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(Photo courtesy Lippert/ARIES; inset photo courtesy LIQUI MOLY)

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Jef White
Editor
theshopmag.com

More Than Meets the Eye

How many hats do you wear at your business? At home? In the eyes of your friends, neighbors or colleagues?

We all have a lot going on, and sometimes we need to celebrate all that we've accomplished. Sure, it's always great to be recognized for a particularly notable achievement, but simply handling all that life throws our way is a win in itself.

Even if your shop has a narrow focus, there are still dozens, if not hundreds, of details that you must address to keep projects flowing. Some are big, some are minor, but all of them are crucial to long-term success.

In each January issue, THE SHOP likes to take a moment to revisit some of the different topics and trends we've written about over the past 12 months. Again, some are big and some are minor, but all play their part in keeping the specialty automotive aftermarket rolling forward.

- ***JAN '24*** – Riding into a new year; performance oils and fluids go with the flow; step products offer a leg up.
- ***FEB*** – Drag racing's straight shot to sales; tips for shipping a vehicle; PPF has nothing to hide.
- ***MAR*** – Get out of town with overland racks; the right pump fuels their passion; quality exhausts aren't just pipe dreams.
- ***APR*** – Hooking up with the latest winches; the clutch market finds success one gear at a time; CES highlights auto technology breakthroughs.
- ***MAY*** – Heat and sound control products bring comfort and joy; the diesel market is always wanting more; off-road bumpers ride front and center.
- ***JUN*** – Leveling up with the latest lift kits; the Piston Foundation's important mission; why the OEMs and the aftermarket still need each other.
- ***JUL*** – Celebrating U.S.-made products; tonneaus have you covered; take time to chill with performance cooling systems.
- ***AUG*** – Building partnerships with industry suppliers; the global influence of import performance; shocks upgrades handle all drivers with care.
- ***SEP*** – Rooftop tents rise above; pushing the limits with road racing; shop heating tips create warm feelings.
- ***OCT*** – Drivetrain products work in unison; taking an organized approach to cargo management; fleet solutions are a team effort.
- ***NOV*** – Every project vehicle tells a story; aftermarket lights show a clear path to profits; Pro-Touring's special blend.
- ***DEC*** – Consistency rules the circle track market; the crossover appeal of CUVs; forging strong connections with the towing crowd.

So, what hats do you expect to wear as 2025 arrives? Many would argue that not knowing is what makes it special. Regardless of your endeavors, your friends at THE SHOP wish you health, prosperity and success for the new year! ***TS***

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Retail Forecast 2025

Is a welcomed economic rebound headed our way?

BY PHILLIP M. PERRY

Image credit: stock.adobe.com



New York City-based journalist Phillip M. Perry publishes widely in the fields of business management & law.

Clearing skies with a chance of showers.

Projections say retailers can look forward to a gradually improving operating environment in 2025, thanks to lower interest rates, moderating inflation, healthy employment figures and steady-if-unspectacular growth in the nation's overall economic activity.

"We anticipate an OK-but-not great year for retailers—very similar to what they experienced in 2024," says Scott Hoyt, senior director of consumer economics for Moody's Analytics (economy.com).

There will be some pressures on aggregate spending, such as interest rates that remain fairly high—even though they are gradually lowering—but there will also be some supports, such as lower inflation.

Hoyt's estimates for year-over-year sales growth are 3.1% for 2024 and 3.5% for 2025. That compares with the 5.3% seen in 2023.

"The marked slowdown is price related," he explains. "It's due not so much to any decline in the amount of merchandise being moved as much as a slowdown in goods price inflation, which was quite high in 2023."

Pricing power will remain relatively weak—almost as weak as it was prior to the pandemic, Hoyt continues.

"Growth was a lot less price driven in 2024 than in 2023, and we see a similar scenario in 2025."

The pattern of retail numbers is reflected in the larger figures for the economy as a whole.

"We look for real GDP growth of 2.5% in 2025," says Bernard Yaros Jr., lead U.S. economist at forecasting company Oxford Economics (oxfordeconomics.com).

By definition, Gross Domestic Product, the total value of the nation's goods and services, is the most commonly utilized measure of economic growth. "Real" GDP subtracts the effects of inflation.

The good news is that the 2.5% boost is not far off what economists peg as the nation's "natural growth rate"—one that supports business activity and maintains full employment. And reduced volatility in the GDP growth pattern in recent years suggests the nation is on a glide path to a so-called "soft landing," avoiding a recession after a lengthy inflationary binge (see sidebar on page 8).

Despite its positive nature, the GDP figure for 2025 is slightly lower than the anticipated 2.7% when 2024 numbers are finally tallied. That's because the nation is in a so-called "late-stage expansion," characterized by a tendency to slow down while maintaining sufficient force to invigorate commercial operations.

FAIR WINDS

In 2025, retailers can look forward to a decline in both interest rates and inflation—two bugbears that have drained profits in recent times.

"We anticipate a federal funds interest rate of 2.75% by the end of 2025, down from the recent 4.75%," says Yaros, "and we look

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for inflation to average 2.2% in the final quarter of 2025, which will be within spitting distance of the Fed's 2% target."

That's an improvement from the 2.5% inflation level toward the end of 2024.

Note: The figures represent the Federal Reserve's preferred measure of inflation—the "core personal consumption expenditure deflator (PCED)," which strips out volatile food and energy prices.

"Retailers are almost getting the worst of both sides of the inflation coin right now," says Hoyt. "There's not a lot of goods inflation, so that is not helping retail revenues. But there is also a lot of services inflation, which eats into retailers' real incomes, while also leaving consumers with less money to spend on goods."

It's expected that relief from the costs of interest and inflation will help support business profits in all sectors, retail included.

"We anticipate corporate profits will increase 9.6% in 2024 and 9% in 2025, up from their 6.9% gain in 2023," says Yaros.

HEALTHY EMPLOYMENT

Retailers do better when shoppers are optimistic. And, while consumers remain troubled by the residual effects of inflation in the form of high prices for gas and groceries, they remain in a fairly good mood, experts agree.

Retailers do better when shoppers are optimistic.



Image credit: stock.adobe.com

"We look for consumer confidence to move slightly higher in 2025," says Hoyt.

Why the optimism? Healthy employment levels, for one.

"We look for the unemployment rate to end 2025 at 4.2% and 2026 at 4.2%," says Yaros, which is roughly in line with the 4.1% reported toward the end of 2024.

Note: Many economists peg an unemployment rate of 3.5% to 4.5% as the sweet spot that balances the dual risks of inflationary wage escalation and economic recession.

If favorable unemployment figures encourage consumer spending, retailers should also enjoy relief from the deleterious effects of the past year's tight labor conditions. Because of an anticipated de-escalation in the pace of immigration, economists expect the labor force to grow more slowly than employment levels.

Indeed, a slowdown in the rate of hiring has already helped loosen the employment market.

"Labor shortages are a thing of the past in most regions," says Bill Conerly, principal of his own consulting firm in Lake Oswego, Oregon (conerlyconsulting.com). "When companies want to hire, they're able to find the people they want, unless they're looking for something really unusual or if they're

Preparing for a Soft Landing

Modest growth in the nation's economy will support business profits in 2025. (Image credit: stock.adobe.com)



U.S. Gross Domestic Product (GDP) Annual % Change

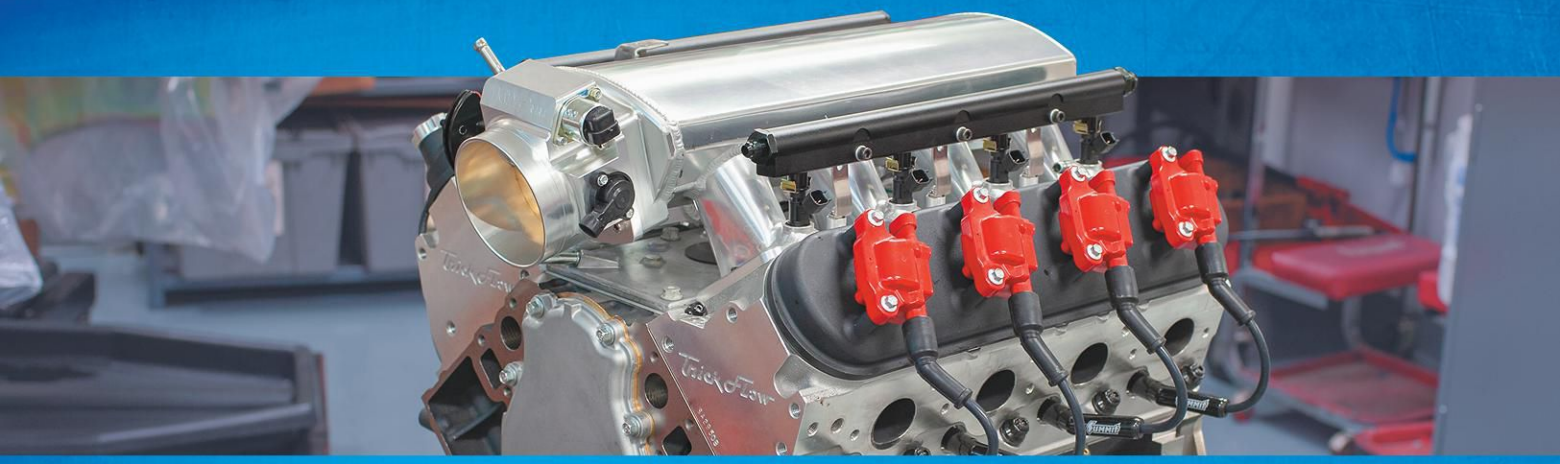
2014: 2.5%
2015: 2.9%
2016: 1.8%
2017: 2.5%
2018: 3.0%
2019: 2.5%
2020: -2.2%
2021: 5.8%
2022: 1.9%
2023: 2.5%
* 2024: 2.7%
* 2025: 2.5%
* 2026: 2.1%

Sources: World Bank
* = projections by Oxford Economics

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WHSE25TS

Trends in job growth and the unemployment rate are major factors affecting consumer confidence and spending power.



Image credit: stock.adobe.com

not willing to pay the required salary."

Speaking of salary, employers are experiencing some much-needed relief in the rising trendline of worker wages. Softening employment growth has given workers less power to demand higher wages.

Entry-level hourly wage increases came to 3.7% in 2024 at companies belonging to The Manufacturers' Association, a York, Pennsylvania-based consortium of nearly 500 companies (mascpa.org). That's markedly lower than the vigorous 8%-10% levels clocked for each of the previous two years.

Historically, such increases have tended to settle in the 2.5% to 3% range.

National figures concur.

"The Employment Cost Index (ECI) is slowing," says Hoyt, referring to a common measure of average worker wages. "We are forecasting 2.8% growth in 2025, compared to 3.9% in 2024 and 4.5% in 2023."

Despite the ongoing de-escalation in the ECI, Hoyt says it remains healthy enough to support consumer spending, as does the expected increase in the nation's total personal income level, an important driver of business activity. Like the ECI, it is expected to follow a familiar 2025 trendline: a healthy increase despite de-escalation.

"Mainly because of slower job growth, we have the increase in wage and salary income slowing to 4.7% in 2025, compared to our expectation of 6.6% for 2024 and 5.4% for 2023," says Hoyt.

HOUSING REBOUNDS

Economists expect healthy growth in housing activity, a mighty driver for the economy in general and retail sales in particular.

"We forecast housing starts to increase by 6.2% in 2025, after falling by 4.7% in 2024 and declining 8.4% in 2023," says Yaros.

Why the rebound? A decline in the cost of money and a concomitant loosening of credit standards.

"Lower mortgage rates should help the single-family home market," says Conerly. "It will be a little less painful for people with 3% or 4% mortgages to give them up, sell their current houses and move up."

Lower interest rates should also reinvigorate commercial construction activity—a sector that has been underperforming.

"The nonresidential side has a kind of bad reputation right now, especially when people think of downtown office or downtown retail," says Conerly. "But, office and retail are doing OK in many suburban areas. And a lot of the retail sector has been under-built. People thought we were totally abandoning going to the store, and it turns out we're not."

When it comes to building projects such as multifamily residential, hotels and offices, expert predicitions agree that a change in fortune will not happen overnight.

"With lower interest rates, there'll be an easier time

New & Used Vehicle Markets Stabilizing

New vehicle registrations have risen and used vehicle registrations have stabilized in the past year, according to automotive lending company Open Lending Corp.

The organization's Near- and Non-Prime Consumer Brief, the latest installment in its quarterly series of data reports on vehicle registrations, found that the near- and nonprime new vehicle market is improving, while the used vehicle market continues to stabilize.

Though supply remained below pre-pandemic levels, in Q2 2024, new vehicle registrations among near- and nonprime consumers rose by 1% year over year and 7% compared to Q1.

Meanwhile, used vehicle registrations dropped to 95% of last year's level and fell 5% from Q1, reflecting ongoing supply and pricing challenges, according to Open Lending officials.

"While the automotive market continues to show signs of recovery, the cost of a vehicle is still a strain for many near- and nonprime credit buyers who rely on used vehicle inventory, which continues to sit below pre-COVID levels. But pent-up demand now could mean better used vehicle options in 2025, as decreasing interest rates prompt buyers to sell or trade in their current vehicles," says Kevin Filan, SVP of marketing at Open Lending.

For automotive lenders, the shifting dynamics signal an opportunity to forge new borrower relationships and help near- and nonprime consumers access the vehicles they need, he adds.

New vehicle payments are rising, but used vehicle payments are starting to fall. The average monthly payment for new vehicle loans increased $10 year over year in the second quarter of 2024, compared to a $10 decrease for used vehicle monthly payments during the same period, the report found.

An Open Lending Corp. report shows the near- and nonprime new vehicle market is improving while the used vehicle market continues to stabilize. (Photo by Ivan Kazlouskij on Unsplash)



Compact utility vehicles continue to be the top choice for near- and nonprime borrowers, but other segments are gaining popularity.

For example, subcompact utility-plus vehicles accounted for 13% of new vehicles purchased by near- and nonprime consumers in Q2, compared to just 5% of similar purchases in Q2 2020, the report states.

Meanwhile, fewer borrowers purchased new, full-size half-ton pickups, possibly indicating a shift toward more affordable and fuel-efficient vehicles.

More information on the Near- and Non-Prime Consumer Brief is available at openlending.com.

lining up project financing at acceptable costs," says Anirban Basu, chairman & CEO of consultancy Sage Policy Group (sagepolicy.com). "But these things take time. We might see some softness in a meaningful fraction of contractors in 2025. And then perhaps things get a bit better in 2026 as these lower interest rates prompt more activity."

Sectors that should do well include:

- Large-scale infrastructure projects
- Computer chip & battery manufacturing plants
- Data centers

"This is the era of the megaproject," says Basu. "Future prospects are quite positive for contractors who are able to participate in major public works."

Much of this is driven by the reemergence of industrial policymaking in America, an economic transformation that has led to programs such as the Inflation Reduction Act, the Chips and Science Act, and the Infrastructure Investment and Jobs Act.

Finally, construction is also benefitting from a return of robust supply chains to the United States.

THE ROAD AHEAD

Despite optimism on the part of businesses and consumers, economists eye some potential dark clouds on the horizon. In the opening months of 2025, they advise keeping a close watch on the following areas for any deleterious effects:

1 *Labor*

"Retailers should start the year by looking at trends in job growth and the unemployment rate," Hoyt advises. "They are so important for consumer confidence and spending power."

2 *Interest rates*

"Going forward, the major concern for businesses will be the pace of interest rate cuts and where they will end up," says Yaros.

3 *Inflation*

"If the consumer price index returns to positive territory, that could throw a monkey wrench into many business plans," says Conerly.

4 *Tariffs*

"Retailers should watch what happens with tariffs, because that will impact costs of goods sold, given that so much is imported from China," says Hoyt.

5 *Geopolitics*

"An increasing level of turmoil around the world can disrupt supply chains, throwing a monkey wrench into the economy," says Conerly.

As concerning as these risks are, economists anticipate a fairly benign overall operating environment in 2025.

"The U.S. economy has been remarkably resilient despite all the hits it's taken over the past few years," Yaros concludes. "We don't anticipate a recession, as the Federal Reserve will be dialing back the restrictiveness of monetary policy and there are no glaring imbalances in the economy." **TS**

Restyling AFTERMARKET ACCESSORIES

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Carry a diverse range of step styles to cater to individual tastes. (Photo courtesy Lippert/ARIES)

RISE Above

Today's step products reach new heights. By Jef White

Offering appearance and utility upgrades to nearly any truck, Jeep or SUV, today's aftermarket step products can help shops get a leg up on the competition.

From lighted and power boards to traditional bars and hoops, there's a style for any driver. Quality manufacturing makes them durable, and customized brackets and factory mounting designs allow for quick, easy installs.

Often an entry point for larger accessorization projects, the step market makes sense for a variety of shops, including those serving off-road, overlanding and even dealership clients.

Suppliers offer insights into the market, highlighting tips, trends and hot new products to help you rise above.

STEPPING OUT

Traditionally a simple truck, SUV and Jeep entry product, these days running boards and steps do so much more.

"Many customers now use rooftop tents, baskets and cargo boxes on CUVs and even cars. These applications usually require the customer to stand in the vehicle's door sill to access rooftop gear. Most door sill areas are not designed to be a safe place to stand, especially in inclement weather," notes John Gray, VP exhaust and exterior products for aFe POWER. "A running board or step on these vehicles can allow the customer to focus on their gear rather than their footing. Not to mention these same running boards or steps help our aging furry friends to safely access the vehicle."

The systems are equally at home on vehicles used on dirt or asphalt, says Matthew Konkle, content managing editor for Quadratec.

"Customers sometimes believe running boards are only designed for those planning to take their vehicle off-road. In reality, running boards and side steps are perfect for daily drivers all the way to extreme off-roaders," he says. "These products make it easier to access rooftop cargo or get in and out of the Jeep, and they offer serious protection from accidental scrapes that sometimes happen no matter where you drive."

As many retailers already know, there is a wide variety of styles and options on the market, meaning understanding vehicle use is a key to success.

"Obviously, the customer wants a step, but is the want purpose-driven or just a look?" asks Tim Watts, VP of sales for Rough Country. "Toe-type hoops give a neat, race-inspired look but don't provide a full foot platform. Make sure you provide options for both looks and function."

The idea is to add style and utility to vehicles, says Trina Hemann, marketing manager for RealTruck Inc.

"Many assume customers are only inter-

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aFe Power
John Gray
VP Exhaust & Exterior Products

■ **HOT PRODUCTS:**
Apex Side Steps
■ **FEATURES & BENEFITS:**
Unveiled at the 2024 SEMA Show; the Apex design offers a rugged off-road look; textured black powder-coat for a secure step; drainage holes on the step pads to avoid buildup; use existing Hex series mounting brackets.

Dee Zee Inc.
Scott Moyer
Director of Marketing

■ **HOT PRODUCTS:**
ARIES ActionTrac Powered Steps
■ **FEATURES & BENEFITS:**
Step-within-a-step design; powered running boards provide easier, two-step access for trucks, Jeeps and SUVs.

Lippert/ARIES
Jeff Perez
Director of Business Development

■ **HOT PRODUCTS:**
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■ **FEATURES & BENEFITS:**
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Quadratec
Matthew Konkle
Content Managing Editor

■ **HOT PRODUCTS:**
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■ **FEATURES & BENEFITS:**
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Raptor Series
Jesse Brown
Director of Operations

■ **HOT PRODUCT:**
RealTruck AMP Research Powerstep Vision
■ **FEATURES & BENEFITS:**
Electronic running board automatically deploys when the door opens and will retract after a 3-second delay when the door closes, utilizing a different color light when the steps are deployed and retracted; app-controlled override switch and lighting options.

RealTruck Inc.
Trina Hemann
Marketing Manager



Versatile offerings help ease inventory concerns and can put common installations on a fast track. (Photo courtesy Dee Zee Inc.)



Most running boards and steps are not difficult to install, providing shops a positive revenue stream. (Photo courtesy aFe POWER)

ested in how the steps look, but the truth is that many are looking for practical solutions to improve accessibility and safety," she says. "Customers should see the highlights of the functionality such as ease of entry or exit, especially for families, the elderly or those with mobility issues. They can be shown the safety features by emphasizing the reduction of falls and added stability getting in and out of the vehicle. Overall, show them the functionality, not necessarily just the aesthetics."

Expected usage will play an important part in the decision-making process.

"Some consumers may think that all running boards are equally durable and weather resistant. There are a lot of factors that play a role in how steps will hold up in specific environments," says Jesse Brown, director of operations for Raptor Series. "Make sure to do your research and listen to feedback from customers who have already put their steps to the test to ensure you're getting a quality step product that will last."

There are also different price points to consider, notes Sara Ford, marketing manager for TrailFX.



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Allow customers to choose their desired running board height; patented design allows for four height adjustments—factory setting, -1 inch, -2 inches and -3 inches.

Romik
Hugo Baeza
Executive Director

HOT PRODUCTS:
Power Running Boards
FEATURES & BENEFITS:
Dual-motor design provides maximum power and reliability.

Rough Country
Tim Watts
VP Sales

HOT PRODUCTS:
Body Armor 4x4 E-Power Board Steps
FEATURES & BENEFITS:
Dual-motor functionality allows for a clean look and support; retractable steps are gaining popularity with today's drivers; systems work well without compromising ground clearance.

The Wheel Group
Chris Walls
New Product Development Coordinator

HOT PRODUCTS:
TrailFX Overland Steel Running Boards
FEATURES & BENEFITS:
Precision-engineered, black powder-coated steel boards designed specifically for each vehicle; hassle-free installation using factory mounting points; vented step area offers a secure surface; rocker-wrap styling protects the underside of the rocker panels.

TrailFX
Sara Ford
Marketing Manager

HOT PRODUCTS:
Pro-e Power Running Boards
FEATURES & BENEFITS:
Designed for functionality and appearance; automatically deploy when the door(s) open and retract when the doors are closed; seamless vehicle integration; convenience and long-lasting quality; powder-coated aluminum for durability.

Westin Automotive
Tony Savasta
VP Marketing



Quality suppliers will offer products for hard-to-find applications as well as the most popular brands. (Photos courtesy Romik)

"Customers often believe that higher-priced running boards guarantee better quality, but this isn't always the case," she says. "It's important for shops to communicate the value and features of various products, as many mid-range options offer excellent performance at a more affordable price."

Versatile offerings help ease inventory concerns and can put common installations on a fast track, says Scott Moyer, director of marketing for Dee Zee Inc.

"SKU count is always a concern to avoid slow-moving inventory. Dee Zee boards have universal lengths for double-cab and crew cab models, and the custom-fit bracket kits are all you need."

Aftermarket options also allow vehicle owners to break away from a ho-hum factory appearance.

"Some drivers may believe steps from the OEM are the best fit for their vehicle, but there are many aftermarket steps available that are better suited to the customer's lifestyle," says Jeff Perez, director of business development for Lippert/ARIES.

Even if the customer's truck has a step or running board from the factory, they are usually not nearly as appealing or functional as what the aftermarket has available, says Tony Savasta, VP of marketing for Westin Automotive.

"There is always an opportunity to sell an upgraded set of steps. Plus, our customer service department is fully empowered to provide any shop with installation or product support."

UNIVERSAL APPEAL

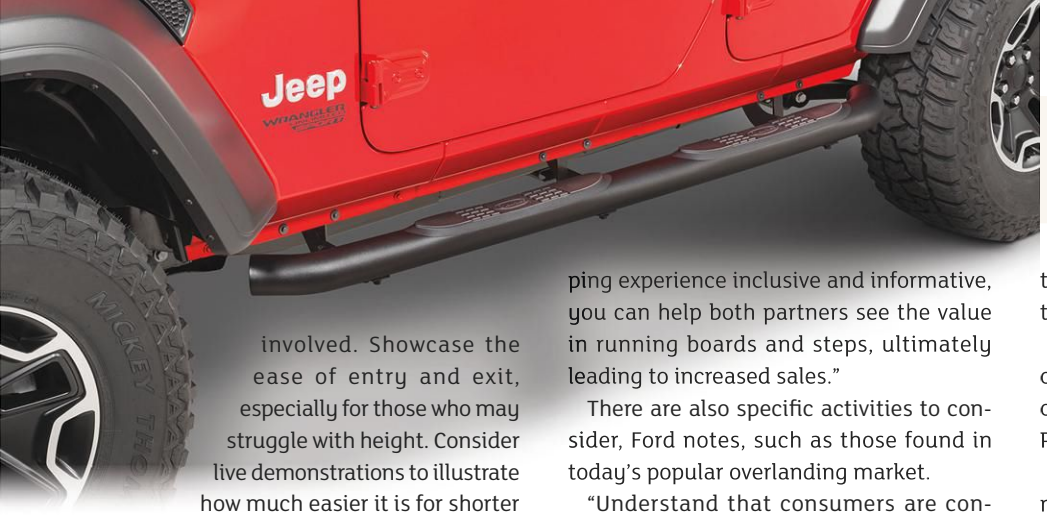
While it's true drivers are usually the center of attention, when it comes to running boards and steps, passengers also matter.

"The most common advice we offer is to ask the customer who is going to be riding with them," says Hugo Baeza, executive director for Romik. "You might be surprised to hear that many times the customer is getting running boards for someone else. Engage the customer and ask them questions to avoid returns."

Hemann encourages creating "a welcoming environment for both partners, particularly by emphasizing the practical benefits that appeal to everyone



Understanding vehicle use is a key to success when it comes to selecting the proper step product. (Photo courtesy Rough Country)



Educate your entire team on the features and benefits of the step products you carry. (Photo courtesy Quadratec)

involved. Showcase the ease of entry and exit, especially for those who may struggle with height. Consider live demonstrations to illustrate how much easier it is for shorter individuals to access the cab. Frame the conversation around how running boards and steps enhance safety and convenience for the whole family, making it a practical choice for everyone. By making the shopping experience inclusive and informative, you can help both partners see the value in running boards and steps, ultimately leading to increased sales."

There are also specific activities to consider, Ford notes, such as those found in today's popular overlanding market.

"Understand that consumers are constantly seeking stylish, functional products that complement their vehicles and lifestyles, like overlanding," she says. "This can help retailers position their offerings more effectively."

It may come as a surprise to some drivers that step products can be considered a customizing accessory.

"Be mindful that each customer has their own unique style and carry a diverse range of styles with multiple features," suggests Perez.

Something unique may be just what that next driver is looking for, Savasta says.

"Every customer has their own vison of how to customize his or her truck, and this means more satisfied customers. Steps are also a great way to introduce your customers to functional accessorizing."

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RISE Above

Quality step products will hold up to the elements. (Photos courtesy Raptor Series)

ADDED FEATURES

While customers value the vehicle access step products provide, professionals often appreciate the quick turnarounds they deliver as well.

"Most running boards and steps are not too difficult to install, allowing the shop a positive revenue stream, and should not void the manufacturer's warranty," says Gray.

Technicians can quickly get up to speed on the latest models.

"Specific to our Power Boards, a common misconception is that they are difficult to install," says Watts, noting that with retractable boards, ground clearance is also not an issue. "To the contrary, they are very easy to install and work with a simple magnetic relay that does not require tapping into the OBD-II port."

However, shops should realize that different systems install differently, says Westin's Savasta.

"The brackets and step alignment details change depending on each truck and step combination. There are many configurations. Only looking at the pictures isn't always enough— it's important to read the installation instructions," he says.

Quick, easy installations also make step products attractive to local wholesale clients, says Chris Walls, new product development coordinator at The Wheel Group.

"Running boards and steps are a common part offered by dealerships and car sellers. Shops can develop a reliable workflow and partnership from neighboring car sellers and dealerships. These businesses need the help of local shops to make sure their vehicles are accessorized and appealing to their customers," he says. "Offering installations on running boards and steps gives a shop the opportunity to build that relationship, which in turn leads to dealership recommendations as well as other work they may need in the future."

Romik's Baeza notes that dealership pitches can include premium model retailers.

"Don't be afraid to sell running boards for high-end luxury SUVs," he recommends.



Shops will want to communicate the value and features of various products and price points. (Photo courtesy TrailFX)





Consumers are seeking practical solutions to improve accessibility and safety. (Photos courtesy RealTruck)

"Customers with Audi, BMW, Land Rover and Jaguar models are all looking for alternatives to the factory offerings."

And for the rare driver who's unfamiliar with today's step products, a simple showroom display goes a long way.

"Put a running board on a peg board so the customer can touch and feel the product," Moyer suggests.

Such displays help customers understand the difference in available products, notes Brown.

"Ensure that you have current displays in your showroom that educate your customers on what will work best for them. Without this, you're leaving them in the dark and assuming that they know what they need, which can result in dissatisfaction in the end."

Konkle names "profitability, cross-promotional ideas and an expanded customer base" as benefits for shops that sell and install step products. It also helps them build strong supplier relationships, he adds.

"By offering these products with a high-quality installation, a shop can gain access as an authorized installer on a manufacturer's website, ensuring staff have quick access to the most recent product features and installation techniques, unique marketing opportunities other shops may not receive, warranty benefits that go above what a manufacturer usually offers, and a first buy chance at the newest running boards or side steps before anyone else."

FUTURE STEPS

When selling step products, Gray from aFe POWER recommends broadening your search for clients.

"Be aware of the products available in different market segments. Educate your



RISE Above



There is always an opportunity to sell an upgraded set of steps. (Photos courtesy Westin Automotive)

customers on the benefits of steps to access lifted vehicles and the added protection to the body panels," he says. "Some steps can also be used for multiple jacking points for changing a flat tire or making repairs."

Walls from The Wheel Group recommends gathering intel to stay on the cutting-edge of product development and market trends.

"Have an open ear to what is out on the market—what is becoming popular and what isn't. The thing about steps is now the market offers advanced options like our E Power board step, as well as some outdated options as well. Either way, there is enough out there to fit a customer's wants and needs," he says. "Knowledge and awareness of the market and its offerings will make you a better salesperson and help you service the customer."

Share that knowledge with your technicians and sales staff to make your shop the local step product expert, says Konkle from Quadratec.

"A shop can put running boards or side steps on every vehicle in the place, but if a customer comes in looking for certain features and benefits, then the sales staff needs to be able to competently answer those questions. They can't just make something up. That's why education will always be important, and that education should never just be a one-day process," he says. "The odds of a sale exponentially increase if staff can demonstrate the latest products and provide accurate bullet point-style information on each one like material build, durability, ease of installation, traction qualities and color options, plus, best of all, talk about other items a customer can buy that will enhance the look and performance of those running boards or side steps."

Drivers rarely stop at just adding a step product, says Brown from Raptor Series.

"Usually when someone is looking for running boards or steps, that is just one of many upgrades that they may be interested in for their vehicle. You can always look to upsell with your other accessories that you have on display in your showroom."

Watts from Rough Country recommends taking a package approach when possible.

"Recognize the opportunity for incremental add-on sales," he advises. "Floor mats are a natural add-on as they are literally a step away from the running boards. Trail cladding, sill guards, etc. are also easy add-ons and help clean up the entryway, often reviving the look of a truck with some mileage."







Running boards and steps are attractive to a wide range of clients.
(Photos courtesy The Wheel Group/bodyarmor4x4.com)





Perez from Lippert/ARIES suggests a few other common add-ons, including bumpers or guards and truck boxes.

Such a multiproduct approach also builds customer confidence, notes Ford from TrailFX.

"By providing running board and step installations, shops can enhance their reputation as knowledgeable experts in vehicle customization," she says. "This specialization fosters trust among customers, encouraging them to return for additional services and products. As a result, the shop can build a strong community presence and become the go-to destination for related vehicle upgrades."

Drivers are doubly happy when they can get the step products they want, along with add-on accessories that make their vehicle unique and functional, says Moyer from Dee Zee.

"Shops have the opportunity to upsell complementary products and the customer only has to make one stop for installation and let the experts handle it," he says.

For the retailer, it's a way to ensure customers have all their needs met, says Hemann from RealTruck.

"When customers come in for steps, they're already in a buying mindset, making them more receptive to exploring other accessories. It's a great opportunity to see new floor liners, hood shields, truck bed covers or anything else the consumer didn't really think they needed walking into the store looking for steps," she says. "Engaging with customers during the installation process allows for personalized recommendations, fostering trust and encouraging repeat business. Furthermore, by providing a one-stop shop for various accessories, customers appreciate the convenience and are more likely to return for future purchases. Overall, running board and step sales can serve as a gateway to broader accessory sales and a more robust customer relationship." ***TS***



Elite, But Not Elitist

Tennessee's Elite Customs believes in personalized vehicles for all.

BY MAURA KELLER

PHOTOS COURTESY ELITE CUSTOMS



Maura Keller is a freelance writer based in Minnesota. She can be reached at maurakeller@yahoo.com.

Tucked in the heart of Franklin, Tennessee, Elite Customs offers a full-service customizing experience, specializing in luxury and high-end vehicles.

However, the shop's specialties don't stop there. Founder Rich McClellan and his team have worked on everything from boats to RVs, offering a wide range of services including body modifications, custom interiors, audio and lighting upgrades and more.

"I founded Elite Customs in 2015 after many years in the industry, learning everything I could. It's truly my passion," McClellan says. "So, when the opportunity presented itself to strike out on my own and start my own shop, that's just what I did."

Unlike other shops he's worked in, however, McClellan always focuses on giving his clients a "voice" in what he creates for them.

ATTRACTING LIFELONG ENTHUSIASTS

McClellan's journey into the world of custom automobiles began in San Bernardino, California, moving to Las Vegas and eventually settling in Tennessee.

"When I met my wife, Sam, in 2018, she had no clue about the custom world, but she immediately fell in love with it, seeing the endless possibilities of creativity and self-expression," McClellan says. "There wasn't much feminine influence in the local industry then, but she saw a market with women in mind. She closed her business and joined Elite in 2022."

Together, the McClellans started their luxury car modification shop in a modest two-car bay totaling only 1,200 square feet. Within six months, they expanded by another 1,200 square feet to meet a fast-growing demand.

In another six months, they moved to a 4,000-square-foot shop. Exactly a year later, they relocated to a 5,500-square-foot building in the heart of Cool Springs. Within two years, they had added another 4,000 square feet.

Now, Elite is thriving in a 12,000-square-foot space with plans to expand again soon.

"We get up every day, hit the ground running, and have the best time doing it," McClellan says. "We have earned the reputation that everyone is welcome here. When a client experiences Elite Customs and says that the process is much more comfortable and exciting than they had imagined, we

Founder Rich McClellan and his wife, Sam, believe vehicle customization presents endless possibilities of creativity and self-expression.



Elite Customs in Tennessee offers a full-service customizing experience, specializing in luxury and high-end vehicles.



Elite Customs is thriving in a 12,000-square-foot space with plans to expand again soon.

know we have a lifelong enthusiast on our hands. That's the goal."

Those enthusiasts can even include noted personalities. Building singer/songwriter Jelly Roll's custom 1964 Lincoln Continental is particularly significant to McClellan, partially because he owns one himself.

"When Jelly Roll commissioned Elite Customs to build one for him and gave us full creative freedom, it felt like a dream come true," McClellan says. "Every single detail of this car was meticulously planned and executed with Jelly Roll's personality and heartfelt music in mind."

Sam played a crucial role, helping with color stories and how textures interact. And the engraving, which garners the most attention, was entirely her idea.

"I even removed the rearview mirror to reflect one of his famous lyrics: 'I took the mirror off of this old Ford, so I only see in front of me.' A little-known fact is that Lincoln is Ford's luxury division, adding another layer of meaning," McClellan notes.

Another memorable project highlight for Elite Customs is a Mercedes G-Wagon Brabus 4x4 Square built for a close friend and client. At the time, the vehicles were only available in custom one-offs, as Mercedes hwas not yet offering them. As McClellan explains, the project combined all the luxury of Brabus with Elite Customs' unique flair.

"People would stop him in traffic to ask about it, and even a foreign leader (who shall remain unnamed) offered him $1 million for it. He couldn't part with it," McClellan says.

The company's diverse clientele, which includes athletes, artists, business executives, suburban moms and first-time car owners, bring unique project opportunities each month.

"Currently, we have six employees. We're a smaller team, but, honestly, we prefer it to be that way," McClellan says. "Finding employees is challenging because many people believe they can jump into this type of work without any prior experience. However, success in this industry requires extensive experience, dedication and sheer grit."

There's no instruction manual for what the shop does, he explains.

"A significant part of our job is figuring out how to make the impossible work. Retaining employees, however, is easier. If you make it past the first 90 days, it's because you have a genuine passion for our work. We function as a family, working together, treating each other with respect and approaching each project as a group effort. Each of us has unique strengths, and we rely on one another to succeed."

LUNCH DATES

One of the Elite Customs' team's favorite traditions is something Sam started back when she and Rich were dating. Every Friday, she would cook lunch for everyone and bring it to the shop.

As things got busier, she had less time to cook every week, so the company now caters lunch, closes the office and sits together to catch up and decompress from the week.

"Everyone looks forward to this all week," Rich McClellan says. "Our kids are friends, and we face life's ups and downs together. When you spend so much of your waking time with the same group of people, it's hard not to become close."

When it comes to pricing projects and services, Elite Customs (elitecustomstn.com) tries to be extremely fair. Many factors go into setting prices, from the list/retail cost of parts to the number of hours a job will take, what portion(s) will require a subcontractor and so forth.

"It's a daily balance that has to be visited often. Danielle, our operations manager, really does a great job with the details and organization of all of that," McClellan says.

When it comes to marketing the company, for a long time the shop simply relied on word-of-mouth advertising. Now, social media also plays a role in building the brand.

"The cars honestly promote our business better than anything we could ever do. Sam began to really harness the power of social media when she came on board in 2022," McClellan says. "She has built a great team to support that part of the business. We don't use social media to sell; that's the first rule. Instead, we use it to build relationships with potential customers and followers."

The goal is to educate and inspire drivers about what's possible while genuinely engaging with the audience.

"We share behind-the-scenes looks at our processes and what goes into customizing the vehicles," he adds. "This transparency helps demystify the process, making it less overwhelming when they decide to work with us."

Elite, But Not Elitist

The shop's branding and social media is dedicated to educating and inspiring drivers regarding what's possible.



Among the shop's high-profile projects was a custom 1964 Lincoln Continental built for singer/songwriter Jelly Roll.

Sam firmly believes in the "know-like-trust" model for the company's social media presence.

"Authenticity is key—people can spot insincerity from a mile away, so we always strive to be as genuine as possible," she says.

EMBRACING CHALLENGES

One of Elite Customs' biggest challenges is fighting against misconceptions regarding vehicle customization.

"The TV shows that you generally think of really aren't what this industry is at all," Rich notes. "We're not putting hot tubs and fish tanks in minivans. We aren't Frankenstein-ing a boat and a truck together. We are improving on what's already there to elevate and personalize your vehicle."

The proposed timeline is also a significant factor of each project. As McClellan explains, people generally think that the "Hollywood edited timeline" is realistic for tearing a car completely apart, redoing whatever it is they are doing, and then putting it back together with attention to the smallest details.

"It just isn't realistic. If we rush it, something gets overlooked or corners get cut," McClellan says. "Customizing your car the right way will take a little bit of time. But, 10 times out of 10, it's worth the wait."

To streamline the overall process, Elite Customs has established strong alliances with local businesses that have proved beneficial. McClellan stresses that no one is an island in this industry and that working with other experts and professionals is vitally important.

"Think of it like a network of people that work together. We're always picking up the phone and calling one another when we run into a new issue or solving a problem after we've exhausted all our familiar options," he says. "And this isn't just local. I've built a network that spans worldwide. And referring people is a big part of that. My mantra for years has always been, 'It's not what you know; it's who you know,' which has served me well."

For McClellan, the best part of working in the industry has always been the individual projects themselves—figuring out how to push the limits and reinvent the wheel, so to speak. Cars evolve, technology advances and the customization industry works to keep pace.

"The joke around the shop is that nothing challenges me more than being told something isn't possible; I'll exhaust myself to prove you wrong," McClellan says. "Sam constantly finds new ways to expand our business and bring Elite Customs to new heights. She focuses on converting new people into custom enthusiasts. Her favorite clients are the first-timers—she loves seeing the moment it all clicks for them when they realize the vast possibilities and start dreaming up their unique personal builds."

Looking ahead, the Elite Customs team hopes to become a household name in the industry and set new standards for automotive customization. Its goal is to bring the custom automotive industry out of the garage and into the mainstream, making it an attainable and accessible option for everyone.

"We want revamping your vehicle to be as commonplace as revamping your home," McClellan says. "Just as you wouldn't move into a builder-grade house without painting the walls or hanging pictures, why leave your vehicle stock when you can personalize and enhance it to reflect your style?" ***TS***

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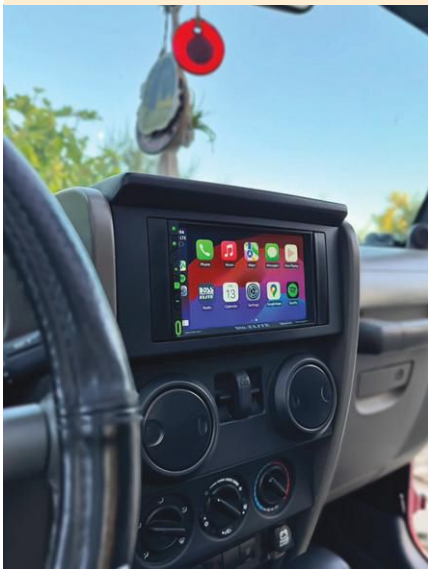
Now Hear This

Quality aftermarket audio upgrades are still music to drivers' ears.

BY JEF WHITE



Aftermarket shops should stay up to date on what solutions car audio manufacturers are developing and what training opportunities they offer. (Photos courtesy BOSS Audio Systems/BOSS Audio Elite)



Some industry veterans may remember a time when there was a 12-volt shop on seemingly every street corner offering a variety of stereo and speaker upgrades. As new vehicle technology and OEM audio systems have advanced, however, the number of shops has dwindled.

These days, factory audio sounds better than ever. But that doesn't mean there's not still room for improvement. It's just that aftermarket upgrades require more sophisticated products and a more refined touch for installations.

If you think audio upgrades have passed your shop by, you may want to think again. Wireless technology, improved installation systems and a wide variety of attractive, effective, powerful products continue to make drives of any length more enjoyable. To dive deeper, suppliers provide more insight into a market that could be music to your customers' ears.

UP FOR THE CHALLENGE

While aftermarket audio upgrades have consistently been a favorite with car buyers for decades, the sophisticated technology found in modern vehicles poses unique challenges.

"OEM advancement continues to make it more challenging for mobile audio manufacturers to integrate aftermarket products into the included audio system, and our authorized dealers and shops feel the result," states Tom Heath, VP of global sales and marketing at KICKER (Stillwater Designs Inc.).

For instance, the shift toward CAN bus-driven audio systems in new vehicles has increased the difficulty rating of traditional aftermarket radio replacements, notes Kevin Kuenzie, vice president of research and development for Stinger.

"This trend has created a significant market for advanced audio integration devices such as amplifiers and processors that can work with OEM digital networks," he explains. "To address this demand, our company is focusing on both the AudioControl and PAC product lines, which are designed for seamless integration with these modern vehicle audio systems. This approach allows us to stay competitive and capture a growing portion of the market as more vehicles adopt these complex digital networks."

When it comes to technological advancements of all types, don't expect a slowdown anytime soon, particularly with the growing presence of EVs.

"Electric vehicle technology is new and it's important for aftermarket shops to understand the limitations of these vehicles," notes Jason Digos, senior sales trainer for BOSS Audio Systems/BOSS Audio Elite. "Aftermarket shops should stay up to date on what solutions car audio manufacturers are developing and what training opportunities they offer."

The next generation of car buyers may be unaware of the options and upgrades available, meaning it's up to the audio aftermarket to educate them.

"Our products offer great tech and quality at approachable prices," notes Greg Fadul, CEO of SoundExtreme by ECOXGEAR.

That includes options for classic vehicle owners seeking a clean interior appearance but with all the amenities of a modern audio system.

"Features such as Bluetooth compatibility, screen display options and RCA Aux-in are attractive to all drivers," says Kurt Bengtson of Custom Autosound Mfg.

LISTEN CLOSELY

Upon hearing a request, shop professionals may quickly jump to a solution they believe would benefit the client. Suppliers, however, recommend a slower, give-and-take approach.

"We all need to do a better job of listening to the customer for their wants and needs, and that would help overcome some shops' negative stereotypes," says Heath. "Also, dealers cannot be afraid to show consumers new technology that will improve the audio experience—expertise is a tremendous feature that our dealers can offer, but they don't show it enough."

That includes recommending higher-grade equipment to match the driver's performance expectations.

"A common misconception is that people are always looking for the cheapest solution for their car audio system," says Digos. "It's better to demo and showcase mid- to higher-end equipment and let the customer decide where they see value."

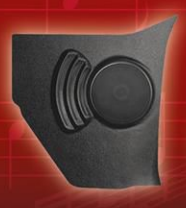


Consumers appreciate features, value and quality installation. (Photo courtesy Custom Autosound Mfg.)

With today's aftermarket, there are quality options available at any budget, says Fadul.

"A customer does not need to spend a lot of money to have great audio with great features."

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BOSS Audio Systems/BOSS Audio Elite
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USA-850 Radio With DigaDial
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Custom Autosound Mfg.
Kurt Bengtson

HOT PRODUCT:
Elite Series SEB28 Soundbar
FEATURES & BENEFITS:
Designed for the truck/Jeep/overland market; no wiring needed; great audio and battery power so no need to tap 12V; quick and easy install.

SoundExtreme by ECOXGEAR
Greg Fadul
CEO

HOT PRODUCTS:
Speakers
FEATURES & BENEFITS:
Live performance sound; mid-range speakers and car tweeters available in several series; deep bass and clear, rich vocals.

KICKER (Stillwater Designs Inc.)
Tom Heath
VP of Global Sales and Marketing

HOT PRODUCTS:
Altitude and Epic Amplifier Series
FEATURES & BENEFITS:
Newly launched, they are already receiving enthusiastic responses from our dealer network and end users; top-line features at reasonable price points to cater to a broad market, from bass enthusiasts to those seeking premium sound quality.

Stinger
Kevin Kuenzie
Vice President Research & Development



Carrying a variety of systems and options opens up shops to a wider customer base. (Photos courtesy SoundExtreme by ECOXGEAR)

Drivers will also be happy to learn that those customized upgrades are available for nearly any platform, adds Kuenzie.

"Stinger has taken a simplicity-first approach to tackle the complexity of modern OEM systems, offering solutions that range from analog connections to full digital-to-digital conversions. These products allow for seamless integration with OEM setups, whether the user needs basic analog connections or advanced digital processing."

For shops serving classic vehicle drivers, it may require a chat about being open to modern amenities to enhance the motoring experience.

"People want some of today's features, but not at the expense of damaging their vehicle interior," says Bengtson. "Shops should have a conversation with their customers, explaining that simple, effective upgrades are available."

THE SOUND OF SALES

Shops looking to increase aftermarket audio sales can start by spreading the word to retail and dealership customers that quality, seamless upgrades are readily available.



Dealers can show consumers new technology that will improve the audio experience. (Photo courtesy KICKER)



Customized upgrades are available for nearly any platform.
(Photo courtesy Stinger)

"We offer flexibility in addressing the challenge of integrating aftermarket audio systems with complex OEM architectures. This means that Stinger can support both analog and digital audio upgrades, whether from an amplifier standpoint or through more intricate system processing," Kuenzie says. "This approach not only ensures compatibility with complex OEM architectures but also makes it easier for installers and end-users to enhance their systems without sacrificing factory features."

When it comes to sales and installation, KICKER's Heath outlines a short list of ways shops can enhance the customer experience by adding extra touches such as:

- Clean the front windshield
- Vacuum the floors of the vehicle
- Perform simple tasks the customer is sure to remember
- Find ways to stand out

"Always be different—in a good way," he suggests. "Do things that your competition isn't doing."

Carrying a variety of systems and options opens up shops to a wider customer base, says Fadul from SoundExtreme by ECOXGEAR.

"Get creative and look outside the box of your normal suppliers and products," he recommends. "There are many innovative audio solutions available."

Custom Autosound's Bengtson notes that proper installation is a key selling point that's vital to a successful project.

"Talented installers make a world of difference and can be what makes or breaks a job," he notes. "They are not always easy to find or to keep, but you have to be able to trust the person putting that new system into a vehicle."

Finally, while it's all about sound in this market, sometimes it's seeing that ultimately makes a believer.

"Have a demo car that showcases the install capabilities and sound quality of an aftermarket audio system," says Digos from BOSS Audio Systems/BOSS Audio Elite. "A good demo system should not be an over-the-top system, but something that gives the customer a great listening experience." ***TS***

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YOUR FINAL SALE PART II

Steps to smooth the process of selling your business.

BY JOSH POULSON



Named the 2022-23 SEMA Person of the Year, Josh Poulson is the principal of Auto Additions in Columbus, Ohio, which was named Restyler of the Year, 2012-13. Auto Additions offers a complete line of product upgrades including 12V and appearance packages with a specific focus on the dealership segment. Josh is immediate past-chairman of the SEMA PRO council.

EDITOR'S NOTE: *This is the second in a two-part series outlining the basics of preparing to sell your specialty aftermarket business. Part I appeared in the December 2024 issue of THE SHOP magazine.*

Last month we discussed how important it is to start thinking about your exit plan—whatever that looks like, and whenever it may be—and what it takes to be prepared when the time finally arrives.

The second part of that is determining how much your business is worth and the proper next steps to take.

CALCULATING A SALE PRICE

So, what's your business worth? That is the magic question, but, of course, in one way the answer is very simple—your business is ultimately worth whatever someone is willing to pay for it.

But, yes, there are things we can look at to get a more accurate determination of the worth of your shop. Different buyers are going to look at different things that will help shape their offer.

Some buyers are interested in the shorter term and may just want to see evidence of a good profit margin so that they can grow it a little and then sell it again themselves. Others are thinking longer term and may be OK with current slow or even plateaued growth, knowing they are still making money and will own a solid business.

To quantify it, your business is really worth the total of these two things:

Assets

Assets are the total dollar value of your good inventory, company-owned vehicles and equipment (tools, machinery, computers, office furniture, etc.) plus the building and/or property, if part of the sale.

The value of these can be negotiated, but usually the inventory is worth what you paid for it and everything else would be current value.

So, sorry, but you're likely not going to get $5,000 for that conference table you bought new seven years ago for $6,000—things depreciate fast.

Shop owners need to be reasonable regarding the actual value of what they have.

Goodwill

It's difficult to determine an accurate dollar figure for this part of the sale. The reason why is it is basically "blue sky," meaning it is just a number that both parties agree upon for any dollar amount above and beyond the assets of the business that can be counted and shown on paper as having value.

Things included in a goodwill tally would include the name of the business, the website, the phone number and overall reputation of the company/brand.

Again, this will be part of the negotiations to determine overall value, so having a tangible number in mind will help you determine an acceptable price.

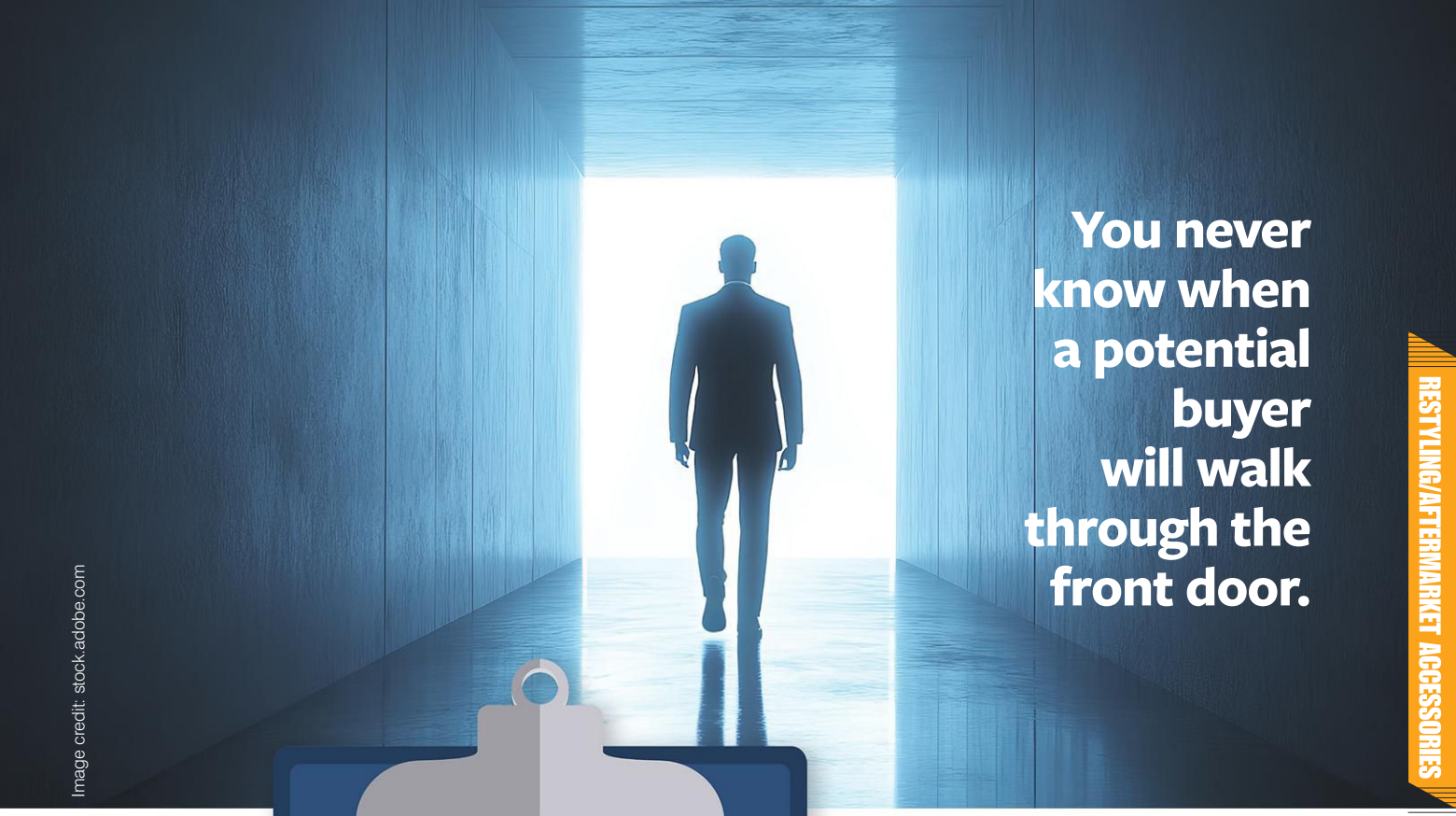
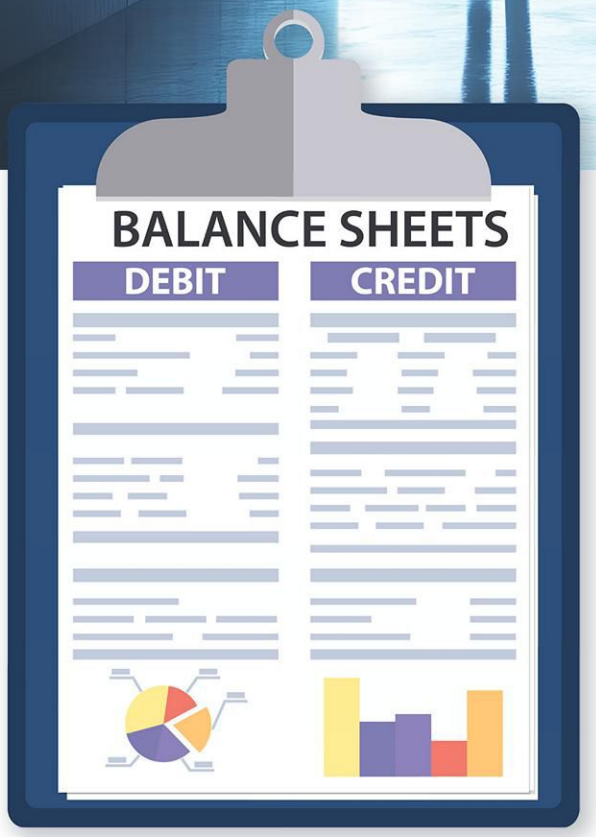


Image credit: stock.adobe.com



Potential buyers are hoping to see a good balance sheet that shows higher assets versus liabilities. Image Credit: Rogatnev - stock.adobe.com

IMPRESSING BUYERS

Once your business is on the block, what do buyers want to see? At or near the top of the list are a good balance sheet that shows higher assets versus liabilities and an agreeable profit and loss (P&L) statement showing a healthy profit over the past few years.

What's a good bottom line in the restyling business? Well, it can depend on a lot of things such as if your product offerings are heavier in wheels and tires versus tint and PPF, for example. Or are you more labor heavy or product heavy?

Whatever the situation, most buyers will want to see your bottom line EBITDA (Earnings Before Interest, Taxes, Depreciation & Amortization). This number can be calculated to show what percentage of your sales is actually profit.

Without getting too deep into all the scenarios, here's a rundown showing what many consider to be the standard:

- 20% or higher EBITDA = Outstanding
- 15%-20% = Very Good
- 10%-15% = Good
- 7%-10% = OK
- 4%-7% = Needs Work
- Under 4% = Something's Wrong

However, before you decide to either sell your business this afternoon or close the doors permanently after seeing these percentages, please note that there are variables that can make these numbers different for every business.

For instance, if you are the owner but participate very little or not at all in the shop's day-to-day business operations, then perhaps your income for the year could be added back to the bottom line to help bring the numbers up. Or, maybe you have some loans that will soon be paid off, thereby boosting your future percentages.

All these things and others can be considered, depending upon your unique situation.

Good advice can come from two sources. First, start with your CPA or accountant. More than likely, he or she will be able to help you put most of this together.

Then, as a secondary source, you could work with an attorney who specializes in mergers and acquisitions as the sale becomes closer to reality, as needed.

Regardless, now's the time to start working on these things instead of waiting, because you never know when a potential buyer will walk through the front door. When they do, you want to be as ready as possible to make that final sale. ***TS***



Bronco Lights

EGR USA, Ontario, California, presents its highly anticipated Ford Bronco VSL (Vehicle Side Lights) LED Lights. Designed to deliver superior illumination and a modern look, enhancing both the safety and style of the Ford Bronco, the lights feature a sleek design and high-performance output.



Full Bed Access Tonneau Cover

Worksport, Buffalo, New York, presents the AL4 Hard Tonneau Cover featuring an advanced four-panel design that provides full bed access. Ultra-thick aluminum panels are fortified with a Diamond Shield Ceramic finish for scratch and dent protection. Combining premium materials with cutting-edge engineering, the AL4 is a lightweight, stylish, durable cover that stands out with a sleek, modern design.

Colorado/Canyon Skid Plates



American Expedition Vehicles (AEV), Wixom, Michigan, presents its Skid Plates for 2023-newer Chevrolet Colorado/GMC Canyon models. The same factory-installed package found on the all-new Colorado ZR2 Bison and Canyon AT4X AEV Edition, the plates are manufactured with hot-stamped boron steel for strength and weight savings. AEV skid plates are sold individually and available for the IFS, transmission/transfer case, fuel tank and rear differential. They are designed, tested and manufactured in the USA.



Headlight Bulb Upgrades

Lumileds, Farmington Hills, Michigan, presents **Philips** NightGuide Platinum Halogen Upgrade Headlights as a direct replacement for standard headlight bulbs. Designed to improve visibility at night and enhance driver comfort by reducing fatigue, the bulbs project light farther ahead, giving drivers more time to react for safer driving. A cool white color temperature of up to 3400K helps enhance nighttime visibility and reduce eye fatigue on long drives. The upgrade halogen headlights are DOT compliant and feature sharp beam cut-off.



Windshield Protection Film

Ceramic Pro, San Diego, offers Windshield Protection Film. The optically clear film absorbs impacts from road hazards and prevents costly rock chips, pitting and bullseyes. For track and road use, the film seamlessly integrates with the vehicle's windshield and keeps glass intact in case of accident or impact. It also guards the vehicle's interior against 99.9% of the sun's harmful UV rays.

INEOS Grenadier Side Kick Accessory Panel



Leitner Designs, Corona, California, presents its Side Kick INEOS Grenadier Accessory Panel. Designed to mount directly to the Leitner 3/4 Platform, Full-Length Platform or INEOS Load Bar Kit, the panel installs in minutes and can safely hold up to 200 pounds of off-road gear. It comes predrilled for **MaxTrax** light boards and **Rotopax**, as well as custom jerry can holders. The unit also features universal MOLLE equipment to make it compatible with most accessories.



Tacoma Suspension

Timbren, Whitby, Ontario, presents its Timbren SES (Suspension Enhancement System), with applications now available for the all-new 2024 Toyota Tacoma. SES kits are designed to improve performance while towing a camper, hauling toys or using the Tacoma as a work vehicle. Designed with patented Aeon rubber spring technology, they eliminate suspension sag for a safer, more controlled ride.

Roof/Bed Rack System



iKamper, Kent, Washington, introduces its new Raconteur Rack Series. The roof/bed rack system is overbuilt by design, featuring a steel frame, stainless steel hardware, chip-resistant powder-coatings and high-strength aluminum crossbars. Designed for a combination of strength, efficiency and utility, the systems are currently available in roof rack and bed rack varieties for Toyota Tacoma, Toyota 4Runner and Jeep Gladiator models. They seamlessly integrate with the company's rooftop tents and a host of adventure-ready accessories.



Sport Series Wheels

OE Wheels (OEW), Sarasota, Florida, presents the latest additions to its 4PLAY Wheels lineup. The Sport 2.0 (S2) Series ranges in sizes from 17 to 24 inches, with a variety of all-new finishes and fitment options, making the five new wheel options available for most modern trucks, SUVs, Jeeps and 4x4s. Each S2 Series wheel utilizes weight-reduction technology, vehicle-specific load ratings and cutting-edge designs. Multiple finish options such as satin black, satin bronze and brushed black are available for good looks on and off the trail.



Combination Hitch

GEN-Y Hitch, Nappanee, Indiana, presents its new ADVANTAGE Combo Hitch. Combining a fifth wheel hitch and a gooseneck ball, the system is designed for customers who tow with both applications. Offering up to 25,000 pounds of towing capacity, the maintenance-free hitch is made in America and includes a durable black powder-coat finish. It offers a seamless transition from a fifth wheel connection to a gooseneck ball without the hassle of removing the hitch.

Automotive Masking Tape



Saint-Gobain Abrasives, Worcester, Massachusetts, presents its new Norton Premium Automotive Masking Tape. Optimized for the paint masking process, the tape delivers sharp paint lines and protection in repair applications including spray-paint preparation and high-temperature painting. Its rubber-based adhesive works on a variety of surfaces such as painted metal, rubber and glass, enabling clean removal after bake cycles of up to 248 degrees. A flexible crepe paper backing makes the application process easier.



Beadlock Wheels

ORZ USA, Carson City, Nevada, presents its **Bawarrion** brand Bon'Z Beadlock2 beadlock wheels for Jeep JK, JL and JT applications. Offering the heavy-duty beadlock ring and recessed beadlock bolts of the original Bon'Z Beadlock, plus its stability, valve stem protection and easy-clean design, the Beadlock2 can retain the original's beadlock function and benefits, or the tire can be mounted in a traditional non-beadlock fashion. Both mounting configurations can handle the stresses of heavy loads and the wheels are available in black and dark bronze finishes. ***TS***

PERFORMANCE

Performance Products p. 40 | Hot Rod Business p. 42

Modern vehicles require specially formulated motor oils and performance fluids. (Photo courtesy LIQUI MOLY)

the LUBRICATION equation

When it comes to performance oils & fluids, there's always a right answer.

BY JOHN CAROLLO

Somewhere along the line, motor oil stopped being simply motor oil. Different blends arrived for different applications, resulting in horsepower gains, added efficiency and increased protection for specialized usages.

These days, the science behind motor oil means that shop professionals and engine builders can determine the right formula for any project, matching performance goals with longevity requirements. Mix in a range of performance fluid and additive offerings, and it quickly becomes apparent that specialized knowledge is needed to determine each proper lubrication combination.

To help, performance oil and fluid providers highlight market insights and recommendations to shops looking to solve the lubrication equation.

THE OPPOSITE OF SNAKE OIL

Today's precision engine parts require oils and fluids that match their performance.

"Better engine materials and more accurate and precise machining processes have allowed newer street engines to be made with tighter clearances. Along with tighter clearances, a push for yet more improved on-road fuel economy has forced the development of lower viscosity offerings that still manage wear and heat at a high level," observes Jaret Lozano, manager – lubricants division of VP Racing. "In fact, this has forced ways to viably protect parts while using lower viscosities and overall chemistries."

The result, Lozano continues, "is that additive packages have improved and adjusted, and this overall shift has led to a closer look at all components and how they work together, including a relook at base stocks themselves."

The effects of this new technology have transformed the performance oils and fluids market by allowing for highly specialized formulations that cater to specific engine



Don't be afraid to ask questions to discover the customer's individual needs. (Photo courtesy LIQUI MOLY)

PERFORMANCE OILS & FLUIDS

■ **HOT PRODUCT:** Signature Series Gasoline Engine Oil
■ **FEATURES & BENEFITS:**
Precision-formulated with cutting-edge technology to deliver more engine protection against horsepower loss and wear; protects turbochargers 72% better than required by the GM dexos1 Gen 2 specification; trusted by professional engine builders.

AMSOIL Inc.
Mark C. Nyholm
Senior Product Marketing Manager & Mechanical Engineer – Commercial

■ **HOT PRODUCT:**
Hot Shot's Secret R82+
■ **FEATURES & BENEFITS:**
A premium diesel additive engineered to elevate standard pump fuel into a high-performance diesel with optimized cetane levels and enhanced lubricity; balanced formula boosts engine power and efficiency and provides essential lubrication.

Hot Shot's Secret
Josh Steinmetz
Brand Manager

■ **HOT PRODUCT:**
Cera Tec Additive
■ **FEATURES & BENEFITS:**
High-tech additive known for reducing friction to increase engine life and efficiency in gasoline and diesel engines; offers high quality, performance and extra protection.

LIQUI MOLY
David Kaiser
Head of Research & Development

■ **HOT PRODUCTS:**
Performance Engine Oils
■ **FEATURES & BENEFITS:**
High zinc levels; 5W-50 blend is particularly popular with Mustang owners; BMW folks love our 5W-30 or, depending on the model, our 10W-60 offerings.

Red Line Synthetic Oil
Mark Beatty
Brand Director

■ **HOT PRODUCT:** Pro Grade Full Synthetic 15W-50 Race Oil
■ **FEATURES & BENEFITS:**
Covers many applications and equipment types; delivers outstanding performance and protection in demanding environments; offers best in class base stocks and additive packages.

VP Racing
Jaret Lozano
Manager – Lubricants Division



Take the time to explain the unique benefits and technologies behind specialized products. (Photo courtesy Hot Shot's Secret)

types, performance levels and environmental conditions, notes Josh Steinmetz, brand manager of Hot Shot's Secret.

"Advances in nano-lubrication technology, for example, allow for performance oils that reduce friction and wear more effectively than ever before, extending engine life and boosting horsepower efficiency," he says. "This technological progress enables us to create products like our FR3 Friction Reducer, which is a clear nano carbon that optimizes engine performance and wear protection in demanding conditions."

Globally, fuel economy and CO2 emissions regulations for passenger cars and commercial vehicles are tightening, leading to the development of highly efficient but increasingly complex drive technologies and exhaust systems, explains David Kaiser, head of research and development at LIQUI MOLY. The new technologies have created





Specialized formulations cater to specific engine types, performance levels and environmental conditions. (Photo courtesy Hot Shot's Secret)

new operating conditions with new tasks.

"Downsizing of engines can lead to massive damages (called LSPI = Low Speed Pre-Ignition) mainly in gasoline direct-injection turbocharged engines," he says, adding that hybrid drive systems create up to 25% lower oil temperatures. "This results in more oil dilution from unburned fuel and condensation. Such modern powertrain designs require more than just a regular oil change in order to reduce engine damage to maintain the maximum lifetime of the engine and exhaust aftertreatment system and to lower the operating costs."

Today, he continues, motor oil can be viewed as a specific part of the engine and its exhaust aftertreatment system.

"Modern vehicles therefore require specially formulated motor oils—a 'liquid spare part,'" says Kaiser.

Mark C. Nyholm, senior product marketing manager and mechanical engineer – commercial, for AMSOIL, acknowledges OEMs are designing engines that build more power in smaller packages, with transmissions that have more gears to put that power to the ground. Add in better fuel economy and reduced wear demands, and today's engine oils are met with many challenges.

"Engines run hotter now due to their higher horsepower output and many times while under forced induction. Protecting that engine from heat is part of an oil's job," he says. "Additionally, this new engine technology is strapped with an emissions system to help control pollutants that can be affected by engine oil, so today's oils also need to help protect the life of the emissions system. Technology has driven lubricant performance to provide far better protection than in the past."

Meanwhile, the specialty aftermarket has always demanded even more performance from its top oil offerings.

"New technology has not changed what we do," says Mark Beatty, brand director for Red Line Synthetic Oil. "Yes, oil requirements have become thinner in viscosity, but we have always made lightweight oils. We have never engineered our oils to meet factory specs—we have always produced products that exceed their specs, offering better protection and, in certain applications, longer drain intervals."

IYKYK

One small downside to the high-tech nature of today's performance oils is that it can lead to consumer misinformation that profes-

Protecting engines from heat is part of an oil's job. (Photo courtesy AMSOIL Inc.)





Educate your team about oils and the differences in brands and offerings. (Photos courtesy Red Line Synthetic Oil)

sionals will need to address—not the least of which is that added capability comes at a higher price.

"One common misconception shops face is the idea that all oils and fluids are essentially the same, especially when it comes to high-performance needs," Steinmetz says. "Many customers assume any oil labeled 'performance' will do, without understanding that advanced formulations—such as PAO (polyalphaolefin) oils—are engineered specifically for extreme conditions. PAO oils, like Hot Shot's Secret Adrenaline Racing Oil, offer exceptional thermal stability and oxidative resistance. This means they maintain their performance at higher temperatures and under severe load conditions, making them ideal for racing or heavy-duty applications."

Educating customers on how quality products go beyond conventional or even basic synthetic oils in protecting and enhancing engine performance can help them understand the benefits of investing in a specialized product.

"Using an oil designed with high-performance PAOs can make a noticeable difference in reducing wear, improving efficiency and extending the engine's life, especially for customers pushing their vehicles to the limit," he adds.

Even with gearheads, Nyholm explains that the performance benefits of engine oils and transmission fluids are not always well known to consumers.

"Most think oil is oil. While it may keep them on the road doing the things they want, it is not always providing the protection that consumer needs, given either the vehicle they drive or the way they drive it," he says. "Providing consumers with performance options you can simply explain the benefits of will help them choose better-performing engine and transmission oils that will help protect their vehicles from themselves."

One buzzword that gets thrown around, sometimes inaccurately, is "synthetic."

"Just because a bottle says 'Full Synthetic' does not mean it really is," Beatty explains. "We are a true full synthetic oil—starting with PAO and ester base stocks is the only way we do things. We aim higher for our customers."

Viscosity also comes into play quite often, Kaiser says, and sometimes for the wrong reasons.



COSWORTH WINS RAC DEWAR TROPHY

For the first time since 1969, Cosworth has been awarded the Dewar Trophy by the Royal Automobile Club (RAC) for its design and development of bespoke, low-volume, ultra-high-performance, naturally aspirated internal combustion engines (ICE) that exceed projected global regulatory standards.

The award celebrates Cosworth's recent engine developments, which include:

- The Bugatti Tourbillon V-16 engine that has been hailed as a significant achievement in luxury automotive powertrain engineering.
- The Gordon Murray T.50 engine, developed to deliver an optimal power-to-weight ratio as a key component of anticipated hypercars.
- A partnership with Aston Martin to develop the V-12 Valkyrie engine with its 11,100 rpm redline.
- Cosworth's involvement in the Red Bull RB17 hypercar project.

"We are incredibly proud to receive the Dewar Trophy, a reflection of our dedication to pushing the boundaries of engineering. This award is a testament to the hard work of our talented team and the innovative solutions we are bringing to market. As we continue to evolve and redefine the future of luxury automotive performance, this recognition underscores Cosworth's commitment to delivering technologies that are at the forefront of automotive excellence," says Dr. Florian Kamelger, Cosworth CEO.

As part of the Dewar Trophy celebrations, Bruce Wood, Cosworth managing director, participated in a pre-award seminar and panel discussion titled, "Fossil-fueled motoring may be dead, but is the obituary being written for internal combustion engines prematurely?"

His contribution highlighted Cosworth's belief that, while electric mobility is part of the future road map, there remains a crucial space for high-performance internal combustion engines in niche applications such as hypercars.



Cosworth has been awarded the Dewar Trophy by the Royal Automobile Club (RAC) for its design and development of bespoke internal combustion engines. (Photo courtesy Cosworth)

"Some may think that the SAE viscosity is the most important part of an oil, but it's more important to look at each model's specific requirements and the manufacturer's approval."

Some goods news, Lozano reports, is that quality oils are not necessarily cost-prohibitive.

"Pricing is not everything. Value and performance can be achieved at the same time," he says.

SLICK SALES

Knowledge and communication are the starting points for successful sales of performance oils and fluids.

"Educate your team around oils and the differences in brands and offerings," says Beatty from Red Line Synthetic Oil. "Then talk with your customer on their driving habits, performance changes on the vehicle and what they are looking for in street car drain intervals. Be the expert they need."

LIQUI MOLY's Kaiser also recommends knowing your products and the engine's expected usage.

"Find out what type of racing the customer is planning on doing, what oil temperatures are expected, etc. Don't be afraid of asking questions to sell the right products for the customer's individual needs."

Such attention to detail will help shops develop a reputation as the neighborhood expert, says AMSOIL's Nyholm.





Better materials and more accurate and precise machining processes have allowed newer street engines to be made with tighter clearances. (Photos courtesy VP Racing Fuels)

"Everyone looking to have work done on their vehicle wants to trust the person doing it. Build trust by sharing factual information about their vehicle and how improved performance lubrication speaks to the issues of today's technology. How they operate their vehicle adds to the reasons why improved lubrication performance is important to longevity. With the cost of today's vehicles, lubrication is probably the lowest-cost product they can choose that will provide a significant improvement in wear protection, engine cleanliness and overall longevity of their vehicle."

After discussing options with the customer, VP's Lozano suggests turning to other sources for secondary affirmation.

"Refer to testimonials and known users that have had success with the fluids," he says.

Steinmetz agrees the best way to increase sales of performance oils and fluids is to take the time to explain the unique benefits and technology behind specialized products.

"Offering bundled services like pairing an oil analysis with a recommended performance fluid can also help customers experience firsthand the benefits of premium products," he concludes. ***TS***



PERFORMANCE PRODUCTS

Stock Your Shelves With These Go-Fast Components

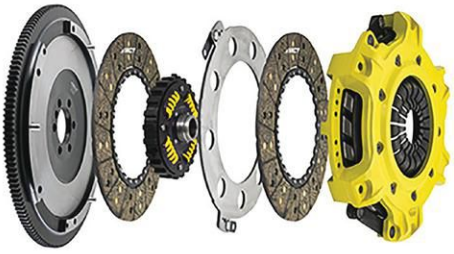


Kia K5 Cat-Back Exhaust

BORLA Performance Industries, Johnson City, Tennessee, presents its Cat-Back Exhaust System for 2021-24 Kia K5 models that improves horsepower and torque. System 140968 delivers the classic S-Type sound without any drone or resonance inside the vehicle. The system is made from T-304 stainless steel with bright chrome on T-304 stainless steel tips. It features all-welded construction for durability and long life.

GM 10.5-Inch Clutch

Advanced Clutch Technology (ACT), Lancaster, California, presents its SFI-approved 10.5-inch Mod-Twin Clutch System for popular LS1, LS2, LS3, LS6 and LS7 applications including Corvette, Camaro, Firebird and GTO models. The ultra-durable, customer-serviceable, long-lasting clutch delivers high torque capacity without the tradeoffs often associated with a twin-disc clutch. A modular hub system provides versatility and customization options.





Universal Tractor Trans-Hydraulic Fluid

Hot Shot's Secret, Mt. Gilead, Ohio, offers premium Universal Trans-Hydraulic Fluid for the agricultural and construction markets. Designed to provide a high level of protection for high-torque, heavily loaded gears, bearings and hydraulic pumps, the fluid is applicable for most ag and construction equipment including tractors, combines, tillage equipment and more. Gold Diamond Select Premium Trans-Hydraulic Fluid is formulated with a proprietary additive package and infused with FR3 Nano Technology to provide improved wear protection.

Ring & Pinion Gears

Nitro Gear & Axle, Denver, a **DPI Off-Road Brand**, presents Nitro Gear Ring and Pinion sets for a variety of applications. Manufactured from 8620 and 9310 steel gear forgings to be tough-yet-quiet on- and off-road, the sets are precision CNC machined and heat-treated to provide an exact fitment. Computer-controlled gear lapping ensures precise contact patterns, ease of installation and a quiet-running setup. New ratios and applications are continually being developed.





Corolla Coil-Over Kit

AST Suspension, Horsham, Pennsylvania, presents its specially developed 5100 Series Adjustable Coil-Over Kit for Toyota GR Corolla performance hatchback models. The competition-ready kit achieves a balanced ride that maximizes grip for performance driving while maintaining appropriate compliance for daily use. It prioritizes adjustability, allowing drivers to independently manage rebound damping and ride height. The kit is a complete replacement for the factory shocks and springs.



Ford Digital Dash

AutoMeter, Sycamore, Illinois, presents its InVision Direct-Fit Digital Dash System, available for 1973-79 Ford truck and 1978-79 Ford Bronco models. The systems monitor the speedometer, tachometer, fuel level, oil pressure, water temperature and volts in one place and feature a 12.3-inch LCD with four user-selectable screens. All kits include a wiring harness and sending units for water temperature and oil pressure. An integrated joystick allows for easy programming.

Performance Coil-Over Springs



Landrum Performance Springs, Mentone, Indiana, presets durable, lightweight Coil-Over Springs. Engineered for applications including circle track racing, drag racing, street performance and off-road, the springs provide consistent high performance throughout a wide range of travel without losing free height. Made in the USA, the springs are manufactured with top-grade high-tensile chrome silicon alloy steel wire. They are available with inner diameters from 1.9 to 3.75 inches, in lengths from 4 to 22 inches, and at rates up to 850 pound-feet.

Transmission Install Tool & Seal Protector





American Powertrain, Cookeville, Tennessee, offers a Transmission Install Tool & Seal Protector created as a practical solution for protecting the transmission seal during shipping of a new **TREMEC** TKX or Magnum transmission. Designed as a multifunction tool that can prevent fluid from escaping during service, the seal protector is splined on the inside and features hand grips, making it easier to install or service any TREMEC transmission.

Power Steering Products



Plews & Edelmann, Dixon, Illinois, presents expanded coverage of its Power Steering Products in both the Edelmann and Edelmann Elite lines. Offerings include 42 power steering hoses with coverage for over 16 million registered vehicles with applications from GM, Ford, Acura and Toyota, including GM crossovers and fleet-oriented Ford Super Duty applications; six power steering hard parts that have been added to the Edelmann Elite line of new racks; pumps; fully synthetic Honda/Acura power steering fluid; and additional electric power steering SKUs.



Tilt Steering Columns

Rad Rides by Troy, Manteno, Illinois, presents its mechanically driven Tilt Steering Columns, designed for five different tilt positions and offering approximately 40 degrees of tilt function. Constructed with 6061 billet aluminum and stainless steel, the columns feature bronze bushings, high-temp ball bearings, stainless steel hardware and a chromoly U-joint.

Lincoln Hardtop Roof Rail Weatherstrips



Steele Rubber Products, Denver, North Carolina, presents its Hardtop Roof Rail Weatherstrips, now available for 1969-71 Lincoln Mark III models. Offered in pairs, the weatherstrips are made from 100% EPDM rubber that delivers UV protection, ensuring longevity and defense against harmful sun rays while providing a snug fit and seal. Fully molded ends over a corrosion-resistant brass metal core ensure durability and a proper seal. The pair fits on the roof of the vehicle and works to seal the side windows when fully raised.



Chevy Pickup Steering Wheel & Horn

Speedway Motors, Lincoln, Nebraska, presents its Steering Wheel and Horn Assembly for 1947-53 Chevrolet pickup applications. A reproduction of the original GM/GMC truck steering wheel with a 15-inch diameter, the system's horn cap features a chrome "Chevrolet" on a grained background. The steering wheel hub offers a 1969-94 GM spline configuration and works with 1969-94 GM or aftermarket-style tilt columns. The steel ring and spokes are fully welded for support with an over-molded plastic body. ***TS***



Ironworks' Business Development Class is designed to help owners handle all aspects of running a shop.

Knowledge Is Power

The Ironworks Business Class teaches shop owners how to succeed.

BY TONY THACKER



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

"We're men in business, not businessmen," proclaimed my old boss and mentor, Pete Chapouris of SO-CAL Speed Shop.

Chapouris was on the money, because so many in the performance aftermarket, and especially on the hot rod end of it, have no formal business training—they got into it because they thought it might be a good use of their skills, might be profitable and might even be fun.

What they didn't acknowledge was the need for accounting, HR or personal and time management skills to enable them to enjoy a successful business. There was no "Hot Rod U"—until now, that is.

JUMPING IN

In 2001, Rodger Lee started Ironworks Speed and Kustom (IS&K) in Bakersfield, California, and 20 years later he's created a curriculum for his Business Development Class.

"I was a mechanic," says Lee. "I got laid off or maybe fired from my job at a tractor repair shop and wondered, 'What next?' I was already renting a 700-square-foot hobby shop and thought, 'Why not go into business for myself?' That was 2001. I knew nothing, had no formal business education, but I was willing to fail—I didn't want to fail, but I had nothing to lose. I soon moved into a slightly larger shop, with a bathroom and an employee, and I did everything I could to keep the doors open, from building lumber racks, painting trailers and working on customer cars—it was a steep learning curve."

Lee was a self-confessed car guy devouring magazines and so-called reality TV shows to learn all he could.

"I was a nobody in a world populated by icons such as Chip Foose and Jesse James, but I had that dream of working on cars—not tractors. I'm 6-foot-6, you can't miss me, but I knew I had to build a standout reputation for top-notch work. I'm always champing at the bit to know how things are done and how to do it better. I make quick decisions, but I strategize everything I do. I analyze the situation and make a decision."

The turning point for IS&K came when Lee decided to rebuild his 1957 Chevy stepside shop truck utilizing a tube chassis featuring his own suspension design and a Kinsler stack-injected LS2.

Debuting in 2009, the understated '57 put IS&K on the map, garnering some 180 pages of magazine ink. It was a finalist for the 2009 Goodguys Truck of the Year. It also won a GM Design award at the SEMA Show and was a Mother's Choice award in 2010.

"The '57 showcased my build skills beyond anything I could imagine—it was a huge learning curve and IS&K began to attract customers with higher standards wanting turnkey builds. I have one customer that I have now built 14 cars for—that's customer retention. Another I have done five or six for, and two other guys are on their third."

This subtle shift in business meant that

more fabrication work needed to be handled in-house rather than outsourced; therefore, he needed more talented fabricators and more equipment including a 3D printer and a CNC plasma table as well as the traditional shop equipment such as an English wheel that Lee built himself in the early days.



Rodger Lee started Ironworks Speed and Kustom (IS&K) in Bakersfield, California, and turned 20 years of experience into a curriculum for his Business Development Class.

FINDING A BETTER WAY

Lee's business approach is decidedly different from most hot rod shop owners I have interacted with, but as he says, he is constantly strategizing and exploring how he can do it better.

It's that process that led to partnering with his friend Troy Gudgel of BBT Fabrications in Mahomet, Illinois, and the creation of the Ironworks Business Class.

"I wrote the curriculum," Lee says, "and then sat on it for a long time because I didn't feel qualified to teach it. But I knew there was a need—I had needed it—but there was nobody out there offering sound business advice. For example, it was eye-opening for me to realize that the quality of a car build in no way reflected the success of the business behind it. Builders can, and often do, turn out a show winner but make no profit."

The course, which lasts two days, costs $3,500.

"I figured if they're not willing to pay, they're not ready to learn," says Lee. "I priced the class so that if only one person showed up, I wouldn't be upset. But in the review part at the end of the class everyone has said that it was worth every penny and more, which surprised and pleased me as I am not that well-spoken and sometimes have problems finishing my sentences."

Classes start with a meet and greet for attendees the night before, followed by two solid days of immersive education that includes everything from an extensive shop tour to a full, in-depth deep dive into the entire shop process.

"We also leave the shop and go out to eat



Knowledge Is Power





Lee felt there was nowhere to turn for sound custom business advice when he started IS&K.

so that everybody gets to ride and talk with different attendees, not just those they sit next to during the class," he explains.

The course starts with discussions of things a shop owner needs to consider early on, something Lee calls "selecting the lane the builder wants to be in—the kind of cars they want to build, the style, the build quality they aspire to, and the skill levels of their employees."

Next is finding customers that fit that chosen lane and then keeping them and the shop owner on track.

"We talk about providing the customer the information they need to understand the build process, why it takes time and, most importantly, that building cars at this level is not a cut-and-dried, cookie-cutter process."

TIME IS MONEY

Time and money are also discussed. For instance, for shop owners, the car build is their business but for the customer it is his or her hobby, so often they are going to want to hang around the shop and talk about their vehicle—it's part of the process.

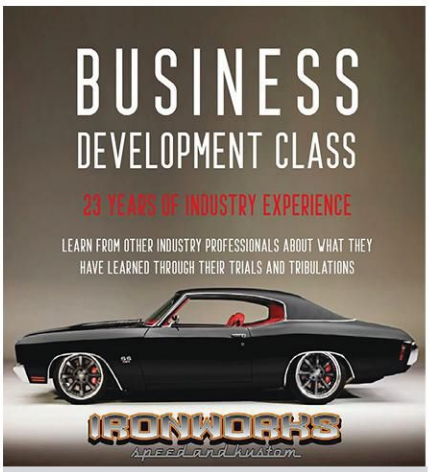
With today's shop rates ranging between $100-$200 per hour, the daily shop bill for one person is obviously $800 to $1,000-plus. At times, a build will get so labor-intensive that the daily bill can easily be $4,000 with five people on the car. Multiply that by five working days and a weekly bill can reach $20,000 or more, and that can go on for weeks.

Customers also forget that toward the end, when they think you are close to finishing, bills for chrome, upholstery and paint stack up prodigiously along with the labor. Therefore, both you as the builder and your customer need to know where the project is going, and the customer needs to be constantly updated through communications and photographs to keep everyone on the same page.

"Remember," Lee says, "the customer is not a car builder. They might have been very successful in their chosen field, but they're not as knowledgeable as you are in the arena of car building. That's why they came to you, and you'll want to meet and/or exceed their expectations with great customer service."

The class also explains the disciplines builders need to adopt to make their shops





Topics include finding your lane, setting customer expectations, pricing, processes and more.

more effective, more efficient and, of course, more profitable.

"Typically, with 10 or more attendees, the course also affords you the opportunity to discuss directly with and learn from other shop owners in a similar situation who might have conquered a problem you are encountering," Lee notes. "Because of this interaction, the course tends to be as much a discussion as it is a directive."

Another hot topic is pricing.

"One of the biggest problems shop owners face is being able to charge what they should. They tend to value their work according to their wallet and bill accordingly, rather than billing according to the customer's wallet."

Students may view the course cost as expensive, Lee admits, "but we think it offers extreme value for the money and all the classes we have held have returned A-plus responses from attendees. I even had one attendee come work for me for a week to pay his tuition, but I'm not encouraging that."

The classes are supported by companies that provide gift certificates, products and reduced buy-ins for attendees including BFGoodrich, Bowler Transmissions, BBT Fabrications, Forgeline Wheels, Jason Killmer of JK Automotive Detailing, Roadster Shop, Verified Fabrication, Vintage Air and Wilwood, affording attendees instant ROI.

Indeed, the industry has taken such note of Lee's business class that he has been approached by trade associations and industry leaders about partnering, but he and Gudgel prefer to keep it in-house, at least for now.

"We enjoy building cars and so, for the time being, that's where our focus remains," Lee says.

The next class is scheduled for late February in Mahomet, Illinois. Visit ironworks-speedandkustom.com/collections/ironworks-business-class. ***TS***



Engine Build p. 46 / Engine Products p. 51

Finishing a Crate Long Block, Part I

We got a head start on this Ford small-block project, which is a little bit out of the ordinary.

BUILD, TEXT AND PHOTOS BY MIKE MAVRIGIAN



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

While my engine build articles routinely feature step-by-step builds from scratch (beginning with a bare block), for this article we depart somewhat from the norm.

This build involves a Ford small-block Windsor platform. Normally, we build engines from scratch, but this was an exception. A customer brought his 1968 Ford Mustang into our shop with a few engine concerns.

The car was originally equipped with a 289-ci engine, but a few years ago he had it rebuilt by another shop, where it was bored/stroked to 331 CID. The owner noted that the engine had developed a bad "ticking" noise and ran a bit rough.

The "tick" was quickly found when we popped the right valve cover. The No. 5 cylinder (front right on a SBF) intake rocker was loose and had an enormous amount of play. There was also evidence of green coolant laying on top of the heads.

To make a long story short, we performed a coolant pressure test and noticed an obvious drop in pressure. We pulled the engine and tore it down, with plans to remedy the issues and rebuild. It turned out that coolant contamination was so bad that the No. 5 intake hydraulic flat tappet lifter had been stuck closed and wiped out both the lifter and cam lobe.

The coolant leak was quickly diagnosed due to a corroded port in the front cover. Again, the plan was to disassemble, recondition any issues and reassemble with a new cam and lifters, bearings and rings. However, when we cleaned and mag-tested the block, we discovered a crack that was open to water. Since the major components (SCAT crank and rods, ICON forged pistons, Harland-Sharp roller rockers) were (luckily) fine, aside from needing a very minor polishing of the crank journals, we simply needed another block.



We recently built a Blueprint Engines long block for a customer with a 1968 Ford Mustang.

We informed the owner that he had three options—we could locate a used and hopefully rebuildable bare block, purchase a new Dart block or purchase a completed long block. Mostly from a standpoint of downtime, he didn't like the idea of facing the likely extended time involved in finding a used block, mag testing for cracks and spending the necessary time involved in machining work.

While using a new block from Dart would

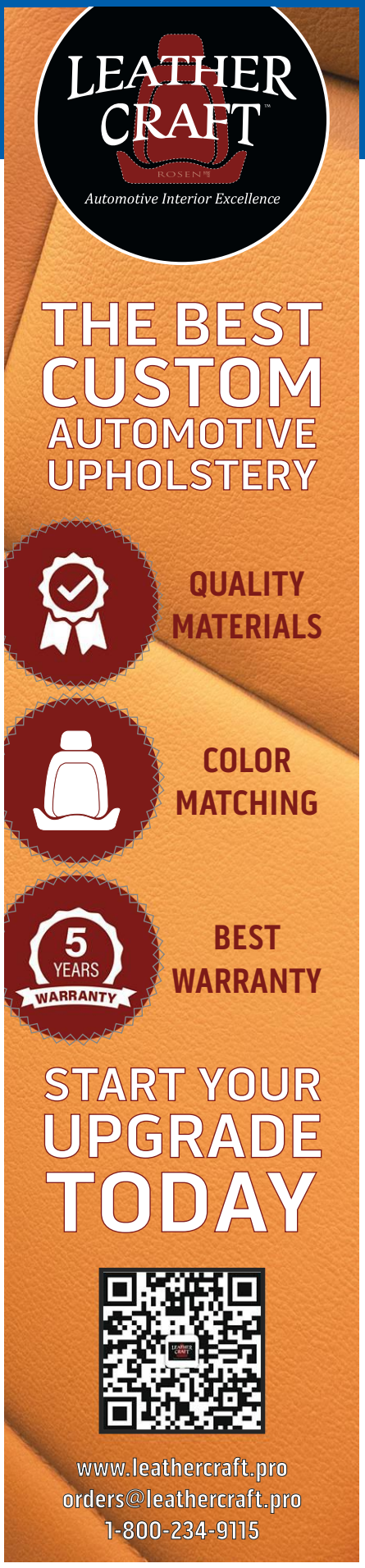


have been an excellent choice in terms of reliability and ease of prep, he balked at the cost of the bare block and the time it would take to obtain the block and perform the necessary final machining and prep.

His final decision, then, was to purchase a long block from Blueprint Engines. This would speed up the job and, besides, the long block included a factory warranty. The owner chose Blueprint's long block assembly BP347CT.

Although touted as a 347 in the literature, doing the simplified math using the 4.00-inch bore and 3.40-inch stroke numbers actually makes this a 341 CID build (bore x bore x stroke x 0.7854 x 8 cylinders). I confirmed this with their tech department and was told that the bores were set at standard 4.000-inch bore, not over-bored. If bored to 4.030 inches with a 3.400-inch stroke, that would make 347 CID.

With displacement at 341, this really



BLUEPRINT ENGINES BUILD SPECS

Block	Increased deck thickness and webbing, improved water jacket design, 1-piece rear main seal, 4-bolt main caps
Bore	4.000”
Stroke	3.400”
Block deck height	8.206”
Piston dome volume	9cc
Rod length	5.400”
Compression	10:01
Cylinder head intake ports	2” high x 1.141” wide
Cylinder head chambers	60cc
Runner volume	190cc intake/60cc exhaust
Manifold ports	1.875” high x 1.095” wide
Head gaskets	0.047” thick, 2.260” high x 1.40: wide
Valves	stainless steel, 2.02 intake/1.60 exhaust
Valve springs	open 295-305 pounds at 1.1225”
Timing chain	double roller
Camshaft	hydraulic roller
Camshaft specs	218 intake duration/226 exhaust duration at 0.050; 0.543” lift intake/ 0.554” lift exhaust; 112 LSA
Head bolt torque	70 pound-feet
Rod bolt torque	45 pound-feet
Main bearing oil clearance	0.001-0.0026”
Rod bearing oil clearance	0.001-0.0026”



The Blueprint Engines long block as delivered.



Upon inspection, the rocker arms are full rollers at 1.6:1 ratio.



The long block is equipped with a steel roller cam, roller lifters and an OE-type lifter hold-down system, with dogbones guiding lifter pairs to prevent lifter rotation.



The front cover features a mounting boss for a crank position sensor. Since we’re not running a crank sensor, and because our water pump is very close to this boss, we machined the boss down to provide clearance for the lower radiator hose connection to the pump neck.

doesn’t matter. While the literature notes horsepower at 415 hp, the provided dyno sheet for this particular long block recorded a healthier-than-expected 430.8 hp at 5,800 rpm and 439.9 pound-feet of torque at 4,100 rpm. For a street-driven ’68 Mustang, that’ll certainly provide the owner with an acceptable level of fun.

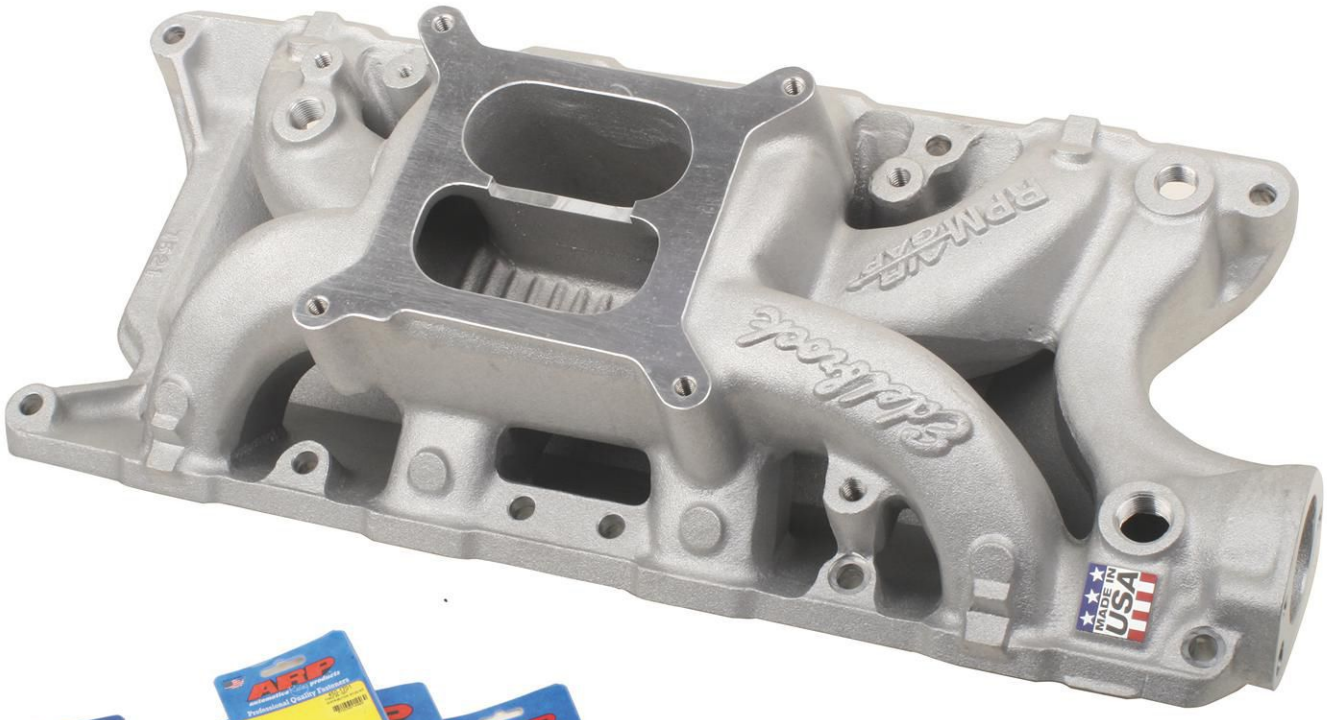
While we would have preferred to build this engine from scratch in-house (to both control all aspects and, to be honest, because we enjoy building), this is the first time we had the opportunity to finish a “crate” long block.

Based on several very positive conversations with select component suppliers and users experienced with Blueprint’s builds, the company seems to have built a very good reputation.

SMALL MODS

Since Blueprint Engines tends to make its engines suitable for a variety of applications, the engines come prepared for common variances in build approach. The front cover on our long block features a mounting boss on the right (passenger side) that allows use of a crank position sensor if needed, (since we’re not running electronic fuel injection, the sensor boss isn’t needed).

Our water pump neck is on the same side.



Our Edelbrock RPM Air-Gap intake manifold.



We always take advantage of top-quality ARP threaded fasteners for all of our builds.

While the pump neck just barely clears this boss, there's no room to mount the lower radiator hose. After carefully masking off the entire engine, we simply removed the portion of the boss to eliminate the issue, using a cut-off wheel, die grinder and mini belt sander.

The alternative would have been to replace the front cover with a cover that does not feature this boss. However, that would involve breaking the gasket seals between the block and cover and cover to oil pan. Since the engine was run on a dyno and it was obvious that no leaks existed, it was simply more sensible and practical to grind off the aluminum boss.

BALANCER

Since this long block features an externally balanced crank, Blueprint specifies the use of a 28-ounce balancer and flywheel. We opted for a balancer from Fluidampr (P/N 650211). This features the required 28-ounce balance weight needed for the Blueprint Engines' externally balanced crankshaft.

The Fluidampr features a laser-welded steel housing, internal inertia ring and high-viscosity silicone fluid between the housing and ring for improved crankshaft vibration control.

The inside diameter of the balancer bore was lightly coated with





Our high-volume Edelbrock aluminum water pump features special internal passages for improved coolant flow and curved impellers to prevent cavitation.



Our Fluidampr balancer features laser engraved, easy-to-read timing marks.

anti-seize and the outside diameter of the balancer's neck was lightly coated with engine oil to avoid distorting the front seal. Using a Moroso balancer installation tool, the Fluidampr was smoothly drawn into place until it bottomed out.

Securing the balancer is an ARP crank bolt/washer. We applied ARP lube to the underside of the bolt head and threads, torquing the bolt to 80 pound-feet. The Fluidampr balancer features an OD of 6.625 inches. Timing marks (50 degrees BTDC to 10 degrees ATDC) are laser etched in white for easy reading.

The only minor glitch we ran into was due to the Fluidampr's slightly larger overall diameter. The original OE damper measured 6-3/8-inches in diameter, which just cleared



Our crank features external balance (28 ounces), including both the harmonic balancer and flywheel.

the bottom of the water pump. With the Edelbrock water pump mocked in place, we noticed a slight interference between the balancer and bottom left (passenger side) of the pump.

This is not a mistake on the part of either manufacturer. Rather, this is likely a simple stack-up of tolerances involving both the pump and the balancer. The fix was easy—we simply relieved a tiny spot from the bottom of the pump's aluminum body to obtain about 0.100-inch clearance. This is a good example of why you should always test-fit components prior to final installation.

PILOT BUSHING

Since the vehicle application is a 1968 Mustang equipped with a Ford 4-speed top-loader transmission, a pilot bushing/bearing was required. We opted for a bronze bushing with an OD of 1.379 inches and ID of 0.670-inch.

The pilot hole in the crank measured 1.372 inches, which provided an interference fit of 0.007-inch. We froze the bushing, which reduced the OD by 0.001-inch. With a light coat of anti-seize to the bushing OD, the bushing was carefully drawn into the crank using a modified steering wheel puller tool (the holes in the tool were simply opened up to accept the 7/16-inch flywheel bolt diameter).

That's a good start. Next time we'll look at the fuel pump, carburetor, water pump and more. ***TS***



Hydraulic Roller Lifter/Guide Assemblies

Elgin Industries, Elgin, Illinois, presents its PRO-STOCK range of performance parts that now includes original equipment-quality Hydraulic Roller Lifter/Guide Assemblies for 2004-newer 5.7L, 6.1L and 6.4L Chrysler Hemi engines without Multiple Displacement System (MDS) cylinder deactivation. They are pre-assembled for fast, accurate drop-in installation.



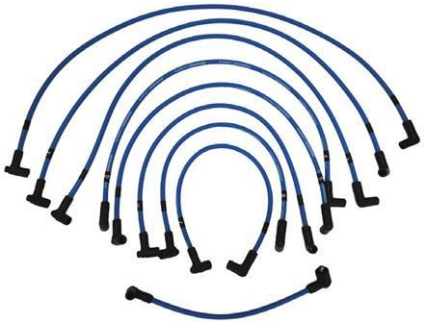
Synthetic Blend Motor Oil

AMSOIL, Superior, Wisconsin, presents its new AMSOIL Synthetic-Blend Motor Oil, designed for lubricant installers and their customers. Available in three viscosities, the oil features greater than 50% synthetic content for all-temperature protection. Formulated with a high dose of detergent and dispersant additives, it resists deposit formation to help keep engines clean and running strong. The oil is available in 0W-20, 5W-20 and 5W-30 viscosities.

Camaro Supercharger Kit



ProCharger, Lenexa, Kansas, presents its 2024 Chevrolet Camaro Supercharger Kit. Shown to add 170-plus hp, the system utilizes a robust billet bracket setup with a dedicated belt drive and patented crank pulley design, securing a 7.65-inch supercharger drive pulley onto the factory harmonic balancer. The crank pulley employs a system of cam locks to securely grip the factory balancer, relieving the crank bolt of any load and ensuring years of worry-free service. Choose from the HO and Stage II systems.



Direct-Fit Ignition Wires

BluePrint Engines, Kearney, Nebraska, presents a new line of 8.6mm Direct Fit Ignition Wires. Designed to enhance performance and simplify installation, the wires are compatible with GM LS, small- and big-block Chevrolet, small-block Ford and small-block Chrysler engines. The performance spark plug wire kits come fully assembled with both the spark plug end and distributor (or coil pack on LS applications) ends pre-terminated and ready for installation. Double silicone jackets offer durability, and the wires are made in the USA.



Cylinder Heads

Air Flow Research (AFR), Valencia, California, presents its new SBC Aluminum Enforcer Flat Tappet Spring Cylinder Heads. The heads come with an as-cast intake, exhaust port and combustion chamber, and are assembled with the same components found in the company's other cylinder head offerings including ARP rocker studs, PAC springs, AFR adjustable guide plates and stainless steel valves. Heads are available in straight or angled spark plug configurations as an upgrade over factory iron cylinder head designs. ***TS***

Intake Manifold



Performance Design, Auburn Hills, Michigan, presents its pTR Intake Manifold for Gen 5 LT1, L83 (with upgraded throttle body) and L86 and L87 engines. Glass-reinforced nylon upper and lower shells combine for strength, weight savings and heat-resistant performance. The manifold includes unique modular velocity stacks enabling 6.5- to 9-inch runners and multiple accessory port and sensor options. Add port injection to supplement or replace the Gen V LT's direct injection with optional billet -8AN fuel rails.

EV ROUNDUP

Recent happenings in the world of electric vehicles.



MERCEDES-BENZ RECYCLING FACTORY CLOSES THE BATTERY LOOP

Mercedes-Benz recently opened what it calls Europe's first battery recycling plant with an integrated mechanical-hydrometallurgical process, making it the first car manufacturer worldwide to close the battery recycling loop with its own in-house facility.

The recycling plant in Kuppenheim, southern Germany, creates a genuine circular economy, according to officials, as Mercedes-Benz strives to significantly reduce the consumption of valuable primary resources.

The expected recovery rate of the mechanical-hydrometallurgical recycling plant is more than 96%, with valuable and scarce raw materials such as lithium, nickel and cobalt being recovered in a way that is suitable for use in new batteries for future all-electric MB vehicles.

"Mercedes-Benz has set itself the goal of building the most desirable cars in a sustainable way. As a pioneer in automotive engineering, Europe's first integrated mechanical-hydrometallurgical battery recycling factory marks a key milestone towards enhancing raw-materials sustainability. Together with our partners from industry and science, we are sending a strong signal of innovative strength for sustainable electric mobility and value creation in Germany and Europe," says Ola Källenius, chairman of the board of management of Mercedes-Benz Group AG.

Mercedes-Benz's technology partner for the battery recycling factory is Primobius, a joint venture between German plant and mechanical engineering company SMS group and Australian process technology developer Neometals.

The plant is receiving funding from the German Federal Ministry for Economic Affairs and Climate Action as part of a scientific research project with three German universities. The project looks at the entire process chain for recycling, including logistics and reintegration concepts.

"The future of the automobile is electric, and batteries are an essential component of this. To produce batteries in a resource-conserving and sustainable way, recycling is also key. The circular economy is a growth engine and, at the same time, an essential building block for achieving our climate targets," says Olaf Scholz, federal chancellor of the Federal Republic of Germany.

Mercedes-Benz opened Europe's first battery recycling plant using an integrated mechanical-hydrometallurgical process to close the battery loop. (Photo courtesy Business Wire)

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US DELIVERIES OF POLESTAR 3 SUVs BEGIN



Polestar 3 SUVs, designed for the North American market, are now being delivered to U.S. dealerships. (Photo courtesy Business Wire)

Polestar, the Swedish premium electric performance car brand, has delivered its first U.S.-built Polestar 3 SUVs to customers in the North American market.

Manufactured in the company's South Carolina plant, the vehicles play an important role in the brand's continued development, as Polestar moves from a one- to a three-car brand with Polestar 2, Polestar 3 and Polestar 4, company officials state.

"From our retail partners to our employees, I'm extremely proud and excited for the delivery of U.S.-built Polestar 3's making their way to customers," says Anders Gustafsson, head of Polestar North America. "Polestar 3 plays a pivotal role in our brand's expanding lineup as an SUV designed for the North American market, proudly assembled in South Carolina, and now being handed over to North American customers."

Also, deliveries in Canada occurred in Montreal, Toronto and Vancouver, which make up over 90% of the country's EV market.

RIVIAN, VW PARTNER ON EVs

Rivian Automotive and Volkswagen Group recently entered into a transaction agreement to create a new joint venture called Rivian and VW Group Technology LLC, known as Rivian and Volkswagen Group Technologies, to help set the direction of their electric vehicle (EV) offerings.

With a total deal size of up to $5.8 billion, the companies plan to bring next-generation electrical architecture and best-in-class software technology for both companies' future electric vehicles, covering all relevant vehicle segments including subcompact cars, the new group states in a press release.

Officials say Rivian's software and electrical hardware technology complement Volkswagen Group's significant global scale and vehicle platform competencies.

"The partnership with Rivian is the next logical step in our software strategy. With its implementation, we will strengthen our global competitive and technological position," says Oliver Blume, CEO of Volkswagen Group. "The launch of the joint venture demonstrates the potential we want to leverage together in the coming years. We have a clear plan to offer our customers the best products and digital experiences at attractive prices through state-of-the-art development processes, innovative technological approaches and a competitive cost base."



From left, Oliver Blume, CEO Volkswagen Group; Carsten Helbing, designated future co-CEO of the joint venture; Wassym Bensaid, co-CEO of the joint venture; and RJ Scaringe, founder and CEO of Rivian. (Photo courtesy Volkswagen Group)

The JV will aim to use the existing Rivian electrical architecture and software technology stack, enabling the launch of Rivian's R2 in the first half of 2026 and support the expected launch of the first models from the Volkswagen Group as early as 2027, officials note.

"Today's finalization of our joint venture with Volkswagen Group marks an important step forward in helping transition the world to electric vehicles. We're thrilled to see our technology being integrated in vehicles outside of Rivian, and we're excited for the future," says RJ Scaringe, Rivian founder and CEO. "Rivian will continue to stay focused on creating best-in-class products and services that benefit our customers, helping to drive EV adoption." ***TS***

AFTERMARKET ALLEY





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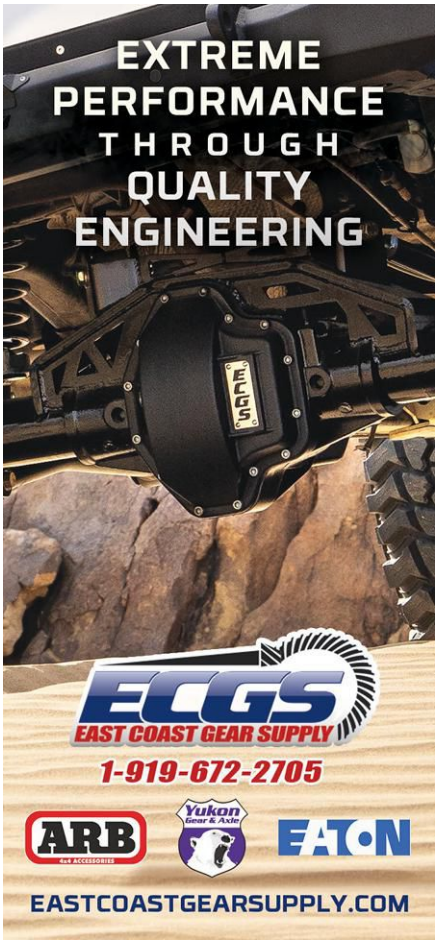
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Vintage Slot Cars Find Their Groove

You may remember slot car tracks from your youth—but not quite like this.

Following the success of its previous Porsche 917 art car build, Slot Mods Raceways has joined forces with Tony Lauro's Hot Shoe Studios to unveil a collection of limited edition 1:2 scale art cars paying homage to the legendary Porsche 917K and Ferrari P4 Le Mans race cars.

"The collaboration between Slot Mods and Tony Lauro's Hot Shoe Studios brings together two powerhouses in the automotive art world," company officials state. "Slot Mods' expertise in creating custom, high-quality slot car raceways meets the artistic vision of Tony Lauro, a master at capturing the essence of classic racing eras through his unique creations."

The standalone centerpieces house a vintage slot car raceway inside.

"Our tracks are a fusion of art, engineering and history," says David Beattie, Slot Mods USA founder and creative director. "Our goal is to infuse each art car with our signature style and passion for classic racing aesthetics. The result is a stunning blend of craftsmanship and artistry that will resonate with fans of vintage racing, automotive design and art."

Slot car and historical racing enthusiasts can choose from the iconic Gulf No. 20, Martini and Salzburg liveries for the 917K and have the choice of either a clean or race-weathered version for $85,000.

Each art car is handcrafted with composite body panels and features a handpainted exterior shell, constructed on a handcrafted tubular chassis. The vehicles have center-lock wheels, race-worn tires, and working headlights and taillights.

Inside the clamshell hinged body is a crafted 1:43 scale wooden raceway, boasting period-correct features such as signs, banners, aluminum Armco railing, trees and structures transporting enthusiasts back to a bygone era of racing heritage.

"Slot Mods Raceways invites fans and aficionados to experience the thrill of Le Mans racing in a whole new way with these exceptional limited edition interactive works of art," the company notes.

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Slot Mods Raceways has joined forces with Tony Lauro's Hot Shoe Studios to unveil a collection of limited-edition 1:2 scale art cars paying homage to the legendary Porsche 917K and Ferrari P4 Le Mans race cars. (Photos courtesy Slot Mods Raceways)







Inside the clamshell hinged body is a crafted 1:43 scale wooden raceway, boasting period-correct features. (Photo courtesy Slot Mods Raceways)



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