOND THE SUNSET



Step up your lighting game with new LED lightbars and auxiliary lights from TrailFX. Available in the most popular sizes, styles and beam patterns, with both side and bottom mounting options, these diecast aluminum lights are rated for 30,000 hours of service and carry a limited lifetime warranty. Unique Black Edition lights feature black chrome reflectors that create a sleek stealthy look until illuminated. When your adventure lasts beyond the sunset, rely on new LED lighting from TrailFX to light the way.

## TRAILFX

Find these new LED lights accessories and more at [TrailFX.com](https://www.TrailFX.com)





## 2023 TOYOTA CROWN



The Toyota Crown sedan has a higher ride height than Camry. (Photo courtesy Toyota)

### Reimagined hybrid sedan with bold styling.

Toyota says it's reimagining the full-size sedan with the all-new 2023 Crown. Available in three grades—XLE, Limited and Platinum—the premium sedan will offer a choice of two different hybrid powertrains: HYBRID MAX or the fourth-generation Toyota Hybrid System (THS).

Built on a newly developed chassis based on Toyota's GA-K platform, Crown has a raised overall height that's nearly four inches higher than Camry, providing increased road visibility and easier entry and exit.

"Its flowing silhouette and sculpted bodylines create a fresh look that is entirely unique for its class," the company states.

The XLE grade comes equipped with the 2.5L THS, AWD, three selectable drive modes, 19-inch alloy wheels, heated and powered woven fabric front seats, and the all-new Toyota Multimedia System with 12.3-inch touchscreen and six speakers. It is available in five colors: black, Oxygen White, Magnetic Gray Metallic, Heavy Metal and Supersonic Red, with a black interior.

Each grade of Crown will include Toyota's new Audio Multimedia System and Toyota Safety Sense 3.0 standard.

The Crown first debuted in 1955 as the Toyopet Crown, Toyota's first mass-produced passenger vehicle.

## 2023 ACURA TLX TYPE S PMC EDITION

### Limited production offered in three colors.

The best-performing Acura sedan ever gains a healthy dose of tech, materials and craftsmanship from the NSX supercar with the new, limited production 2023 TLX Type S PMC Edition.

The fifth vehicle handcrafted by the master technicians who build the NSX Type S, the PMC Edition is offered in Curva Red, 130R White and Long Beach Blue body colors.

Exterior design elements include Berlina Black paint for the roof, antenna and door handles, and black-chrome quad-exhaust finishers. The NSX-inspired Y-spoke 20-inch lightweight wheels are painted in a new Copper finish, complementing a carbon fiber decklid lip spoiler, a carbon fiber rear diffuser, lower side sill garnish and gloss black exterior badging.

The inside is further distinguished by carbon fiber interior trim panels, illuminated side sills and premium floor mats with Type S badges and colored accent binding. Milano leather seats with Ultrasuede inserts are standard, and an individually numbered

## 2023 DODGE DURANGO SRT HELLCAT



The powerful Dodge Durango SRT Hellcat SUV is back for the 2023 model year. (Photo courtesy Dodge/Stellantis)

### Three-row muscle SUV delivers 710 hp.

The Dodge Durango SRT Hellcat is back for the 2023 model year, looking to reclaim its standing as the most powerful SUV on the planet.

Fueled by a supercharged 6.2L Hemi Hellcat V-8 engine producing 710 hp and 645 pound-feet of torque, the Durango SRT Hellcat—first introduced as a one-year-only model for 2021—storms back to life thanks to enthusiast demand, according to the company.

"The Dodge Durango SRT Hellcat has generated a crazy amount of enthusiasm and demand since it was introduced in 2020—we even extended its initial production run—so it seemed appropriate to bring back the most powerful SUV ever as part of our historic 2023 model-year Dodge lineup," says Tim Kuniskis, Dodge brand chief executive officer – Stellantis. "Muscle enthusiasts also have families, and the 2023 Dodge Durango SRT Hellcat can get those families where they want to go and has the ability to tow 8,700 pounds."

The SUV goes from 0 to 60 mph in 3.5 seconds, clicks off a NHRA-certified quarter-mile elapsed time of 11.5 seconds and reaches a top speed of 180 mph.



The limited-production 2023 TLX Type S PMC Edition comes in three color options. (Photo courtesy Acura)

serial plaque is included on the lower console.

PMC Editions are wrapped in a specially designed car cover and transported to Acura dealers via enclosed, single-car carriers.



## 2023 JEEP FREEDOM EDITIONS

### Military-inspired Wrangler/ Gladiator package.

Jeep is offering a limited edition Freedom package for 2023 Gladiator and Wrangler Sport S trim models featuring a military-themed exterior and interior design cues. The Jeep brand will make a \$250 donation to military charities for every Freedom edition sold.

“With our 1941 origins rooted in the military, we at the Jeep brand are proud of our heritage, and the Gladiator and Wrangler Freedom editions are a tribute to all servicemen and servicewomen,” says Jim Morrison, senior vice president and head of Jeep brand North America. “Through these special editions, we honor those who have made the ultimate sacrifice for their country and support those who have served and continue to serve.”

Freedom vehicles include capability enhancements and unique exterior features



Jeep is offering a military-themed Freedom package for 2023 Gladiators and Wranglers. (Photo courtesy Jeep)

such as an Oscar Mike badge on the rear tailgate/swing gate, LED headlamps and fog lamps, body color fender flares, winch-capable steel front bumper, steel rock rails,

black wheels and accents, and an American flag decal along the side.

Inside are leather-trimmed cloth seats and black accent stitching.

## 2023 SUBARU ASCENT

### Enhanced three-row family SUV.

Subaru's recently introduced 2023 Ascent three-row family SUV features updated styling, enhanced safety and in-vehicle technologies, and a new Onyx Edition trim level with added exterior and interior accents and a comprehensive option package.

Offered in Base, Premium, Onyx Edition, Limited and Touring trim levels, Ascent starts with a bolder look, thanks to a new front fascia incorporating a more prominent grille; redesigned LED headlights; Konoji (C-shaped) taillights; and a more aggressive front bumper cover with lower-edge air ducts to improve airflow under the vehicle.

The SUV comes standard with the latest version of EyeSight Driver Assist Technology, which now operates more smoothly and under a greater range of conditions, according to Subaru. Also standard across the model line is a Wide-Angle Mono Camera that works together with the dual-camera EyeSight system.

A newly standard, tablet-style 11.6-inch full HD center information display offers direct touch controls for multimedia, climate control, X-MODE and vehicle configuration settings. Wireless Apple CarPlay and

Android Auto are standard. Every Ascent also features Steering Responsive LED headlights with High Beam Assist for improved nighttime visibility.

The new Ascent Onyx Edition is equipped

with exclusive black-finish exterior elements, badging and 20-inch black-finish aluminum alloy wheels. The seats are wrapped in Subaru StarTex water-repellant material with new contrasting green stitching.



Enhanced safety features highlight the 2023 Subaru Ascent SUV. (Photo courtesy Subaru of America)

## 2023 HONDA HR-V



The second-gen 2023 Honda HR-V is sportier and more powerful. (Photos courtesy CNW Group/Honda Canada Inc.)

## 2023 MAZDA CX-50 MERIDIAN EDITION



The 2023 Mazda CX-50 Meridian Edition is a capable crossover. (Photo courtesy CNW Group/Mazda Canada Inc.)

RESTYLING/AFTERMARKET ACCESSORIES

### Stylish & sporty SUV.

Stylish and sporty with a roomy, feature-rich interior, the all-new 2023 Honda HR-V has added power, too, with a larger, more responsive 2.0L engine.

Riding on an all-new IRS platform, other upgrades include a clean, high-tech interior with standard digital instrumentation, touchscreen options and Apple CarPlay and Android Auto integration.

The second-generation HR-V featuring Real Time AWD with Intelligent Control is longer, wider, more comfortable, sportier and more fun to drive, says Honda.

“The new HR-V is the perfect size for those looking for a SUV that can park in tight spaces and carry all their gear while delivering a fun and sporty driving experience,” says Steve Hui, assistant vice president, Honda Canada. “HR-V’s upgraded and enhanced features will solidify its position as a segment leader that will attract a new generation of Honda customers. We expect it will be popular with young and diverse consumers representing a variety of lifestyles.”

Top safety features include standard Honda Sensing, next-gen front airbags, and side-impact and knee airbags.

### A rugged & capable crossover.

Produced at the Mazda Toyota Manufacturing (MTM) plant in Huntsville, Alabama, Mazda is calling the CX-50 “a rugged and capable crossover SUV designed to complement the active lifestyles of customers in the North American market.”

Building off the Mazda CX-50 GT Turbo model and all of its features, the company’s special Meridian Edition package expands the vehicle’s capabilities by adding black metallic 18-inch alloy wheels wrapped in 225/60/18 all-terrain Falken tires, all-new headlamp garnish, a unique Meridian Edition-branded matte black hood graphic, black wheel locks and lug nuts, and side rocker panels that help protect the CX-50 from outside elements.

Exclusively offered in Polymetal Grey Metallic or Zircon Sand Metallic exterior colors, with new Terracotta leather with black interior accents inside, all Meridian Edition models are equipped with Mazda’s standard i-Activ all-wheel drive (AWD) system, Skyactiv-G 2.5L turbocharged four-cylinder engine capable of 256 hp and 320 pound-feet of torque on premium 93 octane fuel, and a responsive Skyactiv-Drive 6-speed automatic transmission with manual shift mode.

Meridian Edition also comes equipped with Mazda’s Mi-Drive that includes Normal, Sport, Off-Road and Towing driving modes.



## 2023 KIA K5



The boldly styled Kia K5 sport sedan largely carries over into 2023 with minor updates. (Photo courtesy Kia)

### Refreshed with minor enhancements.


Entering its third model year, the boldly styled Kia K5 sport sedan largely carries over into 2023 with minor enhancements to badging, packaging and feature content.

The K5 is available in four trim levels: LXS, EX, GT-Line and GT. The previously offered LX trim level has been discontinued for 2023.

And, while AWD is no longer offered with the LXS, the GT-Line continues to be available with FWD and AWD configurations.


New for 2023, the GT-Line is now offered with a large glass panel Panoramic Roof Package and LED interior lighting, plus gloss black exterior trim along the B-pillars, windshield and shark fin antenna for a sporty, unified appearance.

A heated steering wheel is now standard on the GT-Line AWD, while acoustic glass on the front door windows is standard on EX, GT-Line FWD and AWD, and GT models. **TS**




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# BRIGHT SKIES PART II



An interview with Bill North, president of sunroof company Champion Automotive Systems. ////////////////By Josh Poulson

*Editor's note: This is the second installment of a two-part article highlighting the evolution and continued strength of the sunroof market. Part I appeared in the September 2022 issue of THE SHOP.*

**M**y last article spoke about my own experiences as a restyler that sells and installs power sunroofs. At their peak in the 1990s, there were about 200,000 sunroofs being sold and installed annually by restylers around the country.

Manufacturers of these sunroofs included American Sunroof Company (ASC), Webasto, Cars & Concepts (Skylite sunroofs), Skytop and Hollandia. These five companies controlled most of the market, but as time went on that number dwindled to two, whether through acquisition or closing.

Signature Sunroofs (formerly ASC) and Webasto Hollandia were the last two standing, until Webasto announced early last year that it would cease building aftermarket sunroofs and focus strictly on OE business.

Many shops wondered what the future would be like with only one aftermarket manufacturer left—I know our shop, Auto Additions, sure did.

Well, it was recently announced that Champion Automotive Systems in New Hope, Minnesota purchased the tooling and manufacturing rights to the Webasto

700 series sunroof lineup. In fact, it will be assembling and shipping Comfort Series 730/735/740 Hollandia sunroofs right here in the USA very soon.

Many restylers were excited to see this iconic sunroof product remain in the industry. The ability of John Prosser, owner of Champion Automotive Systems, to

Sunroof industry veteran Bill North was named president of Champion Automotive Systems in September 2021.







Champion Automotive Systems in New Hope, Minnesota purchased the tooling and manufacturing rights to the Webasto 700 series sunroof lineup.



work out an agreement to keep these sunroofs around will no doubt pay off for his company and many shops nationwide.

For the product line and company to succeed, Prosser knew he needed someone with sunroof experience to run the company. Who better than Bill North, longtime sunroof expert, industry veteran and 2017 SEMA Person of the Year?

North, who worked at Webasto for 22 years in many roles including national sales manager for the aftermarket and OEM Webasto products, was named president of Champion Automotive Systems in September 2021.

Champion was nominated for SEMA PRO Manufacturer of the Year, and I had a chance to sit down with North and get his views on the aftermarket sunroof industry.

**Q:** BILL, WERE YOU SURPRISED WHEN JOHN PROSSER CONTACTED YOU ABOUT THE POSSIBILITY OF OBTAINING THE RIGHTS TO THE WEBASTO PRODUCT LINE?

**BN:** Well, knowing John since the '80s, it

was no surprise. I respect him completely for the success he has created, both in business with the companies he has built and on a personal level for his relationship with his wife and kids.

John and I share a stubborn drive to never give up on a good thing. His company, Automotive Concepts, has made a ton of margin installing Hollandia Sunroofs over the last 20 years, so we crafted a plan to buy the H700 product line from Webasto.

**Q:** YOU HAD 22 YEARS AT WEBASTO AND THEN A GOOD EIGHT-PLUS-YEAR RUN WORKING AT KATZKIN, FOLLOWED BY A CHANGE TO AN AUTOMOTIVE SOFTWARE COMPANY IN 2020. HOW DIFFICULT WAS THE DECISION TO JUMP BACK INTO THE RESTYLING MARKET TO WORK WITH SUNROOFS?

**BN:** Credit my wife for helping me with the decision to join Champion. She knew selling software solutions to large auto dealer groups was lucrative but recognized

that it was not my passion.

The only way to restore the sunroof business was to dedicate myself 100%, so I resigned from reputation.com. Now I am again serving restylers, who I have 30 years of experience with and have always respected as the drivers of our industry.

**Q:** THIS NO DOUBT TOOK SOME TIME, WITH CHALLENGES ALONG THE WAY. ANY YOU CAN SHARE WITH US?

**BN:** Sure. The Hollandia 700 product line has always been built in Holland and many suppliers had been informed that aftermarket sunroofs were canceled. John and I arrived in Europe to meet with key suppliers in person and essentially canceled the funeral.

Supply chain in our case is a huge challenge and I can't fire (nor do I want to)

the current supply base, which has been so crucial to maintaining the superior quality of the H700 sunroof line. At launch we will not be as localized as I desire long-term, but I owe it to our restylers to deliver a consistently high-quality product that they will remain proud to install.

**Q:**

**WHY DO YOU HAVE SO MUCH TRUST AND CONFIDENCE IN THE 700 SERIES LINEUP?**

**BN:** It was designed from the beginning to be an aftermarket solution. As vehicles evolved with more overhead structure, so did the sunroof by adding the additional welded strength to the housing.

All three models install the same way, and the finished product is not prone to warranty issues when properly installed by our professional network.

**Q:**

**WHY IS CHAMPION A NATURAL FIT TO ADD THIS NEW PRODUCT LINEUP?**

**BN:** Champion Seat Systems had a good following of restylers who prefer our complete product line of seat comfort products. The decision on our name change was easy. Evolving into Champion Automotive Systems makes sense because seating and sunroof products are complementary restyling upgrades.

**Q:**

**HOW HAS THE SUNROOF SALES APPROACH CHANGED OVER THE YEARS?**

**BN:** Today, most every vehicle model offers some kind of a factory sunroof or glass system option and take rates are over 40%. Thus, we have pivoted to serve the used vehicle and sold vehicle markets.

**Q:**

**WHY DO YOU FEEL POWER SUNROOFS ARE STILL A VIABLE AFTERMARKET PRODUCT?**

**BN:** Sunroofs are a key feature that some consumers insist on owning. With limited

vehicle inventory availability, the ability to add a quality power sunroof at the time of delivery is a big asset for local restylers and local car dealers struggling with an incomplete mix of models and options.

We install sunroofs every day at our own restyling center in Minnesota, Automotive Concepts, and we will always share our market intelligence.

**Q:**

**HOW WILL CHAMPION ASSIST RESTYLERS WITH THIS PRODUCT?**

**BN:** Production in the USA will allow Champion to carry more product and deliver sunroofs consistently as an alternative to importing from Europe or Mexico. We also will help restylers identify niche opportunities that arise due to supply chain changes and de-contenting from OEMs.

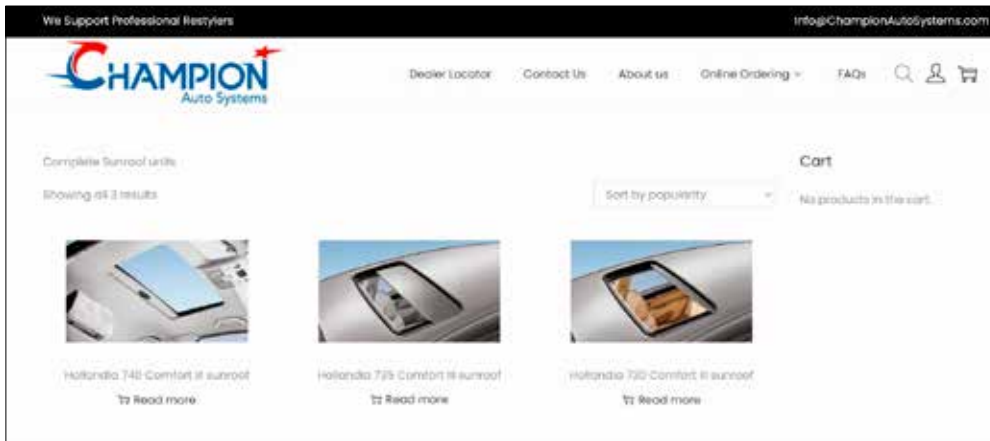
Once a vehicle leaves that factory without a sunroof, the only opportunity to overcome de-contenting is to re-content a power sunroof via our network. These

With many new vehicles like the 2023 Hyundai Palisade XRT coming with sunroof options from the factory, aftermarket business has shifted to targeting used and sold vehicles.





Production in the USA will allow Champion to carry more product and deliver sunroofs consistently.



windows of opportunity open and close quickly, so we will remain nimble and direct in our communication.



**WHAT FUTURE DO YOU SEE FOR THIS PRODUCT LINE AND CHAMPION TO POTENTIALLY HELP RESTYLERS?**

**BN:** At this year's SEMA Show, we hope to announce the availability of plans to offer

a spoiler-style sunroof in the future. We also expect to assist restylers with OEM sunroof repair opportunities and we have some seat comfort upgrades that restylers are going to love as well.

We must also improve our digital offerings to present sunroofs to consumers earlier in the shopping process, so we will support companies such as AAC to remain viable with the current car buying model. **TS**



**JOSH POULSON** is the principal of Auto Additions in Columbus, Ohio, which was named Restyler of the Year, 2012-13.

Auto Additions offers a complete line of product upgrades including 12V and appearance packages with a specific focus on the dealership segment. Josh is chairman of the SEMA PRO council and was named 2015-16 Person of the Year at the 2015 SEMA Show.





Reuter's Coach Works at 4067 Boston Road in the Bronx circa 1950. The original shop was far from fancy.

By John Gunnell

# The HEIGHT of CAR BUILDING

Reuter's Coach Works perfected the art of restoration.

**G**us Reuter was an early Bronx, New York-based classic car restorer. Russian-born Alec Ulmann was an MIT graduate who was president of Dowty Equipment Corp., which manufactured landing gear for military aircraft.

Ulmann was a car collector and sports car racer who founded the Sebring 12-hour race. In 1950, he acquired Allied International Corp. of New York City, an export distributor of aerospace components.

In the 1950s, Reuter's shop was doing coachwork for a foreign car shop in Manhattan. One of its jobs involved a Hispano-Suiza that Ulmann owned.

After some work was done, an employee of the foreign car shop mistakenly left a Reuter's invoice in the glovebox of the Hispano-Suiza. The other shop had doubled the invoiced amount paid to Reuter's when it billed Ulmann.

After that, Ulmann brought his cars directly to Reuter's. He also told opera singer James Melton and other car friends to do the same.



Gus Jr. is best known as Gus, while his dad went by Gustav. In total, the father-and-son team restored hundreds of "Capital C" Classic cars like this Duesenberg.



Gustav opened Reuter's Carriage Works in 1929. He is seen here in his "well-ordered Old World cobbler's shop" sometime in the 1940s.



Posed in front of the original Reuter's shop with a 1912 Bolshevik Rolls-Royce are, left to right, Oscar (nephew), Eddie (son), Lena (wife), Gustav Reuter and Gus Jr. (son).

## A LASTING LEGACY

Over time, Reuter's Coach Works restored about 100 of the 150 cars Melton owned. In fact, after the singer and car restorer developed a friendship, Melton would come down to the Bronx every Christmas Eve to sing to the Reuter family.

Melton's daughter Margo Melton Nutt





Surrounded by family members, Gus Reuter Jr. sits on the sturdy front bumper of a Duesenberg roadster that his Reuter's Coach Works restored.

later recalled that she always wondered where her father was during the holidays. She even mentioned Gus Reuter in her book *The Tenor of His Times*.

These and many other facts about Reuter's shops were unearthed in research done by John O'Leary IV, who teaches college courses in business, economics, strategy and international business. O'Leary's wife, Sarah, is Gus Reuter's granddaughter, which explains her husband's focus on the famous specialty car shop of yesteryear.

O'Leary has also developed an interest in Melton's car museums and in a 1939 Mercedes-Benz 540K Aktion P—a rare model that Reuter's Coach Works worked on. As archivist for Reuter's Coach Works, O'Leary has provided information to RM Sotheby's, Bonhams and Bloomberg.

Reuter's restoration shop was highly admired and considered by many the finest in the United States. The original shop, which was far from fancy, was started in 1929 using the name Reuter Carriage



Gustav, Gus and a helper posed with a Mercedes owned by singer James Melton.

Works. It was located at 4067 Boston Road in the Bronx.

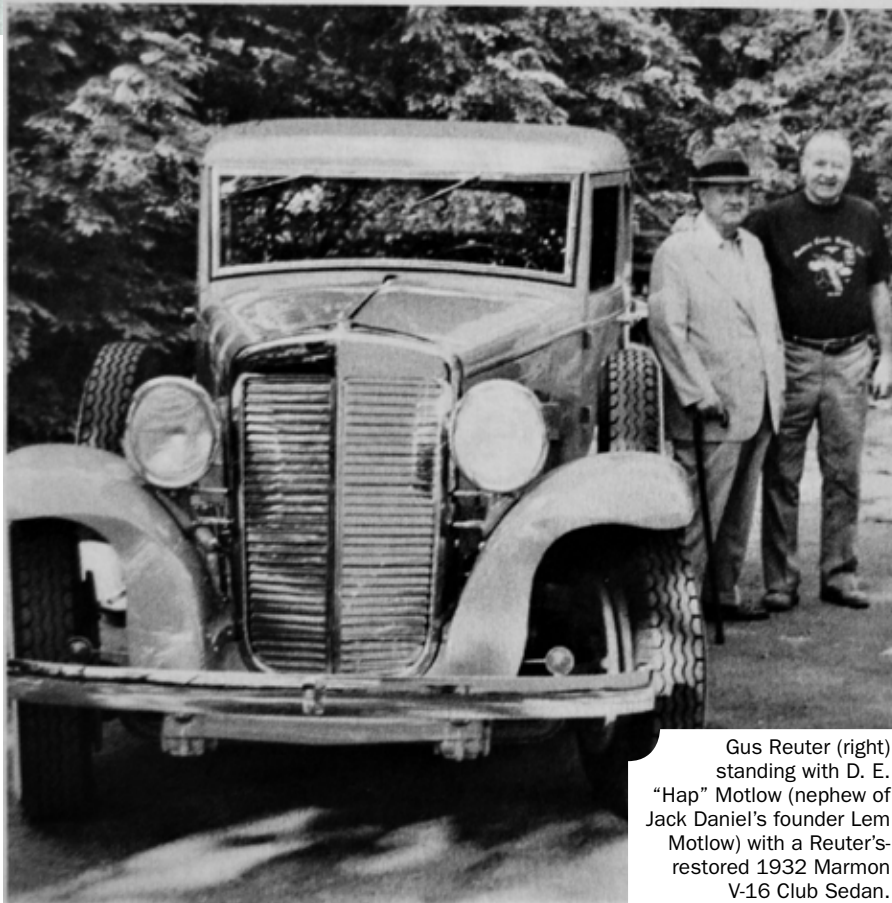
Reuter's later moved to 27RR Catoonah St., Ridgefield, Connecticut, and then to 29-1/2 New St. in Danbury.

Gustav Sr. restored many cars before he passed away in 1957. His son Gus—known

as the Stradivarius of Car Restoration—continued until he died in 1986.

O'Leary's 78-page book about Reuter's Coach Works Inc. is illustrated with 106 vintage photos of the shop, the cars it restored, the people involved and memorabilia items. Just a quick look at the





Gus Reuter (right) standing with D. E. "Hap" Motlow (nephew of Jack Daniel's founder Lem Motlow) with a Reuter's-restored 1932 Marmon V-16 Club Sedan.



This 20-hp White limousine was sold to Melton by an elderly woman from Michigan and later restored by Reuter's Coach Works.



images tells you that Gus Reuter worked on some of the world's grandest classics, including the infamous Al Capone Cadillac limo, Italian dictator Benito Mussolini's Lancia and a Packard once owned by Pres. Franklin D. Roosevelt.

A photo of the shop—possibly from the early '50s—with a late-1930s car parked in front, shows it had three large, hand-painted signs advertising upholstery, body work, convertible top & slip covers, Duco painting, fender repairs and collision work.

Gustav Sr. used the best leathers, finest wood finishes and top-quality lacquers and paints. His standards attracted customers with classic cars, and he soon developed a reputation for auto restoration work.

### SPREADING THE WORD

"We are equipped to do all body, leather, top and paint work required for the fine restoration of antique automobiles or sports cars," read an ad that ran in the October 1950 issue of *The Bull Horn* magazine. In 1961, Reuter's ran an ad with the exact same wording in the January/February issue of *Antique Automobile*, published by the Antique Automobile Club of America.

So, Gus didn't modernize much. Nat Danas' *Auto Trim News* described Reuter Coach Works as a "well-ordered Old World cobbler's shop" and said that it "smelled of good leather." Also mentioned were the shop's "almost antique tools." Gus Sr.'s first restoration project came from the Horseless Carriage Club of America.

When he was 11, Gus Jr. started helping his father restore cars. He served in World War II and returned to civilian life in 1946, at which time he suggested to his father that they fix newer models.

"It's much nicer and much cleaner to work on old cars," countered Gus Sr.

Gus Jr. continued following his dad's lead and the shop grew as the old-car hobby grew.

In addition to Ulmann and Melton, Reu-

(left) Parked outside the Bronx shop is opera singer James Melton's 1907 Packard Model 30 roadster. Gustav Reuter can be seen at the right rear side of the car.

(right) Reuter's Coach Works restored more than 100 cars for opera singer James Melton.



ter's did restorations for pioneer plastic surgeon Dr. Sam Scher, famed auto writer Ken Purdy, Rolls-Royce fan R. L. Atwell of Texas, well-known collector Briggs Cunningham, Ed Jurist of the Vintage Car Store in Nyack, New York, art dealer David Tunick, Arthur K. Watson of IBM, New York Gov. Nelson Rockefeller, Bugatti collector Dr. Peter Williamson and U.S. presidents Wilson and FDR.

**BUILDING A BUSINESS**

The singer Melton was probably America's best-known collector of his time. He owned 122 cars by the late 1940s. In 1953, he moved 68 of the cars—then valued at over \$500,000—to a new home at the James Melton Autorama museum in Hypoluxo, Florida.

When Reuter's Coach Works moved to Connecticut in 1970, it was Williamson the Bugatti collector who built the new shop at 27 Catoonah St. in Ridgefield that housed Reuter's in the back and Don Leffert's Vintage Auto Restorations in the front.

By then, the car hobby was getting more business-like. The new shop looked cleaner and had an awning with Reuter's on it. That first Connecticut shop advertised "foreign and domestic, rust specialists, light collision and custom paint."

After Gus Jr. died, his sons became 50/50 partners in the business and began selling classic cars as well as restoring them. By the late-1980s, when Richard was 42 and Robert was 39, they made their final shop move to Danbury. In the mid-1990s, the business closed due to an economic recession.

A lot of the shop's early success came about because of Reuter's fair pricing, as reflected on the invoice left in Ulmann's Hispano-Suiza. That was a reflection of Gus Sr.'s Old World values that showed up in everything the shop handled, from invoicing to quality craftsmanship.

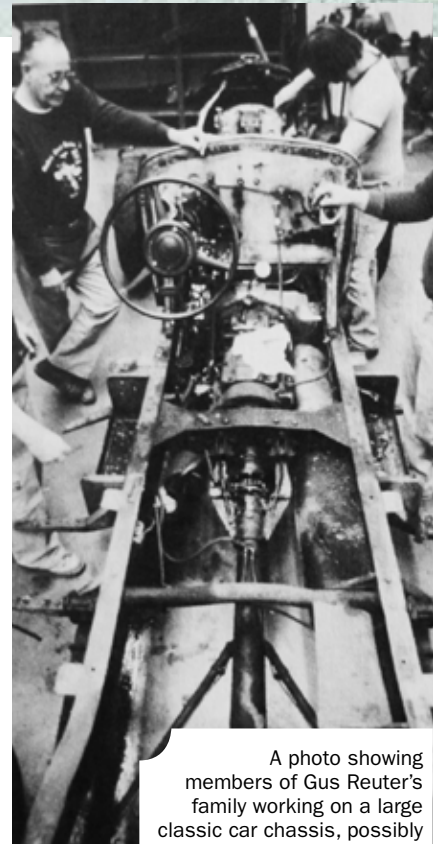
Reuter's is gone, but the outstanding business practices that the shop was well-known for over almost seven decades are still very relevant today.

(Note: Anyone with additional historical information about Reuter's Coach Works, the James Melton Autorama museum or the 1939 Mercedes-Benz 540K Aktion P can contact John J. O'Leary IV, 342 Woodford St. Unit 2, Portland, ME 04103.



Gus Jr. talks on the phone with a customer while shop employee Ed Bielek works in the background.

Call (860) 805-6928 or email [olearyj42@gmail.com](mailto:olearyj42@gmail.com). **TS**



A photo showing members of Gus Reuter's family working on a large classic car chassis, possibly from a \$350,000 Mercedes S model.



**JOHN GUNNELL** has been writing about classic cars since 1972. He is also the owner of Gunner's Great Garage in Manawa, Wisconsin. He owns 11 cars and seven motorcycles.



### Tesla Add-On Display

**VOXX Electronics**, Orlando, presents the TDD1.0 Add-On Digital Display for Tesla Model Y and Model 3 applications. Featuring three customizable LCD panels, the display stylishly integrates with the vehicle's interior and doesn't obstruct the driver's field of view. Display vehicle charging levels, turn signals, low/high beam indicator, vehicle speed, gear status or car mode in Simple or Classic display themes.

### Raptor Rear Suspension Upgrade

**Timbren Industries**, Toronto, introduces its Timbren SES upgrade for the rear suspension on new 2021-22 Ford F-150 Raptor pickups. The no-maintenance upgrade kit mounts to the frame using existing holes and is designed to prevent sag, reduce sway and enhance ride quality under load without compromising unloaded ride quality.



### Maverick Suspension Kit

**Air Lift Co.**, Lansing, Michigan, offers a new Air Lift 1000 kit designed for new 2022 Ford Maverick AWD models. Working with the vehicle's existing suspension, Air Lift 1000 improves issues with vehicle squat, poor headlight aim, unresponsive steering, trailer sway, body roll and bottoming-out. By properly leveling the load, squat is eliminated, braking is improved and the vehicle is returned to a level and stable state, allowing users to tow and haul safely and comfortably.

### Wrangler LJ Headliner Kit

**Design Engineering Inc. (DEI)**, Avon Lake, Ohio, presents a new Sound Deadening/Insulating Headliner Kit that accommodates the added wheelbase length on 2004-06 Jeep Wrangler TJ Unlimited (LJ) hardtop models. The five-piece, custom-cut, peel-and-stick kit dresses up the interior of LJ hardtops while minimizing outside noise. The pieces are made of high-quality, marine-grade acoustical foam that resists mold and mildew while insulating from outside heat and cold. The kit is offered in two finishes—Original and Leather Look.



### Bronco Front Bumpers

**Westin Automotive Products**, San Dimas, California, presents its XTS Front Bumper, now available for new-gen Ford Bronco models. Designed as an attractive, winch-capable upgrade that enhances both front-end protection and functionality, the bumper features a low-profile winch mount to improve airflow. It provides maximum strength and durability by employing a lightweight 10-gauge steel shell combined with a solid 4-gauge center section capable of accommodating most recovery winches up to 12,000 pounds.



### Jeep Wheels

**Quadratec**, West Chester, Pennsylvania, presents its new Lynx line of off-road wheels. Engineered to fit Jeep Wrangler JK, JL and Gladiator JT models, the Trail Gunner, Whipsaw and Peregrine wheels are available in a variety of finishes. They feature a hub-centric design and are manufactured from high-strength, pressure-cast aluminum alloy that meets SAE J2530 standards and DOT requirements.





## Tundra Suspension Systems

**ICON Vehicle Dynamics**, Riverside, California, presents complete Suspension Systems for 2022 Toyota Tundra models. Available in Stages 1-10, the systems improve on- and off-road performance and ride quality and include custom-valved ICON 2.5-inch diameter shocks. Designed to offer an option for any owner's budget, the systems build from Stage 1 that features the innovative 2.5 EXP shock, to Stage 10 featuring CDCV-equipped front coil-overs and rear shocks, along with a full complement of performance suspension components.

## Off-Road Winches

**DPI Offroad Brands**, Phoenix, presents the Summoner Winch series from Voodoo Offroad. Available in 4,500- and 9,500-pound options, each kit includes a heavy-duty winch, control box, wiring harness, steel fairleads, a steel hook and a synthetic rope. The winches combine power and performance with an all-steel planetary gear for use on Jeeps, trucks or other off-road recreational vehicles.



## Retractable Bed Cover

**EGR USA**, Ontario, California, presents the RollTrac retractable bed cover, including applications for new Chevrolet Silverado 1500 models. Offered in electric and manual options, the EGR RollTrac includes a lightly textured satin black powder-coat finish, soft edges and clearly defined formal contours. The RollTrac Electric has an intelligent onboard ECU that connects to the vehicle's remote central locking system and includes smart power management.



## Tacoma Bed Vault

**Pop & Lock LLC**, Green Bay, Wisconsin, a **Vehicle Security Innovators** company, presents a new Bed Vault for Toyota Tacoma models. The system is a 14-gauge steel, black powder-coated replacement cover featuring a three-dial combination lock that is designed to safely secure keys, wallets or other small items. A larger version for the opposite compartment that will feature the same three-dial combination lock and a bottle opener will be available by the end of the year.

## Lighting Kits & Wire

**Heise LED Lighting Systems** by **Metra Electronics**, Holly Hill, Florida, presents its expanded line of RGB and RGBW LED products. The lineup now includes a universal RGBW LED Underglow Lighting Kit, RGBW Bulk Wire and RGB Bulk Wire. Designed for compatibility with other Heise RGB and RGBW products, they offer colorful, durable lighting solutions with less installation time and labor.



## Slide Track Running Boards

**Raptor Series**, Hayward, California, presents 6.5-Inch Sawtooth Slide Track Running Boards. The heavy-duty, contractor-style steps include reverse-punched serrated holes along the entire length of the board for maximum grip. The boards are constructed of anti-corrosion, aircraft-grade aluminum with a black textured finish for durability and weight savings. All kits have a recommended weight rating of 400 pounds. **TS**



The annual Battle of the Builders contest lets shop owners see what their peers across the country have been working on. (Photo courtesy SEMA)

# Let's Get Together

My case for attending the SEMA Show.

By Barry Alt

Photos by Bob Vaughn

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*EDITOR'S NOTE: Fall is trade show season in the automotive aftermarket, and each year THE SHOP encourages business professionals to consider whether attending an industry event is right for them. This year Barry Alt, a SEMA ARMO council member and marketing seminar presenter, outlines his impressions of the annual SEMA Show, set for Nov. 1-4. If you do make it out to Las Vegas this year, be sure to stop by booth #24021 to meet THE SHOP team.*

If you've never visited the SEMA Show before, you might be under the impression that it's just a big car show. I'm here to tell you it's more than that.

The SEMA Show is a trade-only industry event that just happens to include an amazing custom car show, plus plenty of ways to help build your business.

The SEMA Show is held at the Las Vegas Convention Center and it's enormous!


The convention center includes 4.6 million square feet of convention space and an additional 2.2 million square feet of outdoor space. Last year, coming off the pandemic, more than 100,000 attendees, exhibitors and media participated.

You could easily walk five or more miles a day during the week, and this year it's projected to be the biggest automotive show in North America. Last year there were more than 1,300 exhibitors and over 100 educational sessions.

If you're an automotive aftermarket restoration or performance shop, a race shop, a restyling shop, a 4x4 shop, a tint and graphics shop, a mobile electronics shop, a shop that focuses on custom builds, or anywhere in between, then the SEMA Show is something you'll want to attend at least once.

Whether you're looking for new innovations to include in your builds or new tools to help you be more productive in

your shop, you can find them at SEMA. Add in the educational and networking opportunities, and it's guaranteed you'll walk away with more knowledge than you came with.

 **PRO TIP:** If you attend the SEMA Show, don't skimp. Stay for as many days as possible and see as much as you can. Make sure your investment pays off.

## WHY ATTEND THE SEMA SHOW?

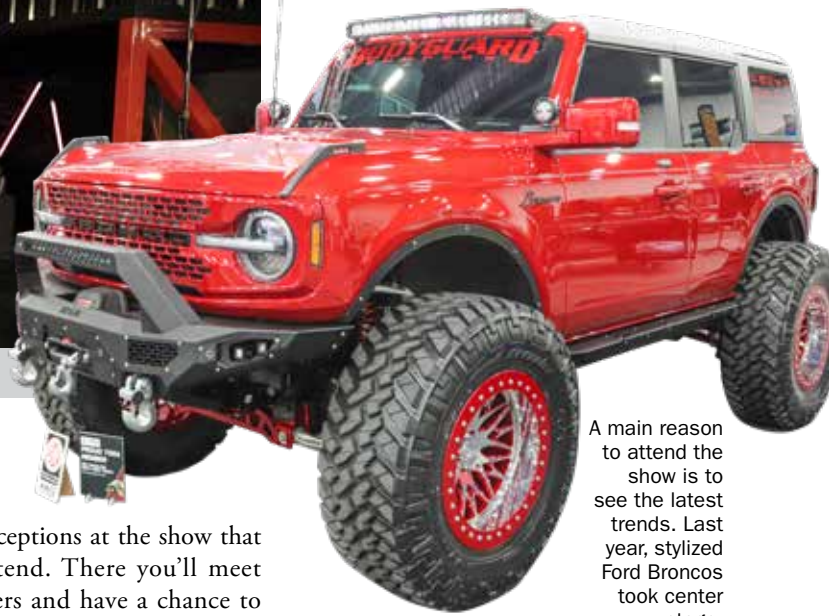
There are loads of benefits to attending the SEMA Show. Here are five reasons to consider:

- 1 LEARN ABOUT INDUSTRY TRENDS**  
At the SEMA Show, you'll be able to see all the latest industry trends and innovations in person. There are many new products and techniques showcased at the show, and you can talk to the people who built the cars and applied those new





The SEMA Show is a great place to connect with industry leaders.



A main reason to attend the show is to see the latest trends. Last year, stylized Ford Broncos took center stage.

processes and products to their rides.

For instance, one of the most popular customized vehicles in 2021 was the new Ford Bronco. Broncos were everywhere at the show last year, outfitted in just about every way imaginable.

One that caught my eye was a Bronco build by Tucci Hot Rods with snow tracks replacing the wheels. There were also projects utilizing lift kits, bigger tires, new lights, customized interiors, and all types of tasteful tweaks to give you ideas to take back to your own shop.

Also, in many cases, team members who participated in the builds were available to answer questions and share their thoughts on industry trends.

## 2 VIEW NEW PRODUCTS

Surveys show that seeing new products is at the top of the list of most show attendees. At SEMA, you'll find them in the booths, on the vehicles and in the New Product Showcase.

Talk to manufacturers, builders and other attendees about the products they've seen. And if you have something specific you want to investigate, write it down so you don't forget. Conversations can get side-tracked and interrupted.

## 3 MEET INDUSTRY LEADERS

Trade shows can inspire you to become more serious about your business and more involved in the industry. If you're interested in taking that next step, the SEMA Show is a great place to connect with industry leaders.

SEMA the organization includes councils, networks and committees for just about every niche of the specialty automotive aftermarket. Many groups have

breakfasts or receptions at the show that anyone can attend. There you'll meet council members and have a chance to learn more about special projects and volunteer opportunities.

You may also see and possibly meet (if you're lucky) industry leaders and other celebrities like Chip Foose, Jay Leno, Bogi Lateiner, Mike Rowe, Courtney Hansen, Tanner Foust or Dave Kindig, just to name just a few!

## 4 GET INVOLVED AT THE EVENT

There are a lot of SEMA members at the show. Talk with them and learn how to get more involved with show events and promote your business.

Maybe you'd like to be a speaker at the show or buy a booth to showcase your offerings. This is an opportunity for you and your business to get noticed and make connections.

## 5 CHECK OUT NEW TOOLS

The SEMA Show features a vast selection of tools and equipment to outfit your shop and help you be more productive.

At the show, you can meet the manufacturers and test the tools to see if they're worth the investment.

**PRO TIP:** Make a detailed plan for which events you're interested in attending and which vendors you'd like to visit before arriving at the show, and then pay attention to where they're located. If you're not careful, you can waste a lot of time walking from hall to hall and back.



Yes, the SEMA Show is an awesome car show—but also so much more.



Last year's show had more than 1,300 exhibitors.

## BIG EVENTS DURING THE SHOW

There is so much going on at the SEMA Show beyond traditional booth visits. Events include the Monday Night Reveal, Battle of the Builders, New Product Showcase and Awards Breakfast, Industry Awards Banquet and SEMA Ignited, plus corresponding events like the OPTIMA Battery Ultimate Street Car Challenge.

These can be must-attend activities for shop owners. For instance, the Monday Night Reveal gives you a chance to see some of the latest vehicles from manufacturers and builders in a fun, relaxed setting.

Last year Chevrolet introduced the new 2023 Z06 Corvette hardtop and convertible models, as well as the new EV Hummer and a 1957 Chevy electric conversion. Dave Kindig and Kev Dog unveiled two custom hand-built 1953 Corvettes while announcing all-electric versions as well.

Meanwhile, the Battle of the Builders is a chance to see what your peers are working on. Watch during the week as the field is whittled from 40 to 12 to four to the final winner, all while showcasing the latest build techniques and innovations.

Last year's top four builds were:

- Robert Matranga, 1955 Chevrolet Bel Air (Hot Rod) – overall winner
- Eddie Pettus, 1961 Austin Healey Sprite (Sport Compact)
- Bryan Thompson, 1934 Ford Pickup (Truck/Off-Road)
- Dayton Jacobson, 2000 Chevrolet S10 (Young Gun)

Many SEMA councils, networks and committees host networking events throughout the week.



If you stay until Friday, you'll want to be outside at 4 p.m. as the SEMA Ignited cruise begins. Watch (and listen!) as show vehicles head over to the new West Hall parking lot in what I call a parade of awesomeness.

An announcer highlights features of each vehicle, and everyone is in a good mood as the show wraps up. Once the parade ends there's a chance to stroll among the vehicles, watch some demonstrations and meet even more builders and peers.

**PRO TIP:** Be prepared to walk a lot while you're at the SEMA Show. Bring comfortable shoes, stay hydrated and try to get some rest.

## SEE CHANGES FIRSTHAND

A lot is changing in our industry these days. Every year brings more and more amazing inventions and innovation to all parts of the specialty automotive aftermarket.

The SEMA Show immerses you in all of it.

Wondering how electrification is going to affect the industry? Last year there was the aforementioned '57 Chevy, a Plymouth Satellite and other classics restored as electric cars, plus alternative fuel vehicles that prove there's room for everyone.

Looking for that next big thing? The show has followed the overlanding craze from the first few accessorized long-range vans to the global trend it's become today.

There's also plenty of new technology to check out, from the latest 12V ADAS safety and in-vehicle entertainment systems to advancements in automotive films, wheels and tires, drivetrain components, appearance accessories and many more, not to

mention the related industries to discover such as work trucks and powersports.

**PRO TIP:** Download the SEMA Show app to stay on top of everything happening throughout the week. Receive updates on the latest news, appearances and more.

## SHOULD YOU GO?

I've talked to many people who say they don't need to go to the SEMA Show, that it's just a big car show and they won't learn anything. But I believe it's worth your time.

While it may not be an every-year trip for some shops, it's one of those events you must attend at least once in your career. You'll meet fantastic builders, see the latest products, learn about new processes and opportunities, and, yes, be treated to an amazing car show.

So, make plans to get to Las Vegas and see up-close everything that makes this industry great. **TS**



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# Pony Cars Power Onto Stamps

**T**he U.S. Postal Service is commemorating the heyday of the pony car era with five new stamps featuring some of the most famous examples of these classic vehicles.

A first-day-of-issue event for the Pony Cars Forever stamp was held in late August at the Great American Stamp Show in partnership with the American Philatelic Society. News was shared with the hashtag #PonyCarsStamps.

The new stamp series features depictions of five classic pony cars—a 1967 Mercury Cougar XR-7 GT, a 1969 AMC Javelin SST, a 1969 Chevrolet Camaro Z/28, a 1969 Ford Mustang Boss 302 and a 1970 Dodge Challenger R/T.

“The USPS team was incredible to work with,” says Tom Fritz, the stamps’ artist. “My challenge was to create five jewel-like, descriptive portrayals that every person who fell in love with this era can appreciate. The adventure isn’t just painting the cars’ details, but capturing their emotion and power. Cars don’t just sit there—they hunker down, they lurch, they shake, they shimmy and skitter. Those are the thrilling moments I look for.”

An integral part of hot rodding culture



The U.S. Postal Service is commemorating the heyday of the pony car era with five new stamps featuring famous examples of the classic vehicles.

and the automotive aftermarket, this new breed of vehicles began appearing on the nation’s roads in the 1960s.

“Over the past six decades, fast and fun pony cars have become a uniquely American obsession,” the Postal Service states in a press release. “Since their emergence, these performance coupes and convertibles have brought a youthful spirit to the automotive world.”

The USPS goes on to tell the tale of these influential cars, noting that in the mid-to-late 20th century, American automakers began catering to a segment of their customer base that was rapidly growing—

younger drivers who craved sporty, affordable cars that looked and felt different from what was in their parents’ garages.

“My mother had a 1970 Mustang with a 351-ci V-8,” says Scott Bombaugh, the Postal Service’s chief technology officer and executive vice president, who served as the dedicating official. “My brother learned to drive in that car, but by the time I was ready to drive, my parents sold the Mustang and had a Pinto wagon. Is it any wonder I have bought two Mustang GTs since then?”

While several manufacturers initially produced models that fit the pony car description, the trend did not begin in earnest until 1964.

By the time of the 1970s energy crisis, sales of the once ubiquitous pony cars had begun to decline. But, by the end of the decade, the cars had a resurgence. Pony cars were cultural icons; throughout the 1970s, they appeared in many television shows and movies.

“Since then, the popularity of pony cars has ebbed and flowed,” the Postal Service notes. “But over the past two decades, automakers have reintroduced many of the beloved models first launched in the genre’s heyday. Today, adventurous young—and young-at-heart—drivers enjoy the thrill of driving pony cars.”

The Pony Cars Commemorative Forever pane of 20 stamps will always be equal in value to the current First-Class Mail 1-ounce price, the Postal Service notes. **TS**

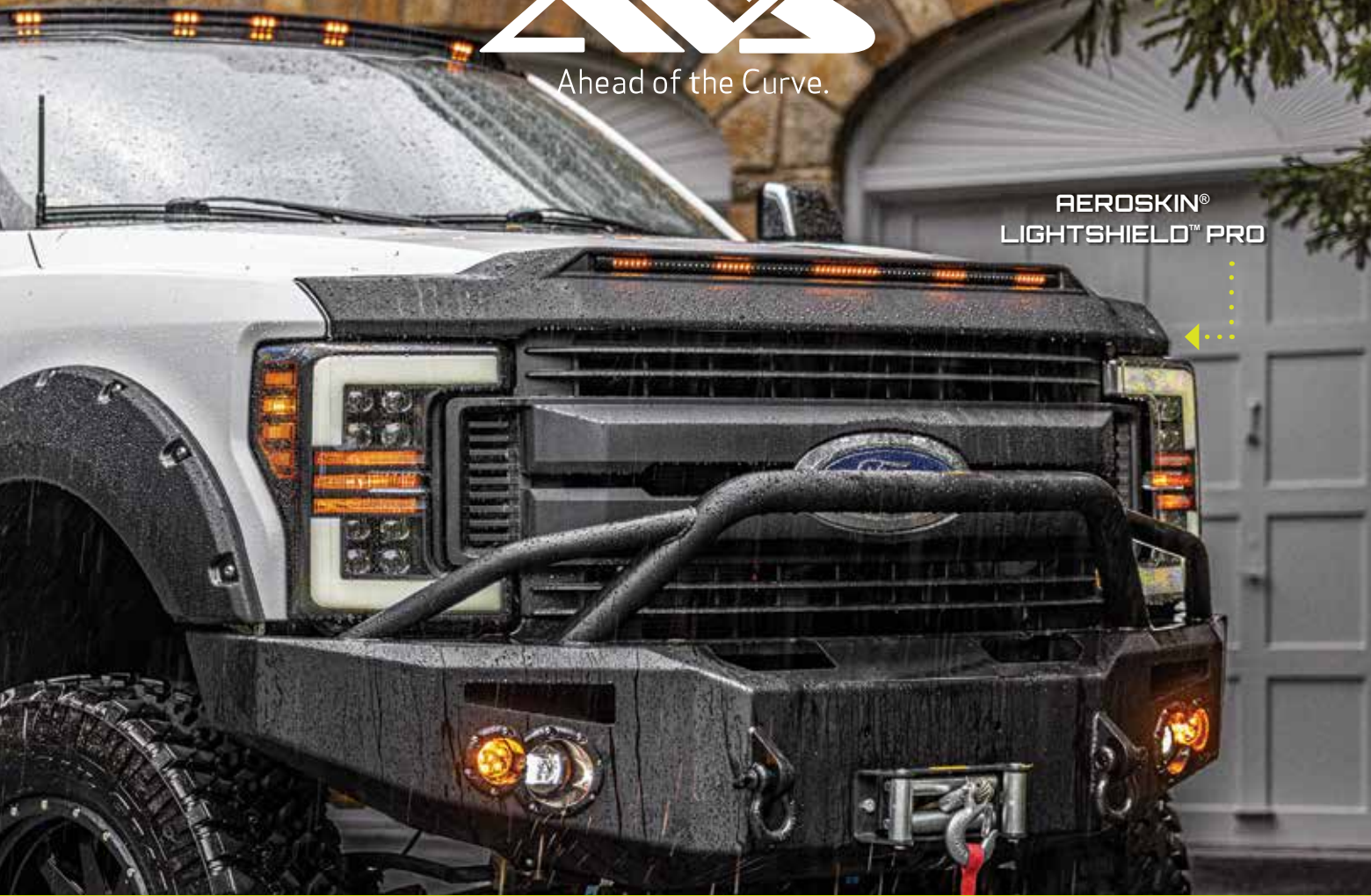






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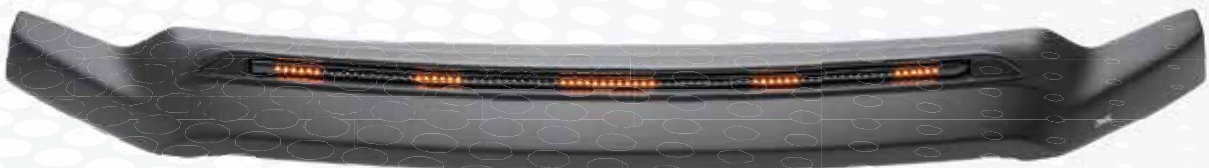


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