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CONTENTS

THESHOP // May 2024 // Volume 26 Number 12

FEATURES

BUSINESS

6
YOUR WEBSITE & SOCIAL MEDIA ACCOUNTS ARE BROKEN, PART IV
Here's why & some steps to fix them.
By Barry Alt



PAGE 10

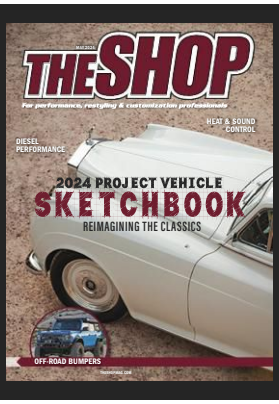
RESTYLING

10
OFF-ROAD BUMPERS, PART I
Give customers the look & versatility they desire.
By Jef White

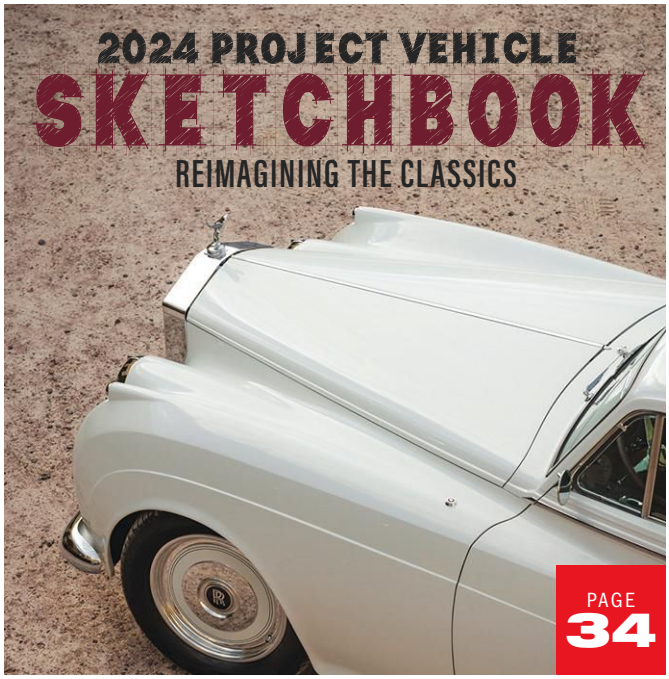
20
BEEN THERE, DONE THAT
Military needs helped spur what's become today's overland craze.
By John Gunnell

26
COMFORT & JOY
Heat & sound control products make for a better overall driving experience.
By Jef White

32
RESTYLING PRODUCTS
Parts to accessorize any ride.



ON THE COVER
The best project builds capture that undefinable feeling car lovers get, both in performance and aesthetics. Like many things in life, you know a good one when you see it, so here's a collection for enjoyment and inspiration. *See article on page 34.* (Photo courtesy Ringbrothers; Inset photo courtesy TrailFX)



PAGE 34

PERFORMANCE

44
DIESEL DRIVEN
This strong market is always searching for greater performance, efficiency & durability.
By John Carollo

50
DIESELS STILL OPENING DOORS
Offer attractive repair upgrades to keep sales going strong.
By Ron Knoch

54
PERFORMANCE PRODUCTS
Stock your shelves with these go-fast components.



PAGE 50

DEPARTMENTS

DRIVER'S SEAT 4
AFTERMARKET ALLEY 53
AD INDEX 55
ONE MORE THING 56



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Jef White
Editor
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SEMA Report Projects Growth for 2024 & Beyond

Does your business feel strong and ready for the new year?

The automotive specialty equipment industry is showing signs of resilience and strength as part of the recovering U.S. economy and is poised for growth in 2024 and beyond, according to the 2024 SEMA Future Trends Report from the Specialty Equipment Market Association.

Sales of automotive specialty equipment parts are projected to have increased about 1% last year. With the economy showing positive signs toward the end of 2023 and into this year, SEMA anticipates a similar stable growth trend heading into 2024, with a full return to normal annual sales growth of 3%-4% projected for 2025.

The 2024 SEMA Future Trends Report is the association's latest study that recaps the issues and outcomes that affected the industry last year, and projects how these areas are likely to impact the market in 2024 and beyond.

"While challenges persist, SEMA's research found several indicators suggesting that the market will continue to strengthen as it returns to normal growth," says Gavin Knapp, SEMA director of market research. "The report offers valuable insight into our latest forecast for industry growth. It also highlights key factors influencing consumer spending and business outcomes to help companies stay ahead of the curve."

Additional report findings include:

- Even with some conflicting indicators, the U.S. economy is currently growing while showing positive employment and spending trends.
- With inflation dropping, the Federal Reserve System should begin reducing interest rates in 2024, which will further lower total costs for financed goods like automobiles.
- New and used vehicle prices leveled out in 2023 as the supply chain stabilized, though costs are still high for consumers.
- While electric vehicle sales will continue to grow, most companies have slowed their production forecasts for EVs.
- Motor vehicle insurance, along with vehicle maintenance/repair, saw some of the largest price increases in 2023, making transportation a significant cost in daily life.
- Cars are becoming more advanced with Advanced Driver-Assistance Systems (ADAS) installation rates rising every year. More than 91% of new vehicles sold had collision warning or collision mitigation built in by original equipment manufacturers.

Despite some uncertainty, most specialty equipment industry companies are currently optimistic and expect sales to remain level or grow over the next year, according to SEMA officials.

"A 23% growth in 2023 SEMA Show attendance over 2022 was a strong indicator that the industry is committed to introducing new products and expecting robust sales in the market," SEMA officials add.

SEMA Business Members can download the 2024 SEMA Future Trends Report for free at sema.org/research. ***TS***

THE SHOP

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YOUR WEBSITE & SOCIAL MEDIA ACCOUNTS ARE BROKEN

PART IV

Here's why & some steps to fix them. **By Barry Alt**

Note: This is the final installment in a multipart article addressing common issues with websites and social media accounts often encountered by specialty automotive aftermarket shops. Parts I & II addressing website issues appeared in the February & March 2024 issues of THE SHOP; Part III addressing social media challenges appeared in the April 2024 issue.

Let's wrap things up with a couple more social media mistakes to avoid and a quick look at how artificial intelligence (AI) may affect things now and in the future.



Website and social media improvements will help you connect better with current and potential customers.

9 FAILING TO KEEP UP WITH TRENDS

When it comes to social media, staying current is staying ahead. That's why keeping updated with trends is necessary for your shop's success.

SOLUTION: Commit to ongoing trend research and awareness. While consistency in your messaging is essential, blending in timely and trending content can boost your reach and engagement, expanding your social media presence.

For example, Instagram currently favors Reels over static graphics, and often less is more with hashtags. Just because you can use 30 hashtags doesn't mean you should.

PRO TIP: Don't force your brand into irrelevant trends; instead, participate in those that align most naturally with your content and brand identity.

10 OVERPROMOTION OF YOUR SHOP

Audiences appreciate value beyond promotions. Too much promotion can overwhelm and alienate your readers and viewers, leading to less engagement, loss of trust, and potential unfollows or unlikes.

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SOLUTION: To address overpromotion, adopt the 80/20 rule—allocate 80% of your content to be informative, entertaining or helpful, with just 20% devoted to promotions.

We recommend starting out posting 3-5 times a week with a mix of graphics, Reels and stories. Once you understand how people are interacting with the content, you can adjust as needed.

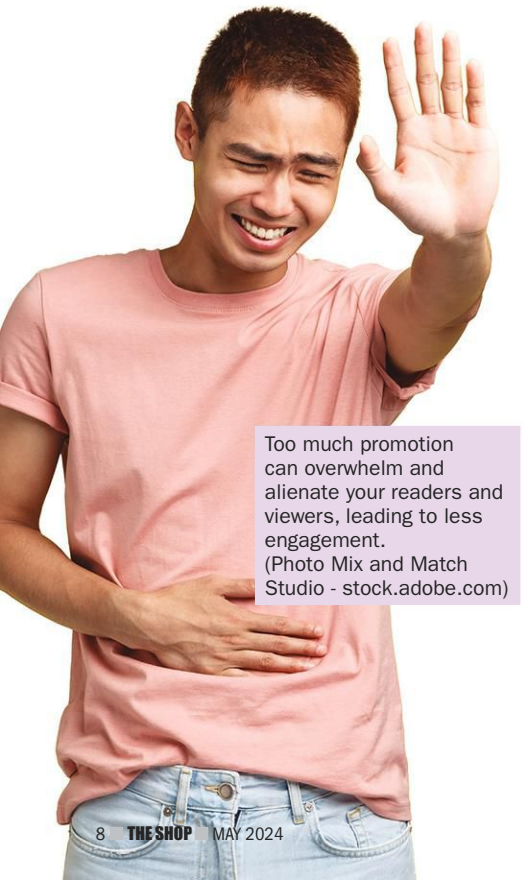
PRO TIP: Focus on creating valuable content that solves your audience's pain points. This approach ensures that even promotional content is seen as helpful rather than self-serving.

WHAT'S THE AI EFFECT?

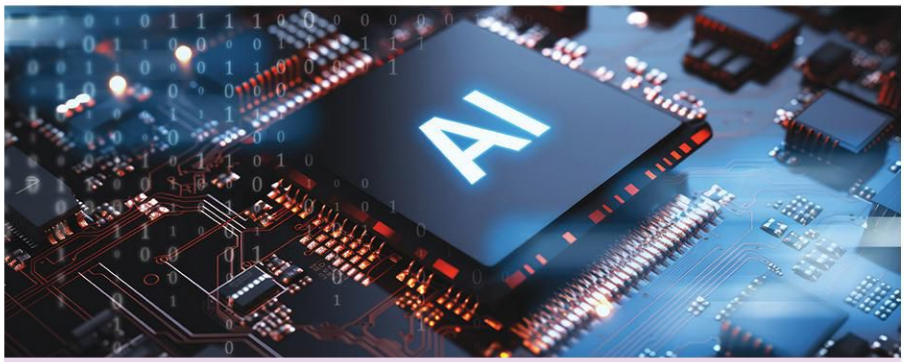
AI has been a hot topic lately, and like many other businesses, you're likely wondering how you can use it to your advantage.

Incorporating AI into your website and social media strategy can offer significant benefits, including:

- **Automating routine tasks:** AI efficiently handles repetitive chores like chatbots responding to common questions, saving human resources.
- **Providing useful insights:** Data analysis helps you understand user behaviors and trends, guiding your decision-making with helpful information.



Too much promotion can overwhelm and alienate your readers and viewers, leading to less engagement. (Photo Mix and Match Studio - stock.adobe.com)



Consider using AI to automate routine tasks, but don't overdo it.

- **Streamlining processes:** AI simplifies operational tasks, making your work more efficient and productive.
- **Personalizing user interactions:** AI lets you deliver customized content and recommendations to each user, boosting engagement and satisfaction.
- **Optimizing content delivery:** AI helps guarantee your content reaches the right people at the right time through the most effective channels.
- **Improving audience engagement:** AI-powered interactions and content can deepen engagement, strengthening your connections with your audience.
- **Staying competitive:** By embracing AI, you can keep a competitive edge, providing cutting-edge user experiences and staying up to date with industry trends.

AI MISTAKES TO AVOID

Even though AI has many benefits, it's crucial to know about its drawbacks as well. If you depend too much on AI, you might lose that personal touch in your interactions, which could turn off your audience.

Remember how important it is to have real and authentic connections with your customers. Don't let AI take over completely and sacrifice the personalized and human-centered approach that many users like.

The key is to find a balance between using AI and keeping real human connections. Figure out where AI can help with tasks like quick responses and data analysis.

But remember, there are times when humans are needed, especially for tricky questions, keeping with your brand's personality, and addressing special customer needs.

By finding this balance, you can use AI effectively while still offering that human touch that keeps your audience happy and engaged.

GO CONNECT WITH CUSTOMERS

We hope this series of articles has given you some real-world tips to make better connections with your customers.

Staying ahead is crucial in the fiercely competitive aftermarket world, whether you offer restoration, performance enhancement, racing and/or restyling products and services. One effective way to achieve this is by establishing a robust online presence.

We've identified critical areas where your shop's website and social media platforms may need improvement. Following the provided solutions for these issues, you can address any weaknesses in your social media and website strategies.

The idea is to empower you to attract new customers, enhance your brand's visibility and pull ahead of your competition.

By proactively tackling common pitfalls and implementing best practices, you have the potential to make a lasting and positive impression on your target audience. Ultimately, this will play a pivotal role in driving the success of your shop. ***TS***



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First Overlanders p. 20 / Heat & Sound p. 26 / Products p. 32

A comprehensive approach to sales and installation saves customers time and effort. (Photo courtesy Magnum RT Bumpers)

OFF-ROAD BUMPERS PART I

Give customers the look & versatility they desire. /////

By Jef White



Understanding the customer's budget allows shops to recommend options that align with their financial constraints while still meeting their needs. (Photo courtesy Magnum RT Bumpers)

Many customers can't get enough of today's off-road bumpers, and the same often goes for shops looking to capitalize on the market.

Offering style, performance and utility upgrades, the bumpers are a staple of today's 4x4 and overlanding markets. Opportunities have attracted a long list of suppliers, meaning there's a lot of information to sift through.

Still, patterns emerge regarding best practices and popular sales approaches that match clients with the bumper products and related accessories they need. The following are some suggestions on how to approach off-road bumpers for the best results.

IN THE FORM OF A QUESTION

Off-road bumper suppliers suggest asking lots of questions of customers to direct them to the perfect product for each application. The queries can range from basic to hyper-specific.

"Always ask why they are looking to upgrade their bumper," says Tony Savasta, vice president of marketing for Westin Automotive/Superwinch. "It's the only way to get a clear picture of which benefits and capabilities are important to the customer.



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OFF-ROAD PART I BUMPERS

PRODUCTS

■ **HOT PRODUCT:** JL Stubby Front Bumper
■ **FEATURES & BENEFITS:** Made in America with American steel; ultra-narrow design for maximum tire clearance; winch-ready with included winch plate; integrated D-rings and tow hooks; fog light housings (3x3 pod lights or factory fogs); integrated high-lift jack access points.

Fab Fours
Matthew McShane
Site Leader, South Carolina

■ **HOT PRODUCTS:** Toyota 4Runner Front RT Style Winch Bumpers
■ **FEATURES & BENEFITS:** High-clearance design for better approach angles; direct bolt-on using factory mounting locations; optional bolt-on RT bar included; integrated shackle mounts; compatible with up to 10,000-pound winch and synthetic rope fairlead; accepts LED Light bar.

Magnum RT Bumpers
Jesse Brown
Director of Marketing

■ **HOT PRODUCT:** Go Rhino Element Front Bumper
■ **FEATURES & BENEFITS:** Modern, stylish front bumper dramatically improves a truck's factory appearance; attractive mesh panels help reduce weight, improve airflow and are paintable for a customized look.

RealTruck Inc.
Trina Hemann
Marketing Manager

■ **HOT PRODUCTS:** Ford Bronco Front & Rear Package
■ **FEATURES & BENEFITS:** Two distinctive styles of front Bronco bumpers are available–one featuring a winch plate and a prominent pre-runner bar for a more aggressive look, and another with a slightly milder profile; rear bumpers accommodate various spare tire carrier options.

TrailFX
Sara Ford
Marketing Manager

■ **HOT PRODUCT:** Pro-Series Bumper Line
■ **FEATURES & BENEFITS:** Rugged, great-looking, winch-capable bumper that replaces the factory bumper; available in full- or mid-width (on some applications); accommodates most winches up to 12,000 pounds; stylish, powder-coated 10-gauge steel; contours to bodylines.

Westin Automotive/Superwinch
Tony Savasta
Vice President of Marketing





Bumpers can be viewed as "off-road accessories that sell accessories." (Photos courtesy Fab Fours)

Some of the benefits of our Pro-Series, for example, include increased clearance, adding a winch, tighter approach angle, additional protection and improved styling."

From there, talk about what's planned now and in the future, says Jesse Brown, director of marketing for Magnum RT Bumpers.

"First, understand what their intended use of the product will be. Are they going to be primarily rock crawling, trail riding or cruising the local mall parking lots? This will determine the level of protection and features that they will need to be happy with their purchase," he says. "Secondly, understand what type of upgrades they may be interested in. If you realize they have no interest in ever purchasing a winch or additional lighting, that may help steer them to the bumper that will best serve their interests. Lastly, budget is always a factor. Understanding the customer's budget allows the shop to recommend options that align with their financial constraints while still meeting their needs."

Remember, clients appreciate being asked about their vehicle plans, says Trina Hemann, marketing manager for RealTruck Inc.

"Customers may not entirely know what bumper they will need—they know they want a bumper, but are unsure about which one," she says.

Her suggested question list incudes:

- Are you looking for more tire clearance?
- Are you looking for a full-width bumper that extends or is even with flares?
- Do you want a winch-ready bumper?
- Do you want to have the capabilities of having an over-rider/pre-runner hoop on it?
- Would you like to attach lights or a light bar?



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RIVIAN DEBUTS NEW MIDSIZE PLATFORM

Electric vehicle manufacturer Rivian has unveiled its new midsize platform that underpins its R2 and R3 product lines.

R2 is Rivian's all-new midsize SUV. Delivering a combination of performance, capability and utility in a five-seat package optimized for big adventures and everyday use, it includes features such as powered rear glass that fully drops into the liftgate and first- and second-row seating that folds completely flat for hauling gear and cargo, or for car camping.

R3 is a midsize crossover that is tidy on dimensions but delivers big in terms of performance, off-road capability, passenger comfort and storage, according to the company. R3X is a performance variant of R3 offering even more dynamic abilities both on- and off-road.

R2 and R3 will feature two battery sizes. The larger pack will achieve more than 300 miles of range on a single charge and offer 0-60-mph acceleration in under 3 seconds for the quickest powertrain configuration, Rivian states.

"I have never been more excited to launch new products. R2 and R3 are distinctly Rivian in terms of performance, capability and usability, yet with pricing that makes them accessible to a lot of people," says RJ Scaringe, Rivian founder and CEO. "Our design and engineering teams are extremely focused on driving innovation into not only the product features but also our approach to manufacturing to achieve dramatically lower costs. R2 provides buyers starting in the $45,000 price range with a much-needed choice with a thoroughly developed technology platform that is bursting with personality. I can't wait to get these to customers."

The new midsize platform consolidates and eliminates parts thanks to intelligent design, including the use of high-pressure die castings, a structural battery unit where the top of the pack also serves as the floor, and closure systems that dramatically reduce complexity.

R2 and R3 also utilize Rivian's drive unit platform and internally developed network architecture, computer topology and software stack.



Rivian unveiled its new midsize platform that underpins its R2 SUV and R3 crossover product lines. (Photos courtesy Rivian)

If customers are unsure on future use plans then ask what they like, says Matthew McShane, site leader, South Carolina, for Fab Fours.

"Like with most accessories in the off-road market, it's key to understand what your customer is after for their build. Is it the look that's the most important or is it the design and function?" he says. "Where do they plan to take the vehicle? Is it a daily driver or an off-road trail vehicle? What's cool about our brand is that we have something for the most hardcore off-road enthusiast as well as the mall crawler. And you shouldn't discriminate from one to the other because our goal should be to make the customers love their vehicles when they drive them—whether out in the mud or on the drive to dinner Saturday night."

The decisions really do make a difference in customer satisfaction, says Sara Ford, marketing manager for TrailFX.

"Understanding a customer's intended use for an off-road bumper is crucial for shops to provide tailored recommendations. By asking questions like, 'What type of off-road activities do you primarily engage in?' shops gain valuable insights into the customer's specific needs."



When you get a bumper sale, there is a chance to add onto the purchase. (Photo courtesy Go Rhino/RealTruck)



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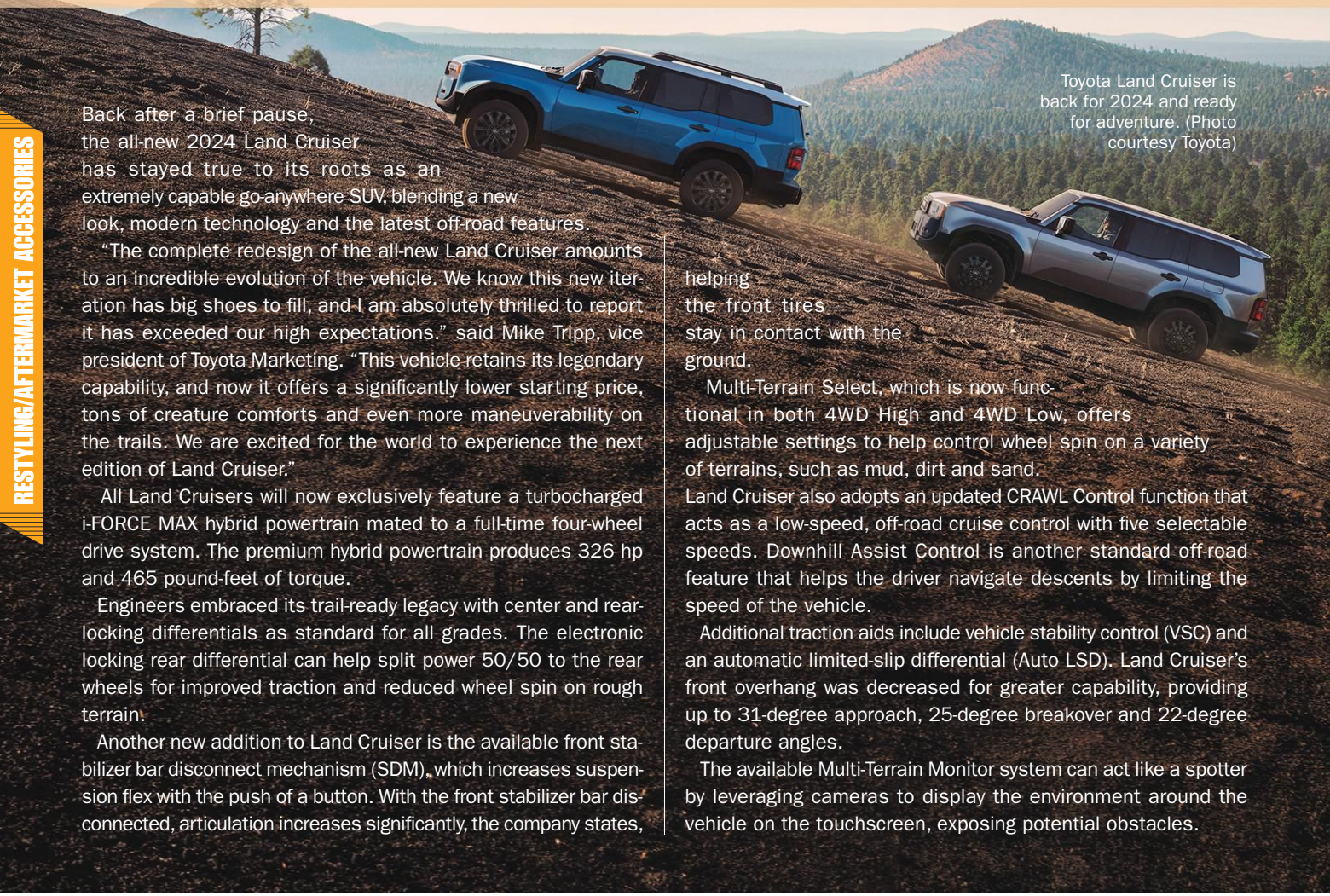
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2024 LAND CRUISER READY FOR ADVENTURE



Toyota Land Cruiser is back for 2024 and ready for adventure. (Photo courtesy Toyota)

Back after a brief pause, the all-new 2024 Land Cruiser has stayed true to its roots as an extremely capable go-anywhere SUV, blending a new look, modern technology and the latest off-road features.

"The complete redesign of the all-new Land Cruiser amounts to an incredible evolution of the vehicle. We know this new iteration has big shoes to fill, and I am absolutely thrilled to report it has exceeded our high expectations." said Mike Tripp, vice president of Toyota Marketing. "This vehicle retains its legendary capability, and now it offers a significantly lower starting price, tons of creature comforts and even more maneuverability on the trails. We are excited for the world to experience the next edition of Land Cruiser."

All Land Cruisers will now exclusively feature a turbocharged i-FORCE MAX hybrid powertrain mated to a full-time four-wheel drive system. The premium hybrid powertrain produces 326 hp and 465 pound-feet of torque.

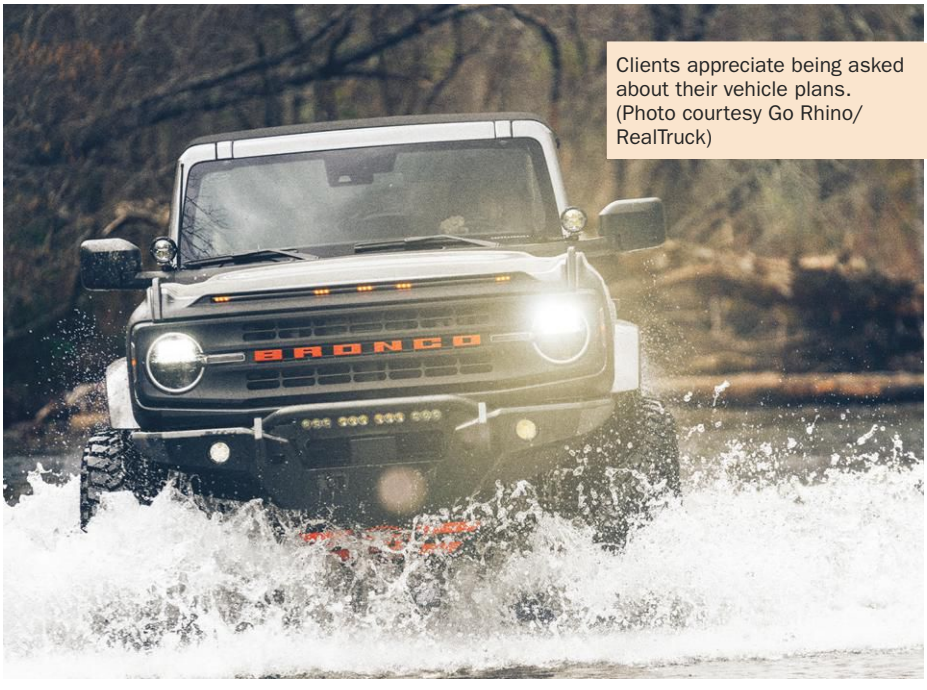
Engineers embraced its trail-ready legacy with center and rear-locking differentials as standard for all grades. The electronic locking rear differential can help split power 50/50 to the rear wheels for improved traction and reduced wheel spin on rough terrain.

Another new addition to Land Cruiser is the available front stabilizer bar disconnect mechanism (SDM), which increases suspension flex with the push of a button. With the front stabilizer bar disconnected, articulation increases significantly, the company states, helping the front tires stay in contact with the ground.

Multi-Terrain Select, which is now functional in both 4WD High and 4WD Low, offers adjustable settings to help control wheel spin on a variety of terrains, such as mud, dirt and sand. Land Cruiser also adopts an updated CRAWL Control function that acts as a low-speed, off-road cruise control with five selectable speeds. Downhill Assist Control is another standard off-road feature that helps the driver navigate descents by limiting the speed of the vehicle.

Additional traction aids include vehicle stability control (VSC) and an automatic limited-slip differential (Auto LSD). Land Cruiser's front overhang was decreased for greater capability, providing up to 31-degree approach, 25-degree breakover and 22-degree departure angles.

The available Multi-Terrain Monitor system can act like a spotter by leveraging cameras to display the environment around the vehicle on the touchscreen, exposing potential obstacles.



Clients appreciate being asked about their vehicle plans. (Photo courtesy Go Rhino/ RealTruck)

For instance, a bumper suitable for rock crawling may differ in design and features compared to one optimized for trail riding or overlanding, Ford explains.

"This understanding allows shops to suggest bumpers with the right structural components, approach angles and recovery options that align seamlessly with the customer's preferred off-road activities, ensuring optimal performance and satisfaction."

I LIKE THAT

There are many obvious reasons for shops to consider selling and installing off-road bumpers—and a few unexpected benefits as well.

Savasta notes that many applications are simple bolt-on installations that don't require drilling. They can also be part of an overall upgrade package.



The goal is to find a bumper that aligns seamlessly with the customer's preferred off-road activities. (Photo courtesy TrailFX)

"Our customer feedback tells us that customers want a total solution when it comes to protection and styling, which is reflected in everything we do. This creates the possibility of add-on sales or future follow-up, increasing your order value and customer LTV (lifetime value), while enabling truck enthusiasts to complete their upgrade journey."

Hemann also highlights a no-drill attachment while stressing profit potential.

"These are high-ticket items that can be an easy labor low-charge to do the install," she says. "Bumpers offer great add-on options as well like lights, a light bar and winch, which increases the sale of additional items that complement it well."

Bumpers can be a gateway to total accessorization packages, Brown notes.

"By providing off-road bumpers and offering installation services, shops have the potential to further expand their product offerings by incorporating additional accessories such as lighting and recovery gear," he explains. "Off-road enthusiasts are often keen on enhancing their vehicles with specialized equipment to improve performance and safety during their adventures. Tap into this market and upsell complementary accessories like LED light bars, fog lights, winches and recovery hooks. This not only increases the value proposition for customers but also opens new revenue streams for the shop."

Ford is also a believer in the benefits of product combinations.

"To boost off-road bumper sales, shops



OFF-ROAD PART I BUMPERS



Customers want a total solution when it comes to protection and styling. (Photos courtesy westinautomotive.com)







can provide package deals that combine bumpers with complementary accessories or offer discounts on additional items with bumper purchases. This simplifies the buying process for customers, presenting a comprehensive off-road solution," she says. "Highlighting the added value and convenience of these packages helps attract customers seeking a convenient one-stop solution for their off-road customization requirements."

McShane calls them "off-road accessories that sell accessories."

"Our bumpers allow shops to add more accessories to them. When you add a Fab Fours stubby, for example, you can sell the customer a Warn winch, a Factor 55 recovery kit and ultra-hook, as well as off-road lighting."

SMOOTH SELLING

Brown from Magnum RT Bumpers says it's as simple as becoming the local trusted 4x4 expert.

"Shops that offer a one-stop solution for off-road enthusiasts by bundling bumper sales with accessory installation can attract more customers and foster loyalty within the off-road community," he says. "This comprehensive approach saves customers time and effort by having all their customization needs met in a single location."

You can show your versatility and inven-



Stay current on the newest applications. (Photos courtesy westinautomotive.com)

tory by parking accessorized shop and employee vehicles where everyone can see them.

"It's not always easy, but shop trucks and Jeeps with bumpers out front always send the right message," says McShane from Fab Fours. "In-store displays are good too, but when customers can see that your rigs are outfitted with more than just a lift, wheels and tires, it gives you credibility."

To meet those needs, Savasta from Westin Automotive/Superwinch suggests staying current on new applications.

"We launch new products every month—XTS bumpers for Jeeps are up next," he notes.

Then it's just a matter of putting together the perfect package, says RealTruck's Hemann.

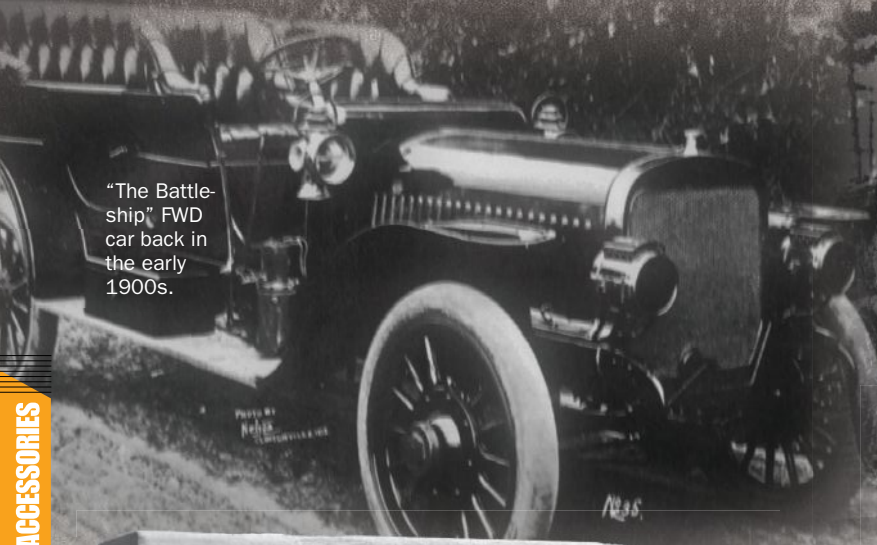
"When you get a bumper sale, there is a chance to add onto the purchase. You can suggest adding a winch, a light bar, cube lights and other recovery gear," she notes. "There are many options for easy accessories to add on, too. This is especially true for someone who may want a specific, make-it-their-own look, like a Baja look. Bumpers give that cool, customized look they want to bring their own vehicle to life."

Ford from TrailFX adds more detail on the benefits of upselling complementary items.

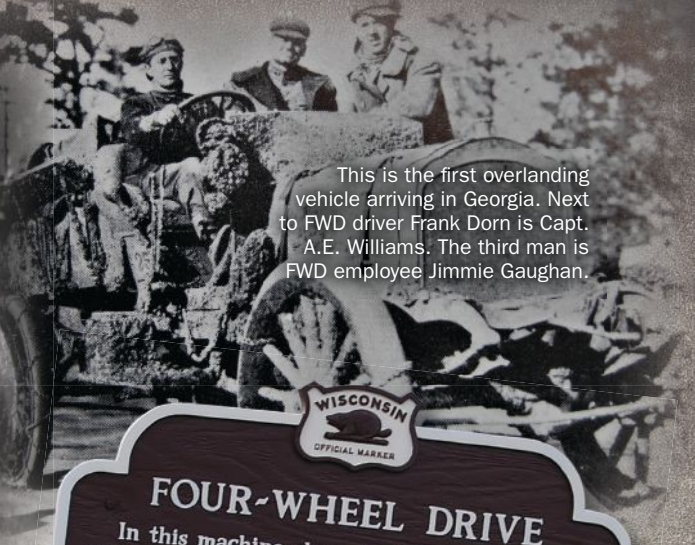
"Beyond recommending the ideal bumper, these shops can suggest valuable additions such as LED lighting options to improve visibility during nighttime adventures. Additionally, proposing winches and exterior accessories like rocker guards and tire carriers can further optimize the vehicle for off-road challenges," she explains.

"By providing comprehensive solutions, shops not only ensure the customer's safety and convenience but also contribute to creating the best possible off-road experience tailored to the individual's preferences and needs." ***TS***





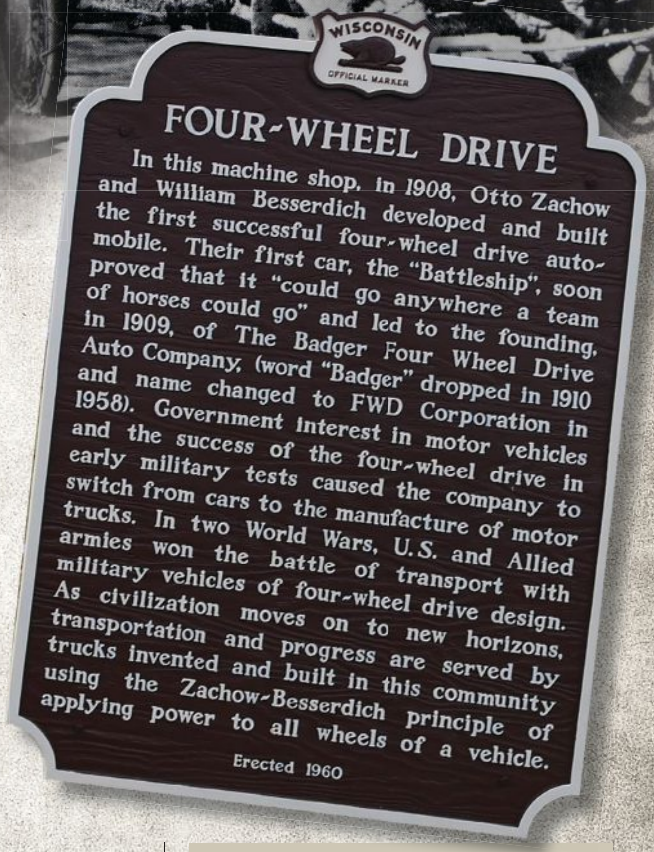
"The Battleship" FWD car back in the early 1900s.



This is the first overlanding vehicle arriving in Georgia. Next to FWD driver Frank Dorn is Capt. A.E. Williams. The third man is FWD employee Jimmie Gaughan.

BEEN THERE, DONE THAT

Military needs helped spur what's become today's overland craze. //////// By John Gunnell



A plaque outside the old blacksmith shop where four-wheel drive was invented.

As more people get involved in overlanding, interest is sure to grow in the history of traveling over rough terrain in four-wheel drive vehicles. Research shows that getting away from it all for long periods of time has been a passion of many for quite a while—including the U.S. military.

The histories of many automotive activities such as auto and truck manufacturing, racing, car collecting and hot rodding have nebulous beginnings, with many contradictory claims of being "first."

With overlanding, the true beginnings of the activity can be traced to a specific event in 1912.

In the fall of 1911, there were 700,000 licensed motor cars in the United States and 25,000 trucks. The United States Army owned 12 trucks. Three had been purchased by the Quartermaster Corps for use at the San Francisco depot. One went to Fort Sam Houston (today known as Joint Base San Antonio), in San Antonio, Texas, and one was used at the U.S. Military Academy in West Point, New York. Meanwhile, seven went to Manila.

The rest of the U.S. Army was still using mules for transport at the time, but the winds of change were blowing. Capt. A.E. Williams, a North Carolina native and West Point graduate, was on loan to the army's Quartermaster Corps from the 19th Infantry. Williams was very interested in the concept of developing a mechanized national fighting force.

Williams persuaded his superiors to invite major automakers to participate in a cross-country trial, in the middle of winter, that would take the trucks overlanding through ice, mud and rain.

Of course, the term "overlanding" hadn't been invented yet, but the road test by the military was described in at least one history book as "an overland run."

Williams traveled the country by train to visit carmakers and talk them into entering the challenging run. The carmakers knew their models would not perform well and decided not to participate.

Then, Williams saw an advertisement from the Four Wheel Drive Auto Co. and arranged a trip to its headquarters in the small city of Clintonville, Wisconsin. After he met the founders of this new company, he proposed that FWD participate in a rugged test against trucks made by White, Sampson and Autocar.

THE 'BIRTHPLACE' OF 4WD

Clintonville is known as "the birthplace of four-wheel drive" because Otto Zachow and William Besserdich, who ran a blacksmith and machine shop in the city, had invented a double-Y universal joint that permitted a vehicle's wheels to be turned without interfering with the transmission of power.

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BEEN THERE, DONE THAT

GLADIATOR TEXAS TRAIL CELEBRATES THE LONE STAR STATE

Jeep is blazing trails in Texas, the largest truck market in the country, by introducing the new 2024 Gladiator Texas Trail. Built as the first Texas Trail edition on the new 2024 Jeep Gladiator and based on the Gladiator Sport S trim, the special edition is launching exclusively for the state of Texas, delivering personalized content for a distinct appearance combined with 4x4 capability.

"The Jeep brand fully appreciates that Texas is the largest Gladiator market in America in addition to being the country's largest truck market," said Bill Peffer, senior vice president and head of Jeep brand North America. "Gladiator special editions allow us to connect with our passionate customers, and this newest special edition builds on the success of the previous Gladiator Texas Trail, which was the fastest-selling Gladiator model in Texas last year, selling nearly three times faster than the average Gladiator."

The Gladiator Texas Trail features 17-inch black-painted aluminum wheels wrapped in 32-inch mud-terrain tires. Off-road capability comes from the Jeep Command-Trac 4x4 part-time, two-speed transfer case with 2.72:1 low-range gear ratio.

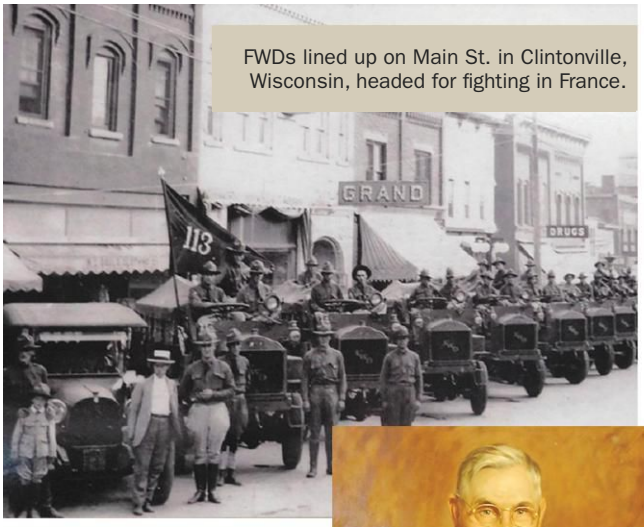
Outside, the unique Texas Trail hood and tailgate decals include the year 1836 as a nod to the Texas Declaration of Independence. Other highlights include:

- Body-color hardtop
- Black McKinley-trimmed seats
- Steel rock rails
- Keyless entry
- Power heated mirrors
- Power windows and door locks
- Side-curtain airbags for the first and second rows
- Adaptive cruise control
- Forward collision warning
- 12.3-inch Uconnect 5 touchscreen
- Remote start system
- Universal garage door opener
- Heated front seats
- Heated steering wheel
- Eight-speed automatic transmission

The Gladiator features a standard 3.6L Pentastar V-6 engine rated at 285 hp and 260 pound-feet of torque. It is available in seven colors—black, Bright White, Granite Crystal, Hydro Blue, Firecracker Red, High Velocity and Anvil.



Jeep introduces the new 2024 Gladiator Texas Trail, exclusively for its largest market.



FWDs lined up on Main St. in Clintonville, Wisconsin, headed for fighting in France.



FWD director and president Walter A. Olden was a Clintonville lawyer.

This was patented in 1907-08 and $35,000 was raised from local residents to capitalize the formation of the Badger Four Wheel Drive Auto Company. It took until Dec. 20, 1912, for the company's earliest factory to open.

The original intention was to manufacture four-wheel drive cars and a handful were produced and sold (one nicknamed "The Battleship" still remains in the FWD-Seagrave Museum in Clintonville).

A FWD driver named Frank Dorn loaded one of these open-bodied touring cars with eight men, including Capt. Williams, and drove it to a local hill over muddy roads. Later, the same car was loaded with heavy scrap metal and Dorn and Williams drove it through sandpits, plowed farm fields and even up the steps of a church.

Williams then returned to Washington, D.C., to tell his superiors about the FWD car. Within two weeks, an order was sent to Clintonville for a stripped-down model and spare parts. On Feb. 6, 1913, the U.S. War Department approved the test run and the FWD car (little more than a chassis and engine) and the three trucks mentioned earlier were assembled into a convoy.

A fifth truck—a Wilcox—was part of the original plan for the run, but it was abandoned even before the other vehicles started off.

The vehicles were driven 1,509 miles through Virginia, North Carolina, South Carolina, Georgia, Tennessee, Kentucky and close to Indiana. Originally scheduled as a four-week trial, the test ran seven weeks, at an average speed of 8-10 mph. The trucks realized 4-5 miles per gallon of fuel.

Even though the costs were less than feeding mule teams, the initial reaction was that there were too many problems. Williams was relieved of his special assignment to assess the practicality of a mechanized army. He was sent to the Philippines. Seemingly overlooked was the FWD car's good performance.



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LIPPERT



A FWD truck pulls a covered wagon on the Iowa-to-Wisconsin run.

MAKING THE CASE

This wasn't the case for long, however. In the spring, the U.S. Army asked if FWD could design a 3-ton truck with a four-wheel drive chassis system. In May, officials asked if such a truck could be readied for a 260-mile test run from Dubuque, Iowa, to Sparta, Wisconsin.

The previously used White, Sampson and Autocar trucks would also be retested, along with 1-1/2-ton Kelly-Springfield, Mack and Kato trucks that were rented for the challenge.

A report about the test run said, "That any truck managed to survive the ordeal in the heavy clay and sandy roads was remarkable and that the Four Wheel Drive outperformed the others was attested to by all of the regimental officers accompanying the march."

Despite such reviews, rumors flying around Clintonville of a government order for 12,000 trucks remained rumors and the city's small company struggled to pay its bills.

In the summer of 1914, Germany invaded Belgium and began a drive toward Paris. World War I had begun. Suddenly, war machines, from airplanes to trucks, were being used in the fighting.

FWD management realized that this raised the possibility of selling many of its trucks. That fall, a 3-ton truck and a 5-ton model were sold to exporters and shipped to England for testing. Within a month, an order for 50 trucks—more than FWD had made—arrived.

More orders followed. By the end of 1915, FWD was making money.

During 1915, the company had built and shipped 400 trucks and had Allied Government orders for 200 more each month. It was becoming a million-dollar corporation. In March of 1916, someone offered to buy the company for $2.5 million. As it turned out, it would soon be worth even more than that.

A few weeks earlier, there had been an uprising in Mexico, with a bandit named "Pancho" Villa killing 14 American soldiers and 10 civilians during a cross-border raid in Columbus, New Mexico.

Gen. John J. Pershing took 15,000 men into Mexico to hunt down Villa, but it was not easy with mules and wagons trying to push 500 miles (200 into Mexico) over very rough terrain.

Realizing it quickly needed mechanized transport, the U.S. Army placed an order for 147 FWD trucks on April 6, 1916. When FWD asked for a four-week delay, the National Defense Act was invoked, so 44 trucks that had been made, painted and put on a train for the British Army were instead unloaded and painted olive drab for the U.S. Army.

When advised that the British order would be held up, the country's ambassador in Washington demanded immediate shipment. This inspired FWD Director Walter Olen to travel to the capital to settle the problem.

The solution was to again repaint the 44 trucks and send them to England. Then, a revised U.S. Army order for 28 trucks and 40 trained drivers and mechanics was prioritized. FWD committed all of its old and new resources to the project and made the first shipment to Gen. Pershing on May 19, 1916.

In Mexico, the FWD trucks performed well again, and Williams was involved in assessing their capabilities. His official report said, "The FWD is proving its superiority to all others (trucks) in the Mexican service."

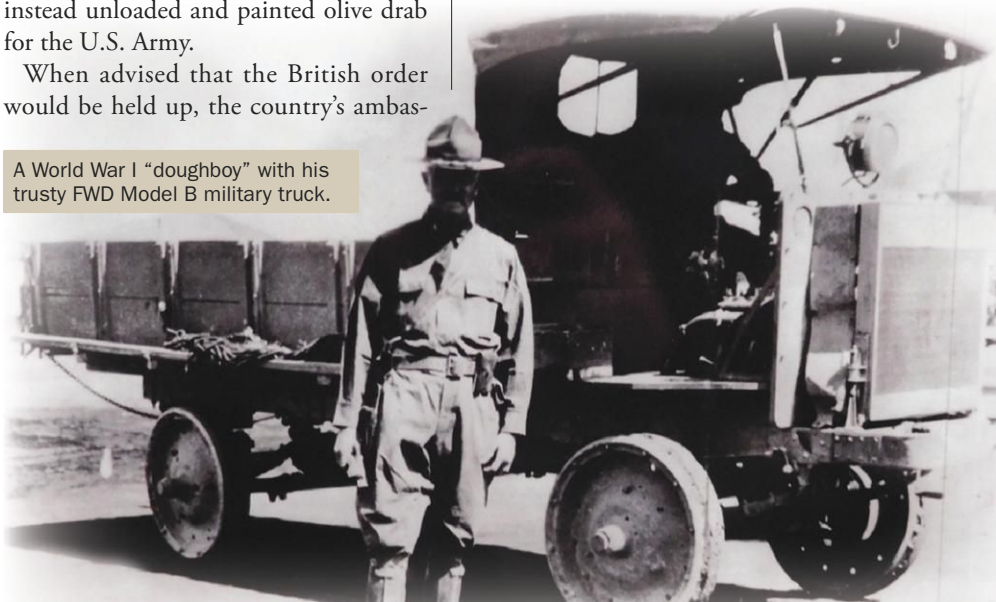
By Jan. 18, 1917, another order of trucks was sent to a military facility in Honolulu, Hawaii, making the 8th Regiment of Artillery the first fully mechanized unit of the U.S. Army. The unit had 30 Holt tractors, three army-scout motorcycles, a Ford truck equipped with rapid-fire light weapons and 36 FWD military trucks including a machine shop truck and supply and ammunition carriers.

FOUR-WHEEL DRIVES START ROLLING

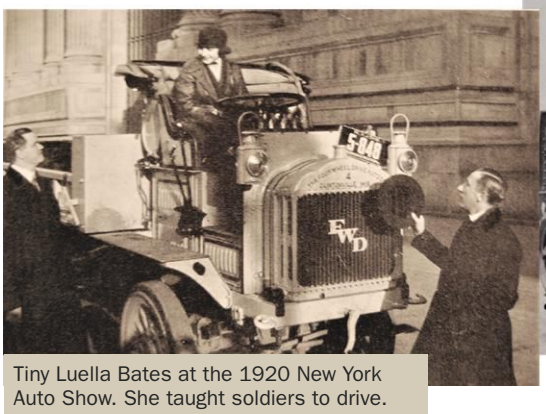
By April 1917, America was heading for involvement in World War I. Olen told his board that, in the advent of war, the company should prioritize U.S. military orders over foreign orders.

This was a bit of a hard sell, since half the board members were of German descent. In the end, they decided to be patriotic and accept Olen's guidance.

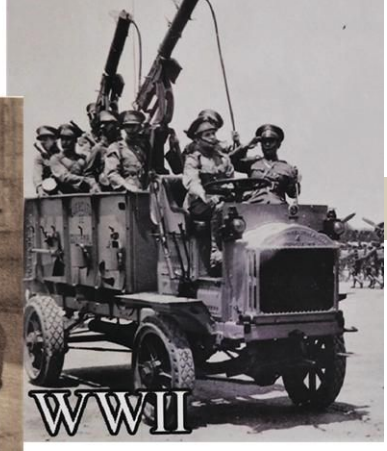
The U.S. Army didn't place an order for trucks until that July, but it was huge. In



A World War I "doughboy" with his trusty FWD Model B military truck.



Tiny Luella Bates at the 1920 New York Auto Show. She taught soldiers to drive.



World War I FWDs were still being used by the Chinese Army in World War II.

fact, at that time it was the biggest order the army had ever placed with a single manufacturer. It called for production of 3,750 3-ton FWD Model B trucks to be delivered at the rate of 175 per month.

To meet it, FWD had to hire additional workers from all around Clintonville, train the new employees, arrange to construct housing for thousands of soldiers and train a certain number of the fighting men on how to drive FWD trucks.

FWD's success over only five years converted Clintonville from a small city into a boomtown. Local residents who had purchased shares of the company suddenly became "wise investors." A Liberty Loan drive in the city quickly raised $183,000 (against a $50,000 goal).

Three other automakers—Premier, Mitchell and Kissel—got contracts to use their factory capacity to build FWD trucks. By mid-summer 1918, FWD had made 10,000 trucks for the U.S. government alone. By war's end, 35,000 trucks had been sold.

Trucks shipped to Europe included 24,000 used to haul and supply cargo, 4,197 ammunition carriers and 5,000 used for other military purposes. This was 50% less than the estimated number needed to supply 2 million soldiers with 25,000 tons of supplies each day.

Canadian soldiers reportedly said FWD meant "For Wonderful Delivery."

On Armistice Day on Nov. 11, 1918, FWD had 1,600 male employees producing 20 trucks per day—600 trucks a month. What had started out as a small machine shop turned into a giant facility with 185,351 square feet of floor space.

But even longer-lasting than the company's World War I success, was its contribution to the world of overlanding. What happened in the "birthplace of four-wheel drive" led to the development of vehicles and technology that overlanding enthusiasts enjoy today. ***TS***



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.*

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Comfort and Joy

Heat & sound control products make for a better overall driving experience. ///// **By Jef White**

Many drivers use their vehicles not just as transportation, but as an escape from the stress and worries of the outside world.

A cool, calm interior facilitates that peaceful feeling, making heat and sound control products an important part of many builds.

Easy to apply and designed to offer specific real-world benefits, quality heat and sound control products can be integrated into almost any project as a professional touch drivers will appreciate for years to come.

Brushing up on the basics is simple, and suppliers are here to help with product recommendations, sales strategies and related insider information to help bring this product line to your shop.

IN DEMAND

While rarely seen once a project is completed, heat and sound control products are



Heat and sound control products work with the budgets of most buyers. (Photos courtesy Design Engineering Inc.)

nonetheless extremely popular—popular enough, in fact, to attract manufacturers from different countries offering varying degrees of performance.

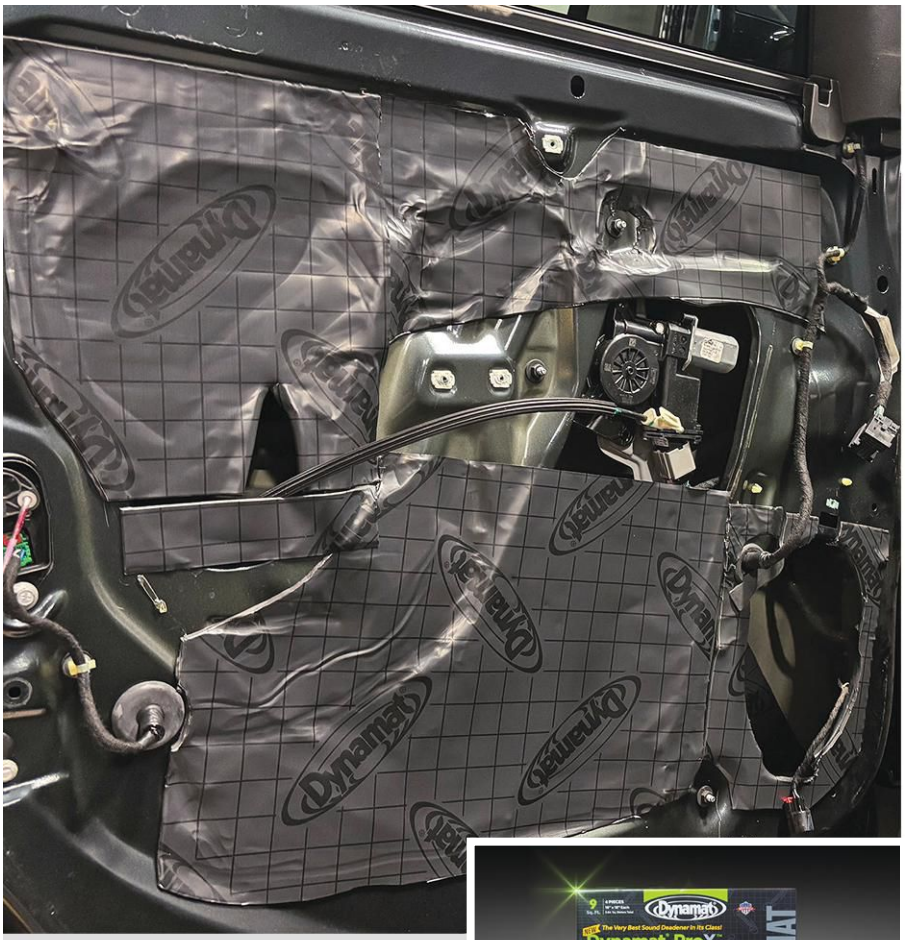
That means the first step for shops is to study up on suppliers.

"We see a lot of inferior products being brought into the U.S. They use the same name and the same verbiage when marketing the products, but the product itself is extremely poor quality, doesn't last and

Insulating materials make a real difference in driver comfort. (Photos courtesy Design Engineering Inc.)









Properly treated vehicles feel more solid, tighter and cooler when driving. (Photos courtesy Dynamat Inc.)

gives quality U.S.-made products a tough market to compete in," says Steve Garrett, creative director for Design Engineering Inc.

Chris Schwartz, sales and marketing manager for Heatshield Products, has seen much the same.

"Imported products from outside the U.S. cause people to be distrustful of the heat and sound control market," he observes. "They buy something that fails, falls apart quickly or does not have the capabilities advertised."

They may also buy online, notes Tim McCarthy, founder and CEO of HushMat, leading to a less effective installation and overall experience than if they had come to the professionals.

"Many Americans are focused on e-commerce sites for purchasing of parts. However, they need skilled technicians to install these parts. Our custom installation partners are key to the long-term stability and growth of this industry," he says. "If they don't offer it to their customers, we tell customers to buy HushMat and bring it to their local body shop or upholstery and restyling shop for installation."

Ed Shelton, vice president of sales for Dynamat Inc., has also seen "misinformation to consumers from some internet resources and sound control manufacturers that confuse the average consumer."

Meanwhile, regulatory standards also play a pivotal role, says Randy Pugh, marketing coordinator for Thermo-Tec Automotive.

"Evolving emissions regulations and noise pollution guidelines drive the need for advanced heat and sound control technologies. Compliance with these standards necessitates continuous innovation and the development of more efficient solutions," he says. "Concurrently, technological advancements in material science and manufacturing processes continue to enhance the performance and durability



Comfort AND Joy

HEAT & SOUND CONTROL PRODUCTS

■ **HOT PRODUCTS:** GEN3 Titanium & ONYX Black Turbo Shields
■ **FEATURES & BENEFITS:** Technologically advanced GEN3 turbo shields keep heat in the hot side of the turbo housing, protecting surrounding components, lowering under-hood temps and improving efficiency; built to last; 100% silicone-coated outer layer; thick silica inner insulation.

Design Engineering Inc.
Steve Garrett
Creative Director

■ **HOT PRODUCT:** Dynamat ProX
■ **FEATURES & BENEFITS:** Proprietary butyl core with thick 5-mil aluminum top layer; suitable for use on doors, floors or any panel to reduce vibrational noise by more than twice the industry average, according to third party SAE J1637 testing.

Dynamat Inc.
Ed Shelton
Vice President of Sales

■ **HOT PRODUCT:** Heatshield Armor
■ **FEATURES & BENEFITS:** Offers the ability to stop up to 60% of radiant heat from exhaust pipes, headers, catalytic converters and mufflers.

Heatshield Products
Chris Schwartz
Sales & Marketing Manager

■ **HOT PRODUCT:** Sound Deadening & Thermal Insulation Material
■ **FEATURES & BENEFITS:** New and improved; produced and packaged for more than 380,000 vehicles; complete vehicle kits insulate the firewall, floor pan, doors, roof and trunk for both heat and sound; easy to install; flexible and moldable; 100% manufactured in the USA.

HushMat
Tim McCarthy
Founder/CEO

■ **HOT PRODUCT:** Koolmat Insulation
■ **FEATURES & BENEFITS:** A composite of 1,200-degree Owens Corning fiberglass (bottom) and Owens Corning Silicone (top); improves driver's ride; stops 1,000-degree radiant heat; lowers sound by 23 decibels; thin and will fit under OEM Corvette carpets (tightest in market).

Koolmat Insulation
dba D&H Heat Technology Inc.
Pat Hill
President/Inventor

■ **HOT PRODUCT:** Adhesive-Backed Heat Barrier
■ **FEATURES & BENEFITS:** Renowned for its ability to reflect radiant heat; essential component for managing thermal conditions in automotive environments; materials deflect heat away from critical components; adhesive backing ensures straightforward installation.

Thermo-Tec Automotive
Randy Pugh
Marketing Coordinator



No one needs to be uncomfortable when driving a performance or classic vehicle. (Photo courtesy Heatshield Products)

of heat and sound control products, influencing market trends and consumer preferences."

A smart sales team armed with accurate information from the customer will ensure a successful project.

"It's important to know what areas of the vehicle are being covered and why," says Pat Hill, president of Koolmat Insulation. "It's also very important that the salesperson is knowledgeable about the products being installed to stop the transfer of heat."

A REAL DIFFERENCE

Hidden under the hood or carpet or by other materials, do the products really make a difference? Suppliers believe so.

"One unexpected benefit is the 'wow' factor you get when you have proper heat and sound control management. It is often overlooked in builds, but people really see how important of a step it is when doing performance upgrades or building a restoration project," Garrett reports. "We had one of our builders—Jeremy Gerber, co-owner of Roadster Shop—tell us that 'a car is only as good as how tight it is and how well insulated it is when it's completed.'"

McCarthy says driver satisfaction with the products "is off the charts positive. Customers feel like you have provided a much higher-quality vehicle and drastically improved driving comfort and experience. When they slam their car door and hear that solid sound they are overjoyed with the experience. They will tell their friends."

Shelton adds that the products give owners a sense of pride.

"A car without good quality sound and heat control feels 'cheap,' while a properly treated vehicle feels more solid, tight and cooler when driving," he states.

Hill agrees that heat and sound control are just the beginning with quality products properly installed.

Pugh points to the potential improvements in overall vehicle comfort and driving experience.

"While the primary purpose of these products is to manage heat and reduce noise levels, their effects often extend beyond mere insu-

lation," he notes. "By effectively reducing heat transfer and minimizing external noise intrusion, they create a more pleasant and comfortable environment inside the vehicle cabin."

Schwartz even points out a potential performance improvement.

"When you insulate your exhaust, you are helping get the gases out quickly, making your customer's ride run more efficiently," he says.

SOUND SALES STRATEGY

Suggesting heat and sound control products early will expedite builds and make for happy customers, says Shelton from Dynamat.

"Add sound and heat control products up-front in the cost of the build," he recommends. "Not only will this add value to the car, but it will also save the shop all the heat and noise complaints later when the car comes back because it is too hot and noisy to drive."

The products are friendly to most people's budgets, says Garrett from Design Engineering Inc.

"When doing any performance upgrade, engine modification or interior work, it's the perfect add-on sale. The customer gets the much-needed benefits of quality heat and sound control, making their vehicle perform better, and it also creates the opportunity for additional revenue."

Still, shops may need to introduce the options and their benefits to new clients.

"Many consumers may not fully grasp the importance of managing heat and noise in their vehicles or understand the advantages of specialized products," says Pugh from Thermo-Tec. "Ensuring that staff members are well-trained and knowledgeable about the features, benefits, and applications of heat and sound control products is crucial. Equipping them with the necessary information enables effective communication with customers and addresses their concerns."



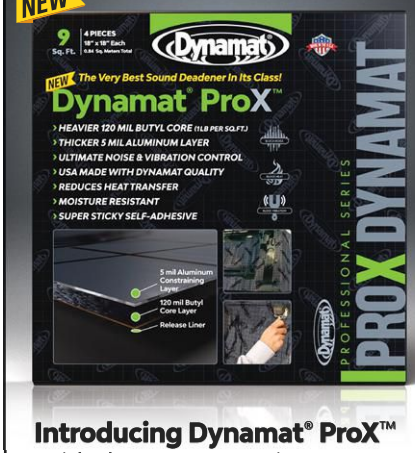


Heat and sound control act the same way as insulation in a customer's home. (Photos courtesy HushMat)

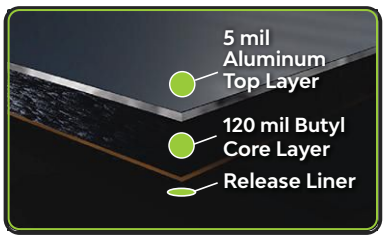


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Comfort AND Joy

SPRAY-ON SOLUTIONS







LizardSkin Spray-on Insulation offers an air-applied option to vehicle heat and sound control. (Photos courtesy LizardSkin)

LizardSkin Spray-on Insulation offers two flagship products that are water-based and spray-applied with shop air—LizardSkin Ceramic Insulation and LizardSkin Sound Control.

Ceramic Insulation has light, air-filled particulates to keep interiors cool by reducing heat transfer from the engine, exhaust and sun, while Sound Control is a dense formula that reduces exterior noises and enhances stereo system sound, says Will Conner, marketing manager.

The water-based materials are applied in two coats, each to a total thickness of 2mm, and can be used to "sandwich" floorboards for interior improvements and exterior protection.

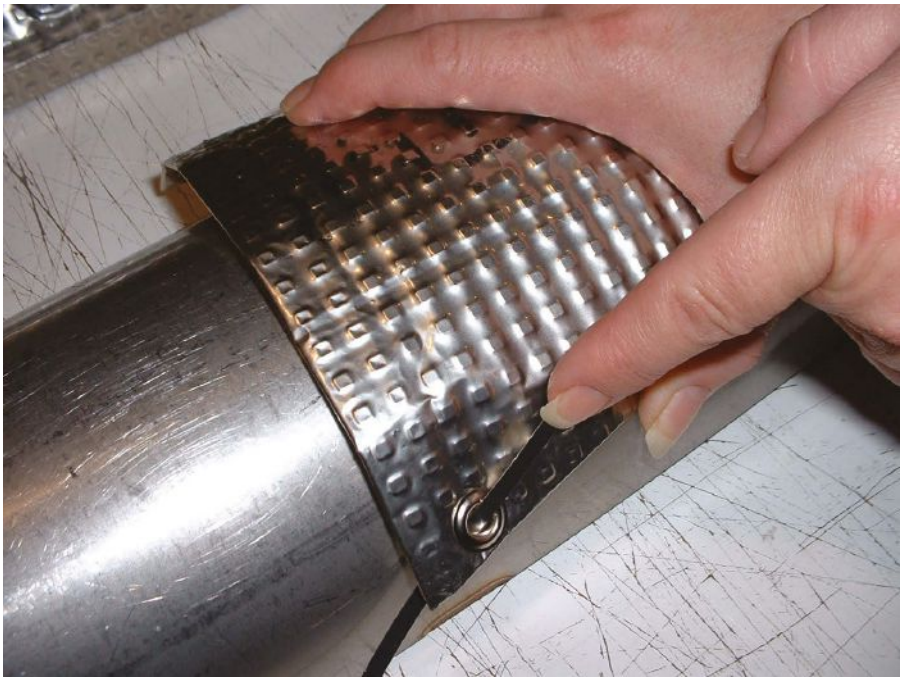
Conner says today's consumers place a premium on comfort.

"Whether navigating city streets or tackling off-road adventures, a comfortable cabin environment is paramount. Effective heat insulation and sound damping solutions have become indispensable for enhancing driving enjoyment."

As such, he encourages shops to talk with customers about their options.

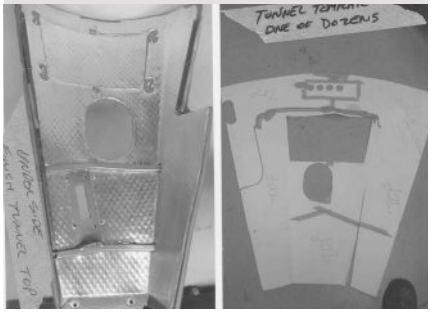
"Many professionals are surprised at how big of a difference a few gallons of LizardSkin and a couple of hours of spray time will make to their customers' comfort and enjoyment."

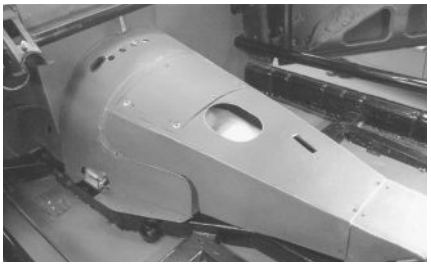






Heat and sound control products have been shown to offer real benefits. (Photos courtesy Koolmat Insulation)





To further awareness, he also suggests establishing partnerships with automotive enthusiasts, clubs and forums, and collaborating with influencers and industry experts to promote expert solutions.

"By prioritizing customer education and engagement, shops can effectively increase heat and sound control product sales and position themselves as trusted providers of automotive insulation solutions."

Koolmat's Hill is always surprised when shops are reluctant to try a new product



Evolving emissions regulations and noise pollution guidelines drive the need for advanced heat and sound control technologies. (Photos courtesy Thermo-Tec Automotive)

line like heat and sound control, pointing to successes in other markets, from NASCAR to England.

"It's not good (not to try it), especially if someone walks in looking for a good product," she says. "References are available for shops that are skeptical."

Wondering who might be good candidates for these products? McCarthy suggests starting with… well, all of them.

"Offer it to every customer that comes in the shop. HushMat is needed in 99.9% of the vehicles on the road today," he says. "Manufacturers don't effectively insulate vehicles. Create awareness with consumers in vehicles the same way that consumers view insulation in their home."

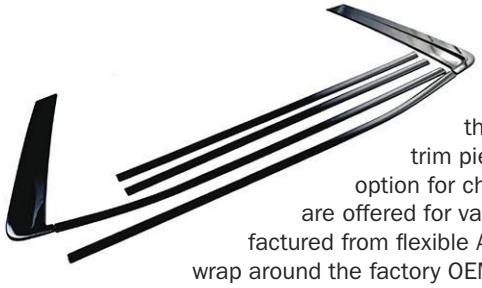
For performance-minded customers, there's no rule that says more power means a less-pleasing environment, says Schwartz from Heatshield Products.

"Push the comfort aspect. You don't need to be uncomfortable in your ride," he states. "Take it from the desert racing guys—they pre-run all their events in a sound- and heat-proof truck for comfort."

Now your customers can enjoy those benefits, too. ***TS***







Overlay Window Sill Trim

Trim Illusion Inc., Bowie, Maryland, presents its new Overlay Window Sill Trim, the latest in the company's catalog of exterior trim pieces. Designed as a long-lasting option for chrome deletes, available products are offered for various vehicle applications. Manufactured from flexible ABS resin, the trim is engineered to wrap around the factory OEM trim, utilizing two-sided adhesive.

4Runner Winch Bumper



Magnum RT Bumpers, Hayward, California, presents its Front Winch RT Style Bumper for Toyota 4Runner models. Designed and built to give a greater approach angle, higher clearance of obstacles and front-end protection, the bumper features thick 3/16-inch steel plate construction with 1/4-inch support braces. It allows mounting of a 30-inch single-row light bar in the middle opening with included brackets and has additional mounting points on the bottom. The front RT Bar can be removed instead for use on 4Runners equipped with Adaptive Cruise Control sensors.



Pickup Bed Drawer System

DECKED, Ketchum, Idaho, introduces its next-generation Drawer System and D-co Case protective case line. Made to fit all full- and mid-size trucks and cargo vans produced in the last 20-plus years, the drawer system allows truck owners to organize, easily access and securely store items in the truck bed while keeping them protected from the elements. The system creates a flat load floor, while full bed-length weatherproof drawers underneath secure tools, recreational gear, rescue equipment or other essentials.

Tundra Suspension Systems



ICON Vehicle Dynamics, Riverside, California, presents its Stages Complete Suspension Systems, now available for 2022-up Toyota Tundra applications. Aimed at improving on- and off-road performance and ride quality, the systems feature custom-valved ICON 2.5-inch-diameter shocks along with incremental performance additions and upgrades at each of the 10 Stages to match individual requirements of specific vehicle setups and budgets.



Ford Center Console Refrigerator

Dometic, Troy, Michigan, presents its CCF-T 2.0 Center Console Refrigerator, now available for select Ford F-150 and Ford F-150 Lightning models. The system seamlessly integrates into the center console to deliver the benefits of mobile refrigeration from the truck's main cabin for easy access and use. The CCF-T 2.0 holds eight 12-ounce cans or six 16.9-ounce bottles, with a temperature range of 36 to minus-4 degrees and uses the factory 12V harness in the center console. It includes dual USB-C charging ports and an integrated LED light.



Sierra/Silverado Suspension Enhancement

Timbren Industries, Whitby, Ontario, introduces its new GMRCK25D Suspension Enhancement Solution (SES) for 2011-24 GMC Sierra/Chevrolet Silverado applications. The kit replaces the bump-stops on the rear suspension of 2500HD and 3500HD pickup models. Hollow rubber springs deliver a progressive spring rate engineered to keep the vehicle level at all times and provide a softer, smoother ride, empty or loaded.

Tesla Sway Bars



Hellwig Suspension Products, Visalia, California, introduces two new Sway Bar options for Tesla Model 3 applications that improve the stability and comfort of daily driving. Forged from heat-treated chromoly steel, the sway bars are designed to alleviate unwanted body roll, pitching and discomfort in corners and turns. They feature a signature powder-coated finish, and kits include all hardware needed for installation. Front and rear bars are offered.

Wrangler Hardtop Hoist



TopLift Pros, Melbourne, Florida, offers its Hardtop Hoists and Lifts that work on a variety of Jeep Wrangler makes and models including YJ, TJ, JK and JL. The patented TopLift Pro delivers fast, easy and safe hardtop removal and storage and works on 1997-present Wrangler TJ, JK, JL, JKU, JLU and 4xe two- and four-door models.

Toyota Boxed Upper Control Arms



Toytec Lifts, Denver, a **DPI Offroad Brand**, introduces Boxed Upper Control Arms for Toyota models, engineered for added strength and performance. Emphasizing alignment optimization and featuring high-quality Uni-Ball and ball joints, the arms include a resilient powder-coat finish and a bold design. Suited for vehicles with oversized tires and 0-4 inches of lift, they offer 100% bolt-on installation and are crafted in the USA with laser-cut, CNC-bent steel.

Ranger Body Styling Kit



Air Design, Oceanside, California, offers its Off-Road Body Styling Kit for new-generation Ford Ranger models. Showcased at the 2023 SEMA Show, the kit includes Super Bolt fender flares, a hood scoop and fender vents for an aggressive off-road look. *TS*



2024 PROJECT VEHICLE SKETCHBOOK

REIMAGINING THE CLASSICS

For many of your customers, driving their special vehicle is as much a mental escape as it is a physical endeavor.

Sure, there's shifting gears and feeling the road through the steering wheel and seat. But there's also a change of mood, reminiscing and a welcome wave of nostalgia.

The best project builds capture that undefinable feeling car lovers get, both in performance and aesthetic. Like many things in life, you know it when you see it.

For examples, flip through the following pages of the latest projects, concepts and special editions. Their inspiration and creativity might help you reimagine a classic or two in your own style.

MERCEDES-BENZ SPRINTER OVERLANDER







Overlanding company **Benchmark Vehicles** introduces its custom **AWOL Sprinter** featuring what it calls the first ever **Iglhaut Allrad** 170 van in the U.S.

Featuring an 11-inch lift, Benchmark brought the build to life starting with a standard 170-inch, two-wheel drive **Mercedes-Benz Sprinter**. The van was manufactured in the United States and shipped to Germany, where Iglhaut Allrad specializes in creating all-wheel drive systems for mining rigs and overlanding vans.

Benchmark Vehicles then equipped the AWOL with front and rear electronic locking differentials as well as a center locking transfer case for synchronized rotation speed of all wheels to provide increased traction.

From electronics to cabinetry to gearing to power programming, the build went to extremes to match its off-road capabilities. Participants include: **TrailReady** (wheels); **Bilstein** (heavy-duty struts with coil-overs); **Agile Off Road** (Ride Improvement Package); **FOX** (2.5 rear shocks); **BFGoodrich** (all-terrain & mud-terrain tires); **FENIX** (interior laminates); **Guzzle H20** (two-stage filtration system); **scheelmann** (orthopedic driver & passenger seats); **Scopema** (passenger bench); **Chilewich** mats provided by **Inhabit Design Works**; **Dometic** (A/C unit); **ROAMBUILT** (Safari 2.0 rack, storage boxes); **Owl Vans** (rear carriers); **Blue Sea Systems** (360 breaker panel); **JL Audio** (amps, subwoofer); and **Focal** (speakers).

1979 PONTIAC TRANS AM









Classic car creator **Retro Designs** presents a reimagined **1979 Pontiac Trans Am**. Thousands of restoration hours resulted in a nimble, powerful muscle car with a personality all its own.

Featuring a 430-hp **GM** LS3 engine mated to a 6L80E transmission, the Trans Am sports period-correct New Zealand Green paint with gold and red accents and Firebird livery.

Supported by a **Detroit Speed** hydroformed subframe and incorporating a modern rear suspension, it rolls on 18-inch **Continental Tires**.

Highlights include: **Wilwood Disc Brakes** front and rear brakes; **Performance Online** hydropower hydraulic brake assist; custom stainless-steel exhaust with **MagnaFlow** mufflers; leather interior; **YearOne** Snowflake wheels; upgraded sound system; and a **Vintage Air** heating and cooling system.

1991 TOYOTA PICKUP

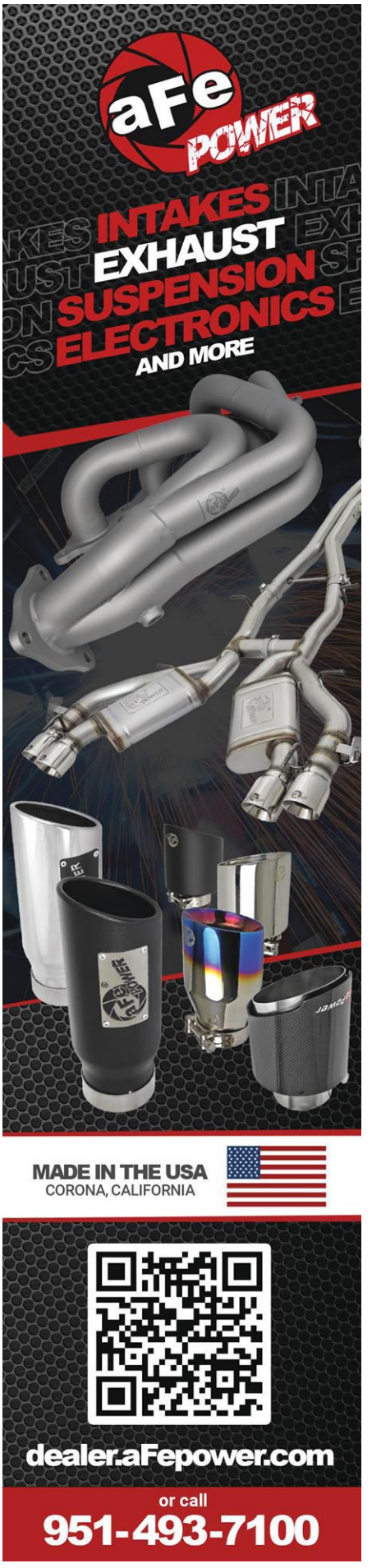


Ron Leslie from **KICKER** sends info on a recent project that's a tribute to a **1991 Toyota** pickup built in 1993 by **Pat Nichol** from California.

Parts and pieces have been collected for more than 10 years, and Leslie reports that "everything on the truck that could possibly be bought OEM Toyota has been bought. Every nut and bolt has been touched with this build."

The one-off rims were created by **Colorado Customs** to replicate a Ronal R-9 in an 18-inch rather than the traditional 15-inch size. The paint is 1973 Porsche Raspberry and the interior is two-tone Italian leather and German Square weave carpet from front to back, including the bed.

Participants include: KICKER (performance audio); **Steven Stout Photography**; **Charm City Upholstery**; **Pickle Fab**; **Mt. Airy Coatings**; and **BASF** paints courtesy of **Kevin Carroll** and **Mark Greenlee**.



G63 AMG







Expert G-Wagen builder **Pit26 Motorsports** recently unveiled its most capable off-road truck yet, a custom **G63 AMG**. Built for a client with a passion for outdoor living, the build features a stretched wheelbase of nearly 20 inches, lifted portal axles of around 150mm and a complete re-gear.

Highlights include **Bilstein** coil-overs, **MagnaFlow** exhaust, **Toyo** MT tires, 18-inch **Innov8 Racing** wheels and a Pit26 step system. The company also engineered new fender flares to house larger wheels and tires and manufactured new roof and bike racks and bumper and skid plate systems for safely traversing any overlanding terrain.

Participants include: **Warn Industries** (winch); **KC HiLites** (FLEX ERA lights); **TruckVault** (storage system); **Pro Eagle** (offroad jack); **iKamper** (Mini rooftop tent); and **LINE-X** (bedliner).

1969 CHEVROLET CAMARO

Power Automedia and **Summit Racing** partnered on a **1969 Chevrolet Camaro** build, aiming to make 899 rear-wheel horsepower and go 8.99 seconds or quicker at its first trip to the drag strip.

The car's transformation was to take place at **Big 3 Racing** in Hinkley, Ohio, led by the Big 3 Racing team with input from Power Automedia's automotive experts including **Jeremy Nichols** of **LSX Magazine**, **Brian Wagner** of **Street Muscle Magazine**, Chris Friend of **Power + Performance** YouTube channel, and **Brian Havins**, Power Automedia's director of content.

Set to be built from the ground up using Summit Racing's extensive catalog including exhaust, cooling, suspension and drivetrain upgrades, the team planned to be finished in nine days, with the process documented start to finish with 30 straight days of content showcased on Power Automedia's Power + Performance YouTube channel, in LSX Magazine and on Facebook, Instagram and TikTok.



VOLKSWAGEN T6.1





Bavarian upfitter **ABT** presents its **XNH** conversion of the **Volkswagen T6.1** transporter. Limited to 500 units, it is named for the upgrades that allow users to "eXplore New Horizons."

Upgrades include the front grille, front and rear skirts, side skirt add-ons and a foil finish with contour lines. The 150-hp diesel van's 18-inch, gloss-black XNH rims are wrapped with **Goodyear** Eagle F1 tires.

An interior designed by **VANING GmbH** includes easy-care, scratch-resistant HPL surfaces and hand-picked, real wood panels. Five seats meet a spacious kitchen with a double-induction hob, refrigerator and table. There is also a pull-out outdoor kitchen with gas cooker in the rear.

Thx XNH's self-sufficient power system features photovoltaic modules and a lithium battery storage unit. Highly effective thermal insulation made of sheep's wool and recycled material keeps occupants comfortable and reduces heating requirements.

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1969 DODGE CHARGER









Ringbrothers unveiled **TUSK**, a meticulous and thorough remastering of an iconic **1969 Dodge Charger**. Engineered from the wheels-up, "TUSK is an uncompromised expression of the original with extensive fabrication and carbon fiber components combined with a modern chassis, suspension and **Mopar**'s powerful crate engine: the 1,000-hp Hellephant," the company notes.

The 426-ci (7.0L) supercharged V-8 delivers 950 pound-feet of torque to the rear wheels via a **Bowler TREMEC** T-56 Magnum six-speed manual and a **QA1** REV Series custom carbon fiber driveshaft with a **Strange Engineering Ford** 9-inch rear end.

Participants include: **BASF** (Glasurit "Black to the Future" paint with contrasting gold elements); **Roadster Shop** (FAST TRACK chassis); **FOX** (RS SV coil-overs); **Baer Brakes** (Extreme 6S six-piston calipers); Ringbrothers (TUSK Edition **HRE Wheels**); **Michelin** (Pilot Sport 4S tires); **Upholstery Unlimited** (bespoke interior); **Gentex** (rearview mirror); **Dakota Digital** (gauges); **Vintage Air** (Gen IV climate control system); and **Miller Welding**.

1981 JEEP J-10 HONCHO SPORTSIDE









The latest **JeepHeritage** build blends **Jeep**'s original rugged styling with subtly executed modern improvements, as shown by its **1981 J-10 Honcho Sportside**. Designed to honor Jeep's original design philosophy and capabilities, the Honcho delivers bright, bold '80s-era vibes that attracted enthusiasts from around the world.

The truck has been expertly restored to the company's Stage One standards. Improved performance comes from an **AMC** 401-ci engine, and the JeepHeritage Sportside also features a 6-inch suspension lift in the front and 4-inch lift in the rear.

Highlights include a multipoint fuel injection system, stainless steel exhaust, new bumpers and grille, and a period-correct, Laredo-style interior with black and gray leather covers for the dashboard, high bucket seats, armrests and door panels.

LAND ROVER DEFENDER

Blackbridge Motors, a well-established name in the **Land Rover Defender** community since 2016, unveiled its latest creation, the **Blackbridge Mark IV**.

Affectionately known as **The Beach Cruiser**, it was built from the ground up. Every aspect, from the frame to the finishing touches, has been meticulously designed, engineered or manufactured by the Blackbridge team, eliminating the need for old, salvaged or donor parts.

With just a four-month lead time, the build includes a 430-hp 6.2L LS3 engine mated to a 6-speed automatic transmission.





MERCEDES-BENZ 280SL



Founded as a preservationist of classic cars through electrification, **Moment Motor Company** presents its newest EV conversion with the company's **Mercedes-Benz 280SL Signature** series.

Carefully selected as a vintage vehicle that can successfully accommodate an EV powertrain and the requisite re-engineering, the new Moment Motor Company 280SL preserves the original intent of one of the world's most celebrated luxury roadsters while creating an incredibly smooth, fun to drive automotive masterpiece that's suitable for daily use and modern driving conditions, according to the company.



The 280SL delivers 370 pound-feet of torque and 300 hp through the company's 400V powertrain and is offered as a complete turnkey vehicle.

GATEWAY BRONCO LUXE-GT



Gateway Bronco presents its next-generation sport SUV, the **LUXE-GT**. Unveiled at **Monterey Car Week 2023**, it is based on the classic **Ford Bronco** but features an all-new modern chassis developed by an international team.

A Ford Coyote 5.0L engine and 10-speed automatic transmission provide reliable power, carrying a functional, meticulously crafted interior and plenty of upgrades including anti-lock brakes, electronic stability control, electronic traction control and all-time, all-wheel drive.

Highlights include: bi-modal active exhaust, pushbutton start, 18-inch sport wheels with **BFGoodrich** tires, four-point family roll bar, **Focal** sound system, rear back-up camera, power windows, A/C, all-weather denim designer interior with leather accents, genuine birdseye maple wood bed and tailgate, patent-pending soft-close doors and tailgate, Bimini top, LED lighting package, **Ombré Design by Katy** paint scheme, **BASF** Glasurit Piano finish and one-of-one Big Sur Love treatment.



LAND ROVER DEFENDER 110





ECD Auto Design presents **Project QE**, a striking **Land Rover Defender 110**. The Dallas-based beauty will serve as a daily driver packed with modern-day amenities and classic British heritage.

Under the hood is a brand-new LT1 V-8 engine with 450 hp. The build sits on 18-inch Land Rover Sawtooth wheels and **BF Goodrich** tires. Handcrafted for easy living, Project QE also includes a classic grille, bumper and six-point roll cage, paying homage to the truck's English roots.

Fully glossed in a custom olive paint and with room for six, the D110 features heated and ventilated **Puma** seats hand-wrapped in a tan **Spinneybeck** leather, stitched with a double vertical diamond pattern and trimmed with black leather piping. Modern touches include **Infinity** Kappa speakers, **Kenwood** Slimline subwoofers, **Apple CarPlay**, **SiriusXM**, Bluetooth and a back-up camera and sensor.

TESLA MODEL S-APEX PLAID

Unplugged Performance reveals **Dark Knight**, the latest **Tesla Model S-APEX Plaid** from its Complete Vehicle program that offers bespoke vehicles tailored to individual preferences and style. With options ranging from exterior colors, interior materials, suspension setups and special features, each car is transformed into a high-performance, high-luxury experience.

S-APEX builds start life as a Tesla Model S Plaid and receive enhanced form and function through extensive aerodynamic, braking, suspension and luxury modifications. Dark Knight's most striking feature is its 19-piece, pre-preg carbon fiber widebody kit that increases the width of the vehicle by 60mm and houses 21-inch, lightweight UP-03 forged monoblock wheels. Unplugged Performance partnered with **Koenigsegg Advanced Manufacturing** to manage rear end downforce with a carbon fiber rear longtail spoiler. Inside, luxury meets sustainability with a custom interior designed through a unique and exclusive collaboration with **von Holzhausen**.



1961 ROLLS-ROYCE SILVER CLOUD II





Among the **Ringbrothers** creations for last year's **SEMA Show** was **PARAMOUNT**, a **1961 Rolls-Royce Silver Cloud II**. Engineered from the ground up, the original bodywork was retained and stripped to bare metal, with the smallest imperfections hand-corrected before the application of **BASF** Glasurit's White as Fluff finish.

With the exception of custom-machined badging and other subtle touches, the mostly stock exterior largely hides the complete transformation of the luxury icon, including the 6.2L LT4 engine with **Bowler** Tru-Street 10-speed automatic transmission and custom **QA1** carbon-fiber driveshaft.

Ringbrothers added countless custom touches including some 3D-printed parts. One special highlight was the more than 1,000 LED lights hand-sewn into the headliner to create a constellation that softly lights the cabin in a cool hue.

Participants include: **Roadster Shop** (chassis, suspension); **FOX** (coil-overs); **EVOD Industries** (wheels with gyro center caps); and **Falken** (tires).



VELOCIRAPTOR 6X6



Hennessey announced full production of its **VelociRaptoR 6X6** supertruck—a **Ford F-150 Raptor R** that has been transformed into a six-wheeled rig.

The pickup starts with an extended boxed frame and a second, fully functional locking rear axle. The suspension features Live Valve **FOX** dampers, a 3-inch lift, custom 20-inch alloy wheels wrapped in 37-inch off-road tires and an 8-foot bed.

Complementing the mechanical upgrades are new front and rear bumpers, LED off-road lights and Hennessey VelociRaptoR badging. The machine stretches nearly 27 feet long, is roughly 7 feet tall and 7 feet wide and has a curb weight of approximately 6,500 pounds.

"The F-150 Raptor R is competent right from the factory, but our 6X6 upgrade improves it dramatically," says **John Hennessey**, company founder and CEO. "It gains significantly more traction thanks to 50% more driven wheels. The 8-foot bed adds gobs of increased utility, and the combination of three axles, a body lift and a roaring V-8 delivers unmatched stage presence."

MERCEDES-BENZ SPRINTER

The **Sky Captain** collection of luxury executive **Mercedes-Benz Sprinter** vans from **Lexani Motorcars** can be used for work and play. With a cabin featuring plush hand-stitched Italian leather captain's chairs and an ultra-vivid starlight sunroof and ceiling, occupants can get down to business or simply relax.

Entertainment options come via a retractable 55-inch smart TV, **Sony** Playstation 5, iPad pro, **Apple** TV, mini-computer and more. For extended trips the Sky Captain also features a bed and restroom with 24k gold-plated fixtures.

Up to B7-level armoring is available that maintains the original appearance and design with superior optics. Additionally, Lexani Motorcars offers an upgraded VIP amenity package that includes luxury champagne flutes, quality crystal old-fashioned glasses, and suede and leather airline table add-ons.









1969 CHEVROLET CAMARO







Custom car manufacturer and restorer **Finale Speed** unveiled the latest iteration of its carbon fiber **1969 Chevrolet Camaro**, featuring a striking candy red paint finish. The colored carbon is the first of its kind, according to the company.

Using custom-mixed **BASF** candy red paint with very precise paint gun air pressures, the carbon panels were finished in a deep, lustrous red that possesses a uniquely clear contrast between the dark gray of the carbon fiber and the red of the paint. The contrast in the weave pattern is apparent from any viewing angle, giving the carbon a 3-D look.

A 650-hp **GM Performance** LT4 crate engine runs through a **TREMEC** T-56 Super Magnum 6-speed manual transmission and 9-inch LSD-equipped rear end with **Dutchman Axles**. **Ultimate Headers** stainless steel long-tube headers and a custom-fabricated exhaust with **MagnaFlow** mufflers give the Camaro its distinctive bark.

Participants include: **Forgeline** (VX3CL-SL wheels); **Toyo Tires** (Proxes R888R tires); **Wilwood** (brakes); **TMI** (interior); **Classic Instruments** (gauges); **Old Air Products** (climate control system); **Mosconi** (five-channel amp); and **Focal** (speakers, subwoofer).

(Photos by Larry Chen)

1990 250GD WOLF



Expedition Motor Company (EMC) introduces its latest **Geländewagen** (more commonly known as the G-Wagen) build, a fully restored **1990 250GD Wolf** that the restoration firm has playfully dubbed **The White Wolf.**

Produced for roughly three years in the early 1990s, a limited quantity of 250GD G-Wagen trucks were built for military use. EMC currently owns the largest stock of Geländewagens in the world with the sole purpose of restoring them as two-door convertible G-Wagens powered by the original five-cylinder diesel engine.

Adorned with a sophisticated white exterior paint scheme along with corresponding mushroom-colored vinyl interior, the White Wolf started its new life with a complete strip-down and media blasting of the truck's frame before adding anti-corrosive primer and a new powder-coat.

Brand-new fuel and brake lines and body mounts were implemented throughout, while the factory axles were disassembled, cleaned and finished with new internals.

The brake calipers were reengineered and bolstered with replacement rotors and drums, and EMC's internally developed suspension was fitted for modern driving conditions.

The durable OM602 2.5L inline-five diesel engine is mated to a stock 711.7 5-speed manual transmission.

LIGHT MEDIUM TACTICAL VEHICLE (LMTV)

ORACLE Lighting's latest and largest project is a fully built **Stewart & Stevenson** M1079 Light Medium Tactical Vehicle (LMTV) global expedition vehicle. Designed to tackle off-grid expeditions and harsh environments, the ultra-capable and EMP-proof bug-out vehicle also serves as a showcase for the company's products and allows real-world testing.

Weighing in at over 18,000 pounds, the truck is powered by a 6.6L **Caterpillar** turbo diesel engine mated to an **Allison** 7-speed electronic transmission. The team fitted a **Superwinch** Tiger Shark 18,000-pound synthetic rope winch, **FASS** Titanium Signature Series 165-gph diesel fuel system and a total of six **XS Power** 100 Ah lithium-ion batteries.

Oracle components include its OCULUS 7-inch Bi-LED Projector Headlights mounted in the off-road front bumper, Universal Illuminated LED Letter Badges in amber that highlight the cab's custom ORACLE badge, 9-inch Multifunction 60W Round LED Spotlights mounted to the cab's roof rack, and flush-mount, 5-inch, 24W Angled LED Scene Light Bars and Multifunction LED Plow Headlights with heated lenses.



Participants include: **Go Rhino** (roof rack); **Pelican** (cargo cases); **PG NOLA** (graphics); **Dynamat** (sound & vibration deadening); and **Glenn Hebert** at **Level Up Auto Interiors** (interior).

1965 FORD MUSTANG

At the **2023 SEMA Show, Ringbrothers** rolled out a custom-built **1965 Ford Mustang** convertible known as **UNCAGED**. Crafted as a companion to its sibling **CAGED**, which debuted in August 2022, UNCAGED furthers the evolution of Ford's original pony car through a reimagining of every line and proportion while maintaining the classic design elements that made it one of America's most iconic and coveted vehicles, according to the builder.

The subtly updated body was widened 1 inch on both sides, and one-off Ringbrothers-built pieces, including the iconic Mustang taillight bezels, side scoops and running horse emblems, were redesigned for proper proportion. The fenders blend seamlessly into the lowered and extended rocker panels, while the front bumper has been tucked and mated to the entirely custom front valance.

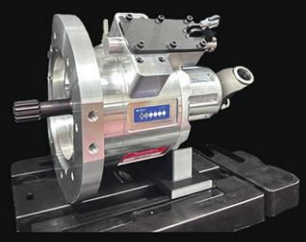
Participants include: **BASF** (Glasurit "Burgundy Brave" finish); **Cerakote** (Titanium C-105P); **Ford Performance** (5.0L Coyote 460-hp crate engine, 10R80 10-speed automatic transmission); **Roadster Shop** (FAST TRACK chassis); **Penske Racing Shocks** (RS Edition performance front and rear coil-overs); **Baer Brakes**; **Continental** (tires); **EVOD Industries** (wheels); **Sean Smith Designs** (interior); **Steve Pearson/Upholstery Unlimited** (interior installation); **Dakota Digital** (instruments); **Gentex**; **Motul**; **GFS**; **Heatshield Products**; **Miller Welding**; and **Painless Performance** (wiring). ***TS***







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PERFORMANCE

Diesel Performance p. 44 / Diesel Motorsports p. 50 / Performance Products p. 52

DIESEL DRIVEN

This strong market is always searching for greater performance, efficiency & durability. **By John Carollo**

Whether for work or play, diesel vehicles offer power and performance options that remain aftermarket favorites.

Accepting a very wide range of aesthetic, under-hood, handling, towing and related upgrades, diesel vehicles can be accessorized and personalized for any activity, making a strong, bold statement along the way.

Serving this dedicated crowd of diesel drivers means understanding the trucks and SUVs from front to back, and can include offering more traditional repair and maintenance services to go along with the latest aftermarket enhancements.

Suppliers can help put your shop on the right track with suggestions regarding hot new products, sales steps and challenges to navigate.

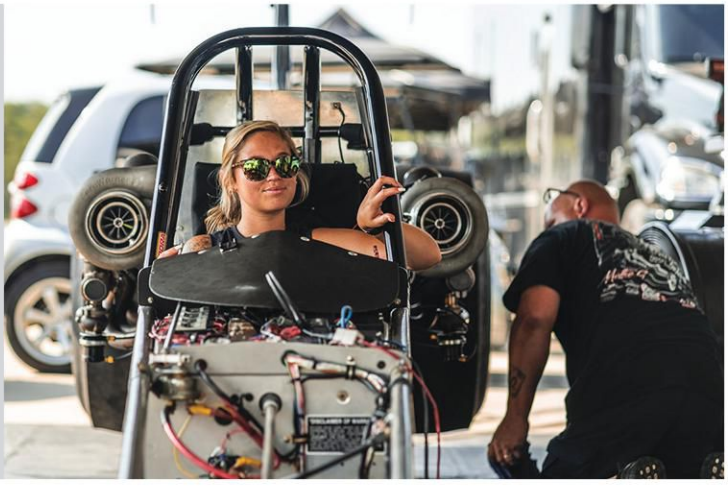
PERFORMANCE DEMANDS

Much like their gasoline counterparts, diesel enthusiasts are always searching for greater performance, efficiency and durability.

"The market has progressively changed, requiring diesel engine manufacturers to adapt to the needs of the modern industry," says Greg Milentis, Business Unit Manager – Differentials for Auburn Gear. "New designs and parts have been implemented to help reduce emissions, encouraging a cleaner, friendlier environment."

Engineers create innovative solutions for common problems. (Above photo courtesy Banks Power)

Josh Steinmetz, brand manager at Hot Shot's Secret, says the market has seen sig-



Mattie Graves' dragster shows just how powerful diesel engines can be. It's no surprise, considering her father, Mike Graves, owns Hollyrock Customs, a diesel performance shop in Hollywood, Maryland. (Photo courtesy Hot Shot's Secret & Kyle Fischer)

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WHSE24TS

DIESEL DRIVEN

HOT DIESEL PRODUCTS

■ **HOT PRODUCT:** Auburn Gear Select-A-Loc Electronic Differential
■ **FEATURES & BENEFITS:** State-of-the-art open-to-lock electronic differential used in AAM 11.5-inch axles (2001-19 GM, Dodge RAM and RAM trucks); 30-spline; all ratios; USA made, designed, manufactured and supported; transfers 100% of the driveline torque to the axle.

Auburn Gear
Greg Milentis
Business Unit Manager–Differentials

■ **HOT PRODUCT:** Monster-Ram Intake System
■ **FEATURES & BENEFITS:** Fits 2007-24 Ram 6.7L Cummins 2500/3500 pickup and chassis-cab applications; improves power and fuel economy; prevents "grid heater bolt failure," which has been known to cause more than $10,000 in engine damage or require engine replacement.

Banks Power
Jay Tilles
Brand Manager

■ **HOT PRODUCTS:** Screamer Turbochargers
■ **FEATURES & BENEFITS:** Available for Cummins, Duramax and Power Stroke exhaust manifolds; fits gasoline and diesel Dodge/RAM, Chevy/GM and Ford trucks; drop-in stock location; larger ballistic compressor wheels; increased airflow; lower EGTs.

BD Diesel
Christian Roth
CEO

■ **HOT PRODUCT:** FASS Titanium Signature Series Fuel System
■ **FEATURES & BENEFITS:** Capable of flow rates of 100 to 290 gph; improved filtration, longevity and quietness; Extreme Water Separator removes over 99% of emulsified and free water and filters down to 2 microns absolute; thermostatically controlled.

FASS Diesel Fuel Systems
Josh Thornton
Lead R&D Engineer

■ **HOT PRODUCT:** Diesel Extreme Fuel Additive
■ **FEATURES & BENEFITS:** A premium 6-in-1 diesel additive that contains a concentrated detergent formula to resolve issues related to Ultra-Low Sulfur Diesel by greatly improving engine performance and fuel economy while reducing DPF regens.

Hot Shot's Secret
Josh Steinmetz
Brand Manager

■ **HOT PRODUCTS:** Timbren SES (Suspension Enhancement Systems)
■ **FEATURES & BENEFITS:** Packed with a progressive spring rate, which means the more weight customers tow and haul, the more it works to improve their suspension performance by eliminating suspension sag and delivering a smoother ride.

Timbren Industries
Andrew Hodgson
EVP





The market has seen technological advancements in diesel engine performance tuning. (Photos courtesy Hot Shot's Secret)

nificant technological advancements in diesel engine performance tuning, including the development of more sophisticated engine management systems, tuners and performance chips.

"These advancements have allowed for more precise tuning and optimization of diesel engines for increased power and efficiency—making great strides in performance to match our gasoline counterparts," he notes. "Diesel performance has become increasingly popular among enthusiasts and truck owners looking to enhance the power and capabilities of their vehicles. This increased demand has led to a wider variety of aftermarket performance parts and accessories becoming available in the market. Meanwhile, stricter emissions regulations have necessitated the development of cleaner and more efficient diesel performance products."

While some things change, others stay the same.

"One key expectation remains—diesel truck owners demand high performance from their vehicles, whether for personal or commercial purposes," says Andrew Hodgson, EVP at Timbren Industries. "Meeting this expectation by providing products that enhance performance, reliability and efficiency has been and continues to be crucial in this ever-evolving market."

Challenges begin with local and national emissions regulations, says Jay Tilles, brand manager for Banks Power.

"The diesel market has become more competitive. However, producing products that pass CARB emissions compliance tests has never been more difficult," he reveals. "Regulations have tightened, costs of tests have risen and the timeline has been extended. This has resulted in most companies settling for selling their parts in all states but California, which ironically is the largest market for diesel products."

Christian Roth, CEO of BD Diesel, lists the changes he's seen.

"Increased EPA attention. Confusion in the market about what products require CARB EO (stock replacement parts). Customers and installers seeking more CARB EO products. Rising costs and lower availability of new trucks. And a rise in DIYers," he observes.

What's affected the market the most, says Josh Thornton, lead R&D engineer at FASS Diesel Fuel Systems, is that "the EPA has cracked down on manufacturers and installers of emissions defeat devices, like EGR/DPF deletes."

CASTING A WIDE NET

With those trends in mind, shops need to be deliberate in their approach to serving diesel customers, understanding that there are many areas of the vehicles that are ripe for improvement.

"Shops can increase sales by educating their customer base. Many customers trust their performance shop to recommend the right products to protect their vehicles," Steinmetz suggests. "Selling a high-quality product will lead them back to you for more recommendations in the future. Offering a wide range of services beyond just performance upgrades can attract more customers. This includes services such as regular maintenance including oils and additives, diagnostics, repairs, custom fabrication and installation of aftermarket parts."



A truck's driveline can impact performance. (Photos courtesy Auburn Gear)

Tilles also sees room for a holistic approach.

"Although performance improvement is still the driving factor for brands like Banks, solving problems for diesel owners has recently become a secondary motivation," he reveals. "Our engineers create innovative solutions for common problems, while improving upon the stock parts' original performance characteristics."

Wondering where to start? Focus on the target vehicle and specific needs, Milentis advises.

"A truck's driveline definitely impacts peak performance. That's why we recommend that shops consider offering our electronic locker. Drivers know the importance of having a rock-solid traction device to get them through daily challenges out in the field."

Fuel system upgrades can be another



DIESEL DRIVEN



Offer products and services based on the customer's unique needs. (Photo courtesy us.bddiesel.com)

enticing area that customers may not initially consider, says Thornton.

There's opportunity in "a complete fuel system that improves filtration over OEM substantially and can triple the life of fuel injection system components. As a customer looking to improve reliability, this is the absolute first modification that should be added to your diesel," he believes.

It even pays to look beyond opportunities traditionally associated directly to diesels, Hodgson advises.

"Growth opportunities for shops catering to diesel performance customers extend beyond the usual suspects of tuners and engine performance products. Those are no-brainers," he says. "However, an area often overlooked is suspension support for towing and hauling. The assumption that larger trucks inherently have adequate suspension for heavy loads is a misconception. In reality, these vehicles frequently tow heavy payloads and benefit significantly from additional helper spring support. Recognizing and addressing this need can provide a valuable avenue for growth."

In the end, gasoline and diesel don't have to be mutually exclusive, Roth explains.

"Many shops that service diesel pickups could also service gas half-ton pickups with our manifolds and transmissions. BD is expanding 'beyond diesel' and currently manufacturing exhaust manifolds, turbochargers and transmissions for popular gasoline light-duty trucks."

This provides a buffer for shops, he continues, as history has shown that when there's uncertainty in the market, stock replacement parts rise as a percentage of sales compared to performance products.

"Offering stock replacement or slightly modified parts as opposed to full performance parts is an opportunity to retain customers—just at a slightly lower price point," says Roth.

TIPS OF THE TRADE

Diesel performance is a deep, bountiful market. Suppliers offer tips for success.

"Listening never goes out of style," says Hodgson from Timbren. "Engaging with customers, asking insightful questions and tailoring product offerings to their specific performance needs are critical practices. Shops that excel in understanding and responding to the unique requirements of each customer not only enhance the purchasing process but also cultivate loyalty, ensuring customers return for future needs."

Tilles from Banks recommends neutralizing price point methodology.

"A common mistake is selling the low-

RAM PROFESSIONAL INCLUDES DIESEL POWER

A variety of propulsion options including diesel power are part of Ram's new work truck and van plan.

Having debuted at the 2024 National Truck and Equipment (NTEA) Work Truck Week show in Indianapolis, Ram Professional commercial vehicle division is designed to offer "full-service customer mobility and value solutions," according to the company.

Operating as a new, separate business unit, Ram Professional "is the next generation in commercial customer vehicle ecosystems and ensures not only best-in-class commercial products but to serve its customers every step of the way, from upfit and conversion needs to electrification and connected services," the company notes.

While "electric" is the word of the day, Ram Professional includes a wide range of products designed to meet the needs of small businesses, work truck fleets and buyers whose commercial vehicles may be their company's lifeblood. Vehicles include the new Ram ProMaster EV, Ram 1500 REV, Ram 1500 Ramcharger, Ram Heavy Duty and Ram Chassis Cab lines. The powertrains include traditional internal combustion, diesel and all-new electric options.

The vehicles are also ready for accessories, officials add.

"Ram is well known for being the most upfitter-friendly brand on the truck market. Ram dealers work with a network of local upfitters and Ram-approved partners to customize every work truck or van to its customers' needs," the company states.



The new Ram Professional vehicle line includes diesel, gas and electric propulsion options.





Fuel system upgrades can be an enticing area that customers may not initially consider. (Photos courtesy FASS Diesel Fuel Systems)

est-priced parts just to secure the sale. When selling the lowest-priced parts, the retail profit is smaller. The retailer should start by offering the best products available regardless of price," he says. "Often, the best parts are priced accordingly because they have the most R&D invested."

Partnerships begin by fitting the customer's desired usage, says BD's Roth.

"The biggest opportunity we see to avoid problems is to ensure your staff members who are selling parts to customers have a full understanding of how the customer intends to use their truck and then match them with the right product to do that," he notes. "Over-sizing or under-sizing a part for the intended truck use based on margin or availability can have dire consequences."

Delivering just what's needed it always the goal, says Thornton.



Diesel performance upgrades can include suspension enhancements. (Photo courtesy Timbren Industries)

"A very simple mistake that we see is a FASS (fuel system) with a higher flow rate than needed. Though our 290-gph system is extremely quiet, the lower-flowing systems will be even quieter. If a truck is fairly stock with just a simple tune, then there is no need to utilize a FASS that would generally be for trucks with 1,000-plus horsepower, as the customer can notice additional sound output."

Providing recommendations based on prior experiences with makes and models of performance parts can lead to better overall customer satisfaction, says Steinmetz of Hot Shot's Secret.

"Diesel additives can offer benefits such as improved fuel efficiency, enhanced lubrication, reduced emissions and prevention of fuel system issues," Steinmetz says. "However, one common mistake is the overuse or misuse of these additives. Different diesel additives serve specific purposes, such as improving cetane levels, preventing fuel gelling in cold temperatures or cleaning fuel injectors. Using the wrong additive or applying it incorrectly can lead to a lack of product performance and the opportunity for repeat business."

Finally, Auburn Gear's Milentis suggests searching for weak links that could lead to problems with a performance build and then solving them before they occur—even if they aren't the upgrades normally at the top of many lists.

"When a truck owner comes to a shop—or searches YouTube for recommended options—for obtaining peak horsepower performance, the aftermarket items commonly recommended include cold air intake, inline tuner, pedal modifier and air (vs. flatback) differential cover. The thing that most checklists don't include is replacing the OE differential with an electronic open-to-lock locker to give the driver the adequate performance needed to get the job done." ***TS***



DIESELS STILL OPENING DOORS



Dirt Drags at Thunder in Muncie in 2023 drew some high-horsepower trucks.

2024 DIESEL MOTORSPORTS SCHEDULE

May 11 – Horsepower Festival Spring
US 36 Dragway, Osborn, MO

May 17-18 – Wapak Truck Festival
Auglaize Fairgrounds, Wapakoneta, OH

June 22 – East Coast Diesel Nationals
Numidia Dragway, Numidia, PA

Aug. 10 – Thunder in Muncie
Gaston Lions Club, Park, IN

Sept. 21 – Horsepower Festival Fall
Eddyville Dragway, Okaloosa, IA

Oct. 12 – Route 66 Performance Expo
Cowan Civic Center, Lebanon, MO

Dec. 12-14 – PRI Show
Convention Center, Indianapolis, IN

Offer attractive repair upgrades to keep the market going strong. ///// **By Ron Knoch**

DIESEL Motorsports 2024-25. If you're doing the market right as a repair and upgrade shop, you should be quite busy. Why?

The HD trucks are still priced high and not coming down much; though some cheaper models are starting to be discounted. The high-end models are still hard to get when ordered—many are six to 12 months out from the OEMs.

Most people got by with their current trucks during COVID. However, they continued to use them daily and now they are worn out. The drivetrains on these trucks need replacing, along with just about everything attached to them.

Even the 2020-22 trucks are starting to show some wear.

As a shop owner, it's essential to know how to replace and rebuild the drivetrains on these diesel pickups. Yes, it is more expensive now post-COVID, but still cheaper than purchasing a new truck—like we said, if you can even find them.

At the shows we are seeing different levels of diesel trucks. The most numerous are the multipurpose trucks used for everyday work and then for play on the weekends. That is why we continue to have race and pulling classes for these trucks at our DIESEL Motorsports events.

We're optimistic about the market as the season gets started and believe shops should be looking forward to a strong selling season this year as well.

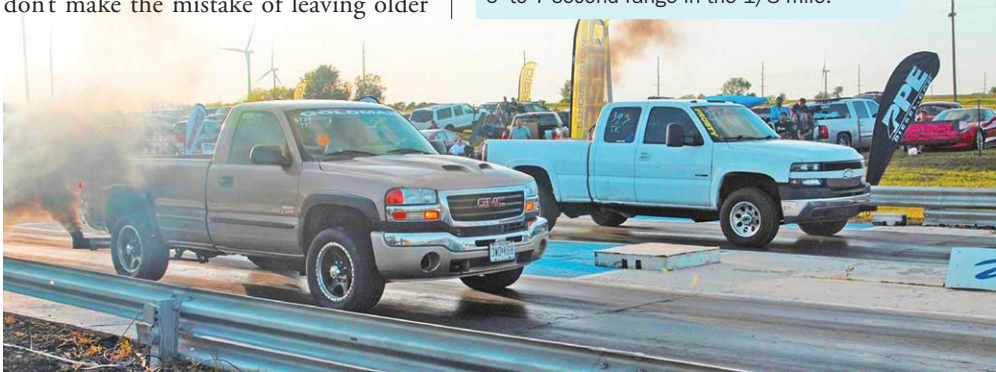
A LITTLE BIT BETTER

When people have their diesels rebuilt, they don't just want OEM replacements—they want an HD build, which means better parts so the engine will last even longer. They also want the transmissions to be built one step above the OE level, again for longevity.

When taking on these types of projects, don't make the mistake of leaving older parts on that will fail such as the starter, radiator, pumps, etc. Any part that will affect the new build by failing prematurely will only cause harm and give the customer pause when bringing it back for service.

Make sure they understand that, by choosing not to replace older parts, the new drivetrain can be damaged. Upsell, upsell and upsell for the best outcome.

Why am I coaching on rebuilds and showing concern for your shop? Even if you've stayed busy, the cost of doing business has gone up as much as 25% to 35% since COVID. Costs of utilities, parts and deliveries can hurt your bottom line before



The Heads-Up Truck category features full-body trucks with numbers easily in the 6- to 7-second range in the 1/8 mile.



Even big duallys can race down the track and put up impressive numbers.

you notice them. In most cases, you can no longer go with your usual markup and hourly rate and stay ahead.

When a customer comes in, recognize the complexity of the job and include rising prices and additional costs in your quote. You may even want to raise your hourly rate if the job demands it.

Remember, shops like yours keep our sport, and diesel trucks in general, on the road, whether it's for pleasure or making a living. Your business is very important to the health of our industry.

For this reason, DIESEL Motorsports has added a diesel shop locator on our new website. I've received many requests in the past from customers wanting to know who to call for repairs. Now they can go to our site and find the shops near their location.

We are still adding to the site locator, so if you don't see your shop listed, just email or PM us to be added (contact info below).

STREET LETHAL

Our events include diesel drag racing, sled pulls, show-n-shine competitions and related activities. We are seeing a lot of street trucks wanting to participate in the shows because this year many of the pulling organizations are cutting them out of their programs, including some local drag strips.

Pressure from outside influences are keeping street trucks out of competitions.

Meanwhile, I saw on a local news station in Nashville over the holidays a report on how bad street racing had become, making it dangerous on the streets for regular traffic. Many tracks have closed due to suburban sprawl or for economic reasons, so there is no place for the young crowd to race.

Don't discount the young people by not letting them race. DIESEL Motorsports offers all classes for street trucks in pulling and racing. Plus, it makes your local customers want to come back to your shop more for repairs or upgrades before the next competition.

I know it's usually a Saturday and many shops are busy that day, but if a show or event comes to your area, try to make it out as a display vendor. A simple pop-up canopy, a 6-foot foldup table, a black tablecloth and a couple of chairs with your trucks sitting nearby make for a nice local shop booth.

Throw out some business cards and a few desirable parts and you'll be surprised how many customers—old and new—will stop and visit.

PARTS MAKE THE WHOLE

Getting parts is still an issue, but my recent visits with manufacturers at winter trade conferences were very positive. Suppliers are restocking and distributing at near pre-COVID levels.

WDs are also working their way back to full inventories. The supply chain is always tricky, and there's no denying that many have suffered during these times. But you can still find parts if you know where to look.

Our DIESEL Motorsports events have changed since COVID as well. The competitions we can offer sometimes depend on the event and location. This makes it more exciting with different styles of activities, though we work hard to deliver the full lineup of competition activities we've always had whenever possible.

DIESEL Motorsports has added truck dirt drags at a couple of locations, combined car/truck show-n-shines at a couple of others, and even gas trucks have classes at some events, so there's something for everyone.

We've been doing these shows for more than 17 years, so as the oldest sanctioning body for diesel motorsports we have a lot of contacts and offers from tracks all over the country. Overall, we expect the shows to be packed again this year with the street trucks having the larger numbers, plus some unique builds we can't wait to see.

Those who can afford those high-powered truck builds will keep pushing the limits. As always, when it comes to the diesel side of the performance industry, there's a lot going on. ***TS***

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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. Learn more at dieselmotorsports.us or contact him at ronk@dieselmotorsports.us or (816) 810-6287.*

PERFORMANCE PRODUCTS

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Classic Car Stereo

Custom Autosound Mfg. Inc., Fullerton, California, presents its USA-630, offering modern audio technology wrapped in a classic car stereo look. Designed to fit in stock dashes without any modifications, it includes a bezel containing the vehicle manufacturer's logo as well as large, OEM-style pushbuttons. Features include a USB input for flash drives to play MP3/WMA song files, and an iPod dock. When connected to these devices, the radio's digital display will show artist, song, album titles and allow song navigation through the radio itself.

LS-Swap Billet Steel Flywheels

Centerforce, Prescott, Arizona, presents a new Billet Steel Flywheel for LS-swap applications. Designed to make pairing a Gen III or IV LS engine to a pre-LS manual transmission simple and reliable, the 168-tooth flywheel provides improved build quality and solves spacing issues when mating LS engines to older transmissions. The pilot bearing is included, and the flywheel comes pre-drilled with pressure plate bolt patterns for early GM 11- and 12-inch applications (3/8-inch bolts) as well as late-model metric GM 11- and 12-inch patterns with dowel pins.





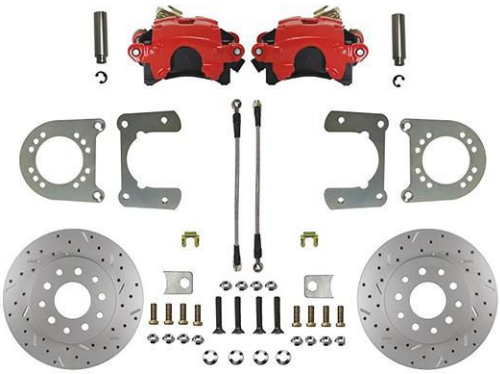
Liquid Acoustic Damper

Heatshield Products, Escondido, California, presents its db Skin liquid acoustic damping material that dampens structural vibrations between 10-40 Hz for a quieter interior. Once cured, db Skin is durable and doesn't require any covering for protection, making it useful for off-road vehicle interiors where carpet is not desired. It can also be used to coat the inside of speaker boxes, improving speaker output by up to 3 decibels. db Skin applies easily with a brush, roller or spray gun designed for applying bedliners.

EV Fire Blanket

Design Engineering Inc. (DEI), Avon Lake, Ohio, presents its EV Fire Blanket. Engineered specifically for the evolving landscape of electric vehicle technology and EV racing, the blanket stands as a barrier against potential fires, offering a critical layer of protection designed to mitigate risks associated with lithium-polymer (LiPo) batteries and electrical systems. It has a 30-minute burn-through time and can withstand temperatures up to 2,700 degrees.





C10 & K10 Rear Disc Brake Kits

LEED Brakes, Cheektowaga, New York, presents its Rear Disc Brake offerings for GM C10 and K10 truck models, now available in upgraded kits with MaxGrip XDS drilled and slotted rotors. Also offered with standard zinc, red or black powder-coated calipers, the systems include an 11.53-inch MaxGrip XDS drilled, slotted and vented brake rotor, plus heavy-duty 54mm single-piston caliper with built-in parking brake and semi-metallic brake pad for optimum performance. The setups allow easy bolt-on installation to the stock axle.



GM C1500 Drum-to-Disc Brake Conversion

Wilwood Disc Brakes, Camarillo, California, offers new Brake Kit Options for rear drum-to-disc conversions for GM C1500 Silverado/Sierra trucks and similar SUVs. The complete bolt-on brake kits make trucks safer with improved stopping power. The rear brake kits include internal parking brake assemblies with a cable connection kit and are compatible with Wilwood front kits, factory ABS and OE master cylinders. Three kits are currently available.

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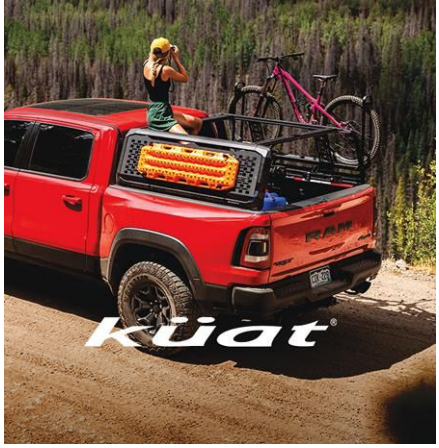
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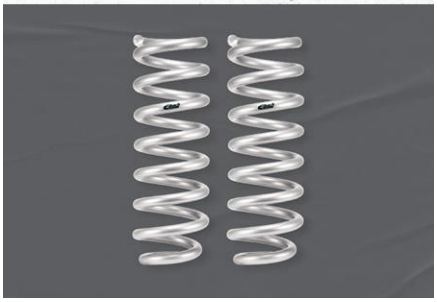
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ADVERTISER INDEX

ADVERTISER	PAGE #
Advanced Clutch Technology Inc	5
aFe-Advanced FLOW Engineering Inc	35
ATECH Motorsports	45
Atlas Copco	53
BALL's Power Windows LLC dba Vintage Glass	54
Borla Performance Industries	47
Custom AutoSound Mfg Inc	41
Design Engineering Inc/DEI	31
Dynamat Inc.	29
Eibach Inc	53
HooVer Products	49
IDIDIT LLC	43
Keystone Automotive Operations Inc	3
Kicker/Stillwater Designs Audio	53
Kuat Innovations	53
Lippert Components Inc	23
LIQUI MOLY USA	54
McGard LLC	25

ADVERTISER	PAGE #
Meyer Distributing	1
Midwest Truck & Auto Parts	33
Motor State Distributing	IBC
National Performance Warehouse	7
RANDYS Worldwide	17, 54
RealTruck	13
Steelcraft Group	15
The Wheel Group	21
Thermo-Tec	27
Torque Trends, Inc.	43
TrailFX	11
Tri-State Enterprises Inc	9, 54
Trim-Lok Inc	31
Turn 14 Distribution	BC
VOXX Intl Corp	39, 53
Westin Automotive Products Inc	19
Wilwood Disc Brakes	IFC, 53
Worksport USA Operations Corp	37

PRODUCTS	PAGE #
Air Design	33
Centerforce	52
Custom Autosound Mfg. Inc.	52
DECKED	32
Design Engineering Inc.	52
Dometic	32
Heatshield Products	52
Hellwig Suspension Products	33
ICON Vehicle Dynamics	32
LEED Brakes	52
Magnum RT Bumpers	32
Timbren Industries	32
TopLift Pros	33
Toytec Lifts	33
Trim Illusion Inc.	32
Wilwood Disc Brakes	52

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Quality, Cost of Ownership Influence BEV Buyers

As more car shoppers make the switch to battery electric vehicles, traditional factors that are also important to buyers of gas-powered vehicles are becoming critical to BEV owner satisfaction.

Quality and cost of ownership have emerged as the top factors influencing BEV owner experiences, according to the J.D. Power 2024 U.S. Electric Vehicle Experience (EVX) Ownership Study.

The study also reveals that public charger availability not only remains the least satisfying aspect of owning a BEV, but also that the experience has become notably worse.

Meanwhile, the BMW i4 ranks highest overall and among premium BEVs, while the MINI Cooper Electric is the highest-ranking mass market BEV for a second consecutive year. Both models score well in their respective segments on the strength of their performance in the vehicle quality and reliability category.

Each model scores more than 60 points (on a 1,000-point scale) higher than their respective nearest segment competitors for that factor.

"The increase in the EV share of the new vehicle market, reflected by seven new rank-eligible models this year, is a notable step in the transition toward vehicle electrification," says Brent Gruber, executive director of the EV practice at J.D. Power. "Many products are hitting the mark and resonating with shoppers but, at the same time, the decline in satisfaction with public charging availability should serve as a warning because concern about access to public charging is a key reason many buyers currently reject BEVs. For EVs to reach their full potential, this issue needs to be resolved."

A quick breakdown of the study offers key findings:

- Public charging isn't just bad—it's getting worse
- Mass-market BEVs deliver higher quality than premium BEVs
- First-time BEV owners are less satisfied than BEV veterans
- Plug-in hybrids (PHEVs) might not present a good alternative to BEVs



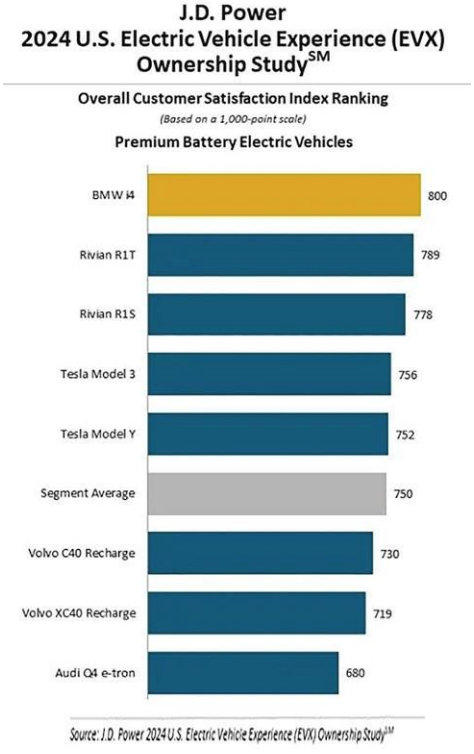
Quality and cost of ownership have emerged as the top factors influencing BEV owner experiences.

The U.S. Electric Vehicle Experience (EVX) Ownership Study, now in its fourth year, focuses on the crucial first year of ownership. The overall EVX ownership index score measures electric vehicle owner satisfaction in both premium and mass market segments.

The 2024 study includes 10 factors (in alphabetical order): accuracy of stated battery range; availability of public charging stations; battery range; cost of ownership; driving enjoyment; ease of charging at home; interior and exterior styling; safety and technology features; service experience; and vehicle quality and reliability.

The study is conducted in collaboration with PlugShare, the leading EV driver app maker and research firm. Survey respondents include 4,650 owners of 2023 and 2024 model-year BEVs and PHEVs. The study was fielded from August through December 2023.

A complete study breakdown is available at jdpower.com.



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