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# CONTENTS

MAY 2022 | VOLUME 37, NUMBER 5

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**From the President..... 8**  
This month marks the grand opening of our new Membership headquarters in Speedway, Indiana, a clear indication to you, the racing community, that PRI is all in on helping us grow our industry together.

**From the Editor..... 10**  
Motorsports businesses are discovering big profit potential in the defense sector, while decisive action over the last year has lasting effects, and the RPM Act remains priority #1.

**Lead Position..... 12**  
Nitrous oxide provides some of the most accessible and affordable horsepower on the market, but bad habits and/or misinformation can quickly derail even the most promising engine program.

## COLUMNS

**Ask the Experts ..... 14**  
Partnering with the military can be complex, but the right approach could help your company earn a portion of the \$345 billion in government contracts devoted to small businesses.

**Stop Doing That...Do This Instead ...16**  
Adjustable shocks allow for fine-tuning to achieve that perfect suspension balance. But an incorrect tune can lead to frustration and a back-of-the-pack finish.

**Make the Case..... 18**  
While used components can provide budget-conscious racers with a way to affordably elevate their programs, some resellers maintain that new parts are the only way to go.

**Editors' Choice .....20**  
Introducing our top product picks for the month of May, including a new intake manifold, voltage boosters, an overdrive, turbochargers, an engine control unit, and more.

**Newly Appointed ..... 24**  
New Jersey Motorsports Park's Mike Murphy combines his experience in series management, strategic marketing, and competition with a deep passion for racing in his new role as director of track operations.

**Industry Insights..... 26**  
As EV drag racing achieves increasing levels of acceptance, Texas-based metals engineer and pioneer of the movement John Metric discusses why this segment is so appealing, as well as the obstacles that still must be overcome before electric drags can fully enter the mainstream.

## DEPARTMENTS

Industry News .....	106
Race Shop.....	112
Manufacturers Reps .....	115
Advertisers Index .....	117
Social Status.....	118



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# CONTENTS

MAY 2022 | VOLUME 37, NUMBER 5

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50



84

## FEATURES

### Special Report: Best Business Decisions..... 36

Resolute action can deliver big results, and PRI's annual Motorsports Retail Business Survey uncovered the pivotal moves that paid off for 11 resourceful entrepreneurs.

### How the RPM Act Can Become Law..... 46

Protecting the right to modify cars involves complex legislative persuasion, and advocates are confident that with ongoing lawmaker contact from PRI and SEMA members, this critical bill will ultimately pass.

## OPEN WHEEL COVERAGE

### Walking the Line ..... 50

With racing that straddles the local scene and top-league national series, regional sprint car and midget sanctions thrive by offering racers a unique, best-of-both-worlds experience. But it's not always an easy ride for organizers.

### Initiating Launch Sequence..... 58

New midget and sprint car series are taking flight in the Midwest. Here's a closer look at how sanctioning body officials are working to ensure their short- and long-term success.

### Business Profile ..... 64

Packing a blend of innovative engineering with first-class customer support and a bold drive to "push to the very edge," Pennsylvania-based Hyper Racing is helping carry the 600cc micro sprint class to new heights.

### Science Friction ..... 74

High-performance fluid and lubricant manufacturers are expanding the envelope to develop specialized products for targeted applications, all while helping release untapped horsepower.

### Spray Plan ..... 84

Experts provide insight into some of the most common mistakes engine builders and racers make with their nitrous combinations, along with best practices that can help avoid major headaches down the road.

### Turn-By-Turn Connections ..... 90

Playing a critical role in the success of any race car, driveline technology is under constant development, with incremental improvements steadily adding up to produce spectacular results.

## PRI MEMBERSHIP

### Member Check-in..... 98

Understanding that entering a motorsports event can be intimidating for the uninitiated, Disorganized Grime promotes an inclusive environment aimed at helping racers unwind, make friends, and swap ideas.

### PRI Education ..... 100

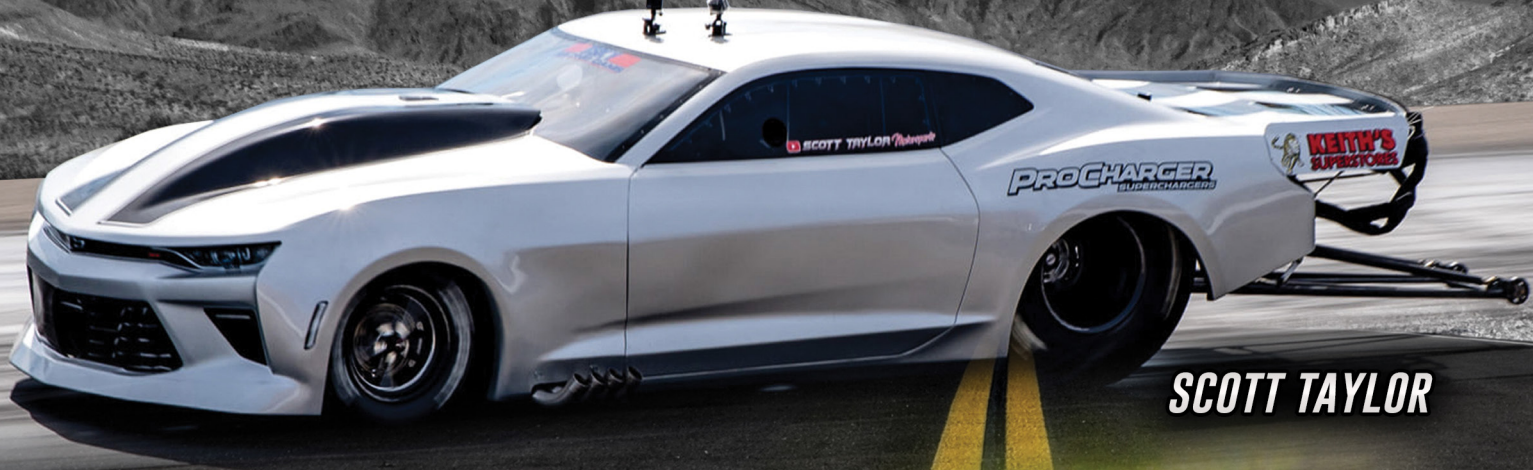
Getting the measurements correct is vital to steering column installation, and the team at IDIDIT walks us through proper setup procedures to help maximize driver comfort and safety.

### Advocacy Corner ..... 102

Developments include the grand opening of PRI's new Membership headquarters and how it will serve motorsports businesses, track operators, and more; the addition of key RPM Act supporters in Congress; a federal lawmaker's recent visit and tour of Summit Racing Equipment in Texas; and a recap of West Virginia's first-ever 'Motorsports Day' and associated activities.





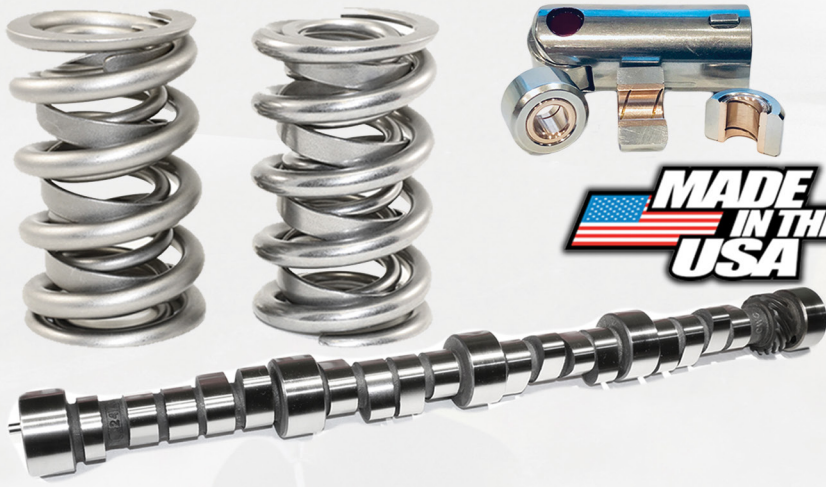


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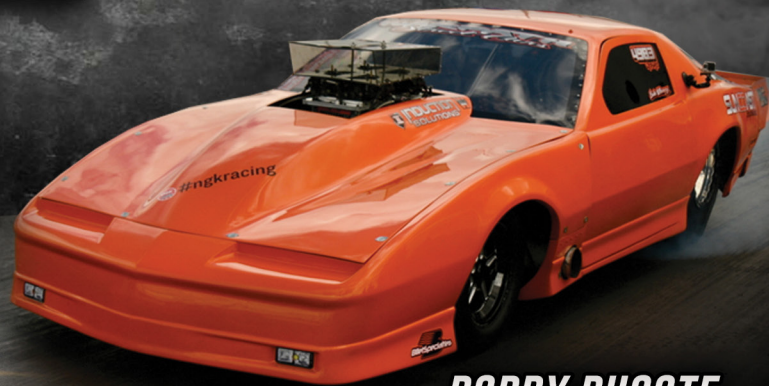
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# FROM THE PRESIDENT

## PRI MEMBERSHIP HQ OPENS FOR BUSINESS

May 26, 2022, will mark a historic day for the racing industry with the grand opening of the new PRI Membership headquarters. Our new HQ is located in the Indianapolis suburb of Speedway. Yes, the facility is located on Main Street, Speedway, USA. How cool is that?!

I so badly wanted to share this news with you during the Grand Opening Breakfast at the 2021 PRI Trade Show in December, but the deal hadn't quite come together at that point. As it turned out, we closed on the 42,500-square-foot facility at the end of 2021, and we immediately went to work making it our own.

This new building delivers on a promise that James Lawrence and the SEMA Board of Directors have made to the racing industry. Sworn to build, promote, and protect our industry, past SEMA Board Chairman Wade Kawasaki first pushed for the "PRI Initiative" over three years ago, and it's been a team effort ever since to make all these changes happen. And we are just getting started! So, what does it mean to you? Glad you asked.

## WHAT IT MEANS FOR THE RACING INDUSTRY

The racing industry is life to all of us. It's more than a job, or a career, or a family business. It's what drives us to get up and push ourselves to incredible levels every day. That passion is what makes these bold moves by PRI so important. We have been asked to do more for you—a better Show,

a better media company, more educational programs, and more business opportunities.

This building is a clear indication to you, the racer, that PRI is here to stay for a long, long time. Located in the heart of the racing industry, within a few hours' drive of hundreds of thousands of racers and race businesses, the new PRI HQ will help all of us grow our industry together. Our new Indy HQ will allow us to bring the industry together every day of the week—not just for those three special days in December.

We are already working on monthly programs, educational classes, and meetings with key leaders in our industry. Above all, PRI will focus on growing our business and individual Membership programs. Together, united under the PRI brand, we will have a collective voice to not only protect racing, but to grow the racing industry for years to come.

## WHAT IT MEANS FOR PRI MEMBERS

We are very grateful for the incredible start to our PRI Membership program. Less than a year old, we already have close to 500 business members and over 35,000 individual members. This unity will allow us to build an incredible benefits suite for you, serving you throughout your racing career as well as helping you build your racing industry business quickly and profitably.

Above all, we realize more and more how important it is to unite the racing industry in order to protect our interests against governmental overreach and legislation that will negatively impact you. Our new HQ will allow us to focus on protecting you non-stop



**DR. JAMIE MEYER**  
jamiem@performanceracing.com

by growing our numbers and improving the proficiency with which we're able to voice your concerns. Soon you will read and hear all about the talented Membership team we are building at PRI. More skilled marketing, benefits, and customer care experts will be joining us soon. And with that, we will offer more services for PRI Members.

## HOW YOU CAN GET INVOLVED

We want you involved with PRI. Once we're past the PRI Membership HQ grand opening, we will immediately open this facility to our Members. With that, we are looking to you for suggestions on how you can help us grow our Membership. If you have a race in the Indy area, let's talk about PRI hosting it for you. Maybe you'd like to participate in our monthly "Race Cars & Coffee" events. Or maybe you'd just like to take a tour and discuss the race cars on display in our atrium. Shoot a note to our superstar Membership Sales Manager Julie Freier (JulieF@performanceracing.com) and she'll take good care of you.

PRI is coming to Indy. Those words mean more to you now than ever before. We'll see you soon! **PRI**

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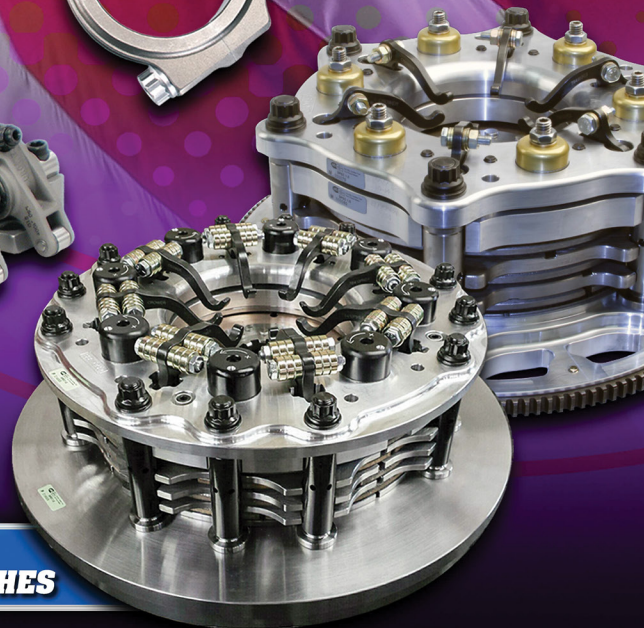
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# FROM THE EDITOR

Three things I think prior to this month's grand opening of PRI Membership headquarters in Speedway, Indiana:

**1) I THINK WRITER DREW HARDIN'S** report on how motorsports companies are supplying parts and services to the US military will open some eyes to a potentially lucrative new revenue stream. For this month's Ask the Experts piece, Hardin spoke with manufacturers TW Metals and Calico Coatings—as well as a representative from the US Army DEVCOM Ground Vehicle Systems Center—to offer a closer look at the opportunities available to racing and performance industry members. The numbers alone are pretty staggering: According to our source at TW, the government is required to spend nearly \$350 billion a year on small business contracts, with defense agencies accounting for a sizable portion of that bank. And though there certainly are more hoops to jump through when dealing with the military versus your typical supply partner, the potential rewards could be exceptionally worthwhile, as you'll discover in Hardin's story beginning on page 14.

**2) I THINK ADVERSITY CAN BRING OUT** the very best in people, and this month's Special Report on motorsports retailers' top business decisions of the last 12 months proves that theory. In our piece, which begins on page 36, writers Steve Statham and Jim Koscs interviewed 11 entrepreneurs—including speed shop owners, engine builders, fabricators, performance tuners, and others—to learn more about those great ideas that helped them weather the economic tumult of the last two-plus years. One Colorado-based karting specialist re-examined his approach to staffing, which “helped me identify where help was most needed and start to put systems in place to make things more efficient and actionable.” Another—a parts supplier out of Wisconsin—built a new car in a class that was underserved in order to better grasp and ultimately service



**DAN SCHECHNER**  
dans@performanceracing.com

the market. Other insights touch on time management, inventory controls, social networking, travel decisions, and more. Give it a read, and feel free to share your own best business decisions with us at [editorial@performanceracing.com](mailto:editorial@performanceracing.com).

**3) WHILE WE'VE WRITTEN EXTENSIVELY** on the Recognizing the Protection of Motorsports (RPM) Act through the years and its importance to the racing community, I think our coverage in this month's issue spells out in some of the clearest language yet the steps required to push this vital legislation through the halls of Congress and onto the President's desk for approval. It's an extremely bipartisan bill, as more than 120 members of the House, from both parties, have already signed on as co-sponsors; Democrats and Republicans are represented on the Senate version, too. But what's evident in writer Jim Donnelly's report, which begins on page 46, is that our work is far from done. And as PRI's Director of Congressional Affairs Eric Snyder points out, “Ultimately, this is about education, lawmakers understanding how race tracks positively impact communities in their districts, and the people that they represent.” For more information on how you can help support the RPM Act, visit [saveourracecars.com](http://saveourracecars.com). **PRI**

# PRI

## MAGAZINE

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Dan Schechner

**MANAGING EDITOR**  
Meredith Kaplan Burns

**SENIOR EDITOR / SOCIAL MEDIA**

**MANAGER-EDITORIAL**  
Christen D'Alessandro

**ASSOCIATE EDITOR**  
Laura Pitts

**CONTRIBUTORS**

David Bellm, Jim Donnelly, Drew Hardin, Bradley Iger, John F. Katz, Jim Koscs, Mike Magda, Steve Statham, Kelly Tuttle, Jeff Zurschmeide

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Paul Graff

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John Cabral  
Jeffrey Chhan

**PHOTOGRAPHERS**

Michael Allio, Stephanie Davies Bardekoff, Perry Bennett, Randi Besse, Meredith Kaplan Burns, Driveline Studios, Josh James, John C. Meloling, Memories Captured, Dan Schechner

**ACCOUNTING**

**PAYABLES**  
Lily Huang

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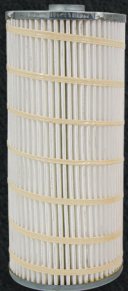


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## LEAD POSITION

Think you—or your customers—know everything there is to know about working with nitrous oxide? According to some of today's top suppliers, even longtime users can be tripped up by bad habits or shoddy advice. "It's the easiest way to get horsepower, but there's a lot of bad information floating around out there," noted Ernie Wrenn of Compucar Nitrous Systems, who helped clear the air for this month's feature article on the do's and don'ts of nitrous combinations in racing applications. From setup and tuning to maintenance and troubleshooting, our sources pinpoint some of the most common pressure points and, more importantly, how to address them so that, as writer Bradley Iger phrased it, "an engine lives to spray another day." See our full coverage beginning on page 84.



# ASK THE EXPERTS

## SUPPLYING THE MILITARY

Partnering with defense agencies can be complex, but the right approach could help your company earn a portion of the \$345 billion in government contracts devoted to small businesses.

By Drew Hardin

The numbers are compelling: “The government will spend \$1.5 trillion this year, and by law, it’s mandated that 23% of that has to be spent with small business,” said Bob Mraz of TW Metals, Exton, Pennsylvania. That 23% works out to roughly \$345 billion. And motorsports companies could be earning a portion of those government contracts.

Some already are. Security sensitivities and non-disclosure agreements make it difficult to get details in many cases, but businesses in the racing and performance industry, including several large race teams, have robust government and military contracts.

TW Metals, for example, is a “metals prime vendor,” Mraz said, “one of only two in the world. We supply more than 300 agencies, including the Army Corps of Engineers, Navy, Air Force, and Marines, with the materials they need for maintenance, repair, and overhaul.”

“A lot of motorsports groups are now supplying parts to the military and aerospace,” added David Adams of Calico Coatings, Denver, North Carolina. “In fact, some of the largest teams are heavily involved with them. They have machining centers stilling idle, so engaging these industries has been an excellent way for them to fill the void in production.”

According to Calico Coatings’ website, among the services it provides to the military are coatings for ejection seat parts in Air Force T-38 fighter jet trainers.

Mraz believes that “almost anything the PRI constituents do, whether it’s building chassis, doing heat-treating,

repairing engines, refurbishing clutches, the government wants it. They are constantly searching for businesses to spend money with.”

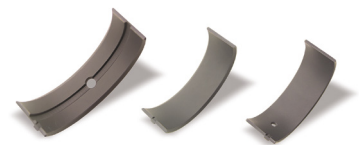
Those who attended the 2021 PRI Trade Show may have seen some of that outreach in a seminar, “Army Ground Systems: Overview & How to Do Them,” put on by Thomas Vern of the US Army DEVCOM Ground Vehicle Systems Center (GVSC) in Warren, Michigan. “We figured there’d be some fertile ground there,” said Vern, whose introduction to PRI came through David Miller of the North Carolina Motorsports Association. “We do want to engage that industry a little more, to see if we can start generating some momentum.”

### SPECIFIC REQUIREMENTS

Building a relationship with the military does have its challenges. “Dealing with the defense industry is completely different from general industries,” said Adams. “It requires a lot of research because they don’t advertise or promote themselves like most companies. You’re going to go through a lot of websites and a little detective work before successfully



Our source at Calico Coatings, whose engine bearing coatings are shown here, told us that defense agencies are “constantly searching for businesses to spend money with.... Whether it’s building chassis, doing heat-treating, repairing engines, refurbishing clutches—the government wants it.”



reaching the right company and the right contact.”

“It can be a tough space,” Vern admitted. “We speak our own language. We have very rigid contract mechanisms. This is not doing business on a handshake deal. It is very different from a lot of work that small businesses do.”

The key to successfully doing business with the military, Mraz said, “is to be visible and available.” And the first step in being visible to the government is to register for a Commercial and Government Entity (CAGE) code, which can be done at [sam.gov](http://sam.gov) or through the Defense Logistics Agency’s CAGE Program Office ([cage.dla.mil](http://cage.dla.mil)).

“When registering, there are hundreds of classifications,” Mraz said. “Pick the ones you’re interested in and the ones you think explain who your company is to the tens of thousands of government buyers all over the world.” Registering that CAGE code with the Small Business Administration “can greatly mathematically increase [your] chances of seeing opportunities and winning opportunities,” he added. “Now you’re in the game.”

Before a company starts the search for potential opportunities, “it should understand that we’re a very large organization,” Vern

As one of only two “metals prime vendors” in the world, TW Metals supplies more than 300 agencies—including the US Navy, Air Force, and Marines—with different maintenance, repair and overhaul materials.



said. “When talking about the Department of Defense, they would potentially be doing business with all of the services—Army, Navy, Marines, Air Force, Coast Guard, and even Space Force.”

While each branch is different, “we do have some common structures,” Vern noted. Those include science and technology organizations, “which are looking at how to develop new capabilities for our warfighters.” Acquisition organizations “work to procure and upgrade existing equipment such as the JLTV [Joint Light Tactical Vehicle]. Most of the acquisition contracts are going to flow through very large contractors, such as Oshkosh Corporation or General Dynamics Land Systems. Small businesses can partner with those large companies primarily through their own acquisition organizations and their own purchasing arms.” A third group, sustainment organizations, “are focused on sustaining existing equipment, such as a Humvee. Those contracts are often small and typically have a mandate to work with small businesses to the extent that they can. TACOM [US Army Tank-Automotive &



Motorsports suppliers interested in starting a relationship with the military should understand that “we’re a very large organization,” noted our contact with the U.S. Army DEVCOM Ground Vehicle Systems Center (GVSC). “When talking about the Department of Defense, they would potentially be doing business with all of the services—Army, Navy, Marines, Air Force, Coast Guard, and even Space Force.” Photo courtesy of Randl Besse, Rock Island Arsenal.

Armaments Command] has a small business office to help with onboarding and help succeed in the spare parts contract world.”

(Per its website, TACOM “manages the Army’s ground equipment supply chain, which constitutes about 60% of the Army’s total equipment. If a soldier drives it, shoots it, wears it, or eats it, we sustain it.”)

## KEY STRATEGIES

Two key strategies can help a company navigate this sometimes-confusing system, Vern said. One is to attend Industry Day events, “which are held at least once a year by most of the major organizations. We use these events to communicate our needs and opportunities to contract. This will show a company where we’re spending money, and it provides a chance for new industry partners to introduce themselves.” (GVSC held its most recent Industry Days April 18–20 in Warren, Michigan, with the option to attend in-person or virtually.)

Vern’s other recommendation is for a company to “find partners they can work with as they join the defense contracting ecosystem. Teams are usually more successful. Government contracting can become second nature, as obviously many companies get good at working with the government. However, it is very different,

and a partner can help a newcomer learn.” Industry Day events are a good place to network with potential partners, he said, as are similar events put on by state governments, such as Michigan’s Defense Exposition (MDEX).

“Almost every state has an office to help businesses join the Department of Defense supply business,” he added.

One takeaway Vern had from the PRI Show was that “the capabilities I saw on display fit more broadly than just ground vehicles. In fact, they may not fit ground vehicles particularly well at all. We tend to be heavy and have a lot of high-load components. The lightest vehicle is the Humvee, which is more than two tons. A lot of our components tend to be bigger and heavier than what the racing industry is used to.”

Instead, motorsports companies may want to consider opportunities working with “robotic vehicles, which tend to be lighter, or the unmanned air vehicles (UAVs) and support equipment for the UAVs, or watercraft and undersea remote vehicles. And just general aerospace, especially aerospace ground support equipment. Those are all significant components of the industry that they may match up to that have nothing to do with wheels or tires.”

In that regard, Vern encouraged racing and performance businesses to “back up and look at what expertise they really bring, what they’re good at outside of wheeled vehicles. They might find a better match in a different space that gives them some different work to do.” **PRI**

## SOURCES

**Calico Coatings**  
calicocoatings.com

**TW Metals**  
twmetals.com

**United States Army Combat Capabilities Development Command-Ground Vehicle Systems Center**  
usarmygvsc.com

## RESOURCES FOR MILITARY OPPORTUNITIES

- US Army Ground Vehicle System Center: [usarmygvsc.com](http://usarmygvsc.com)
- US Army Aviation & Missile Center: [avmc.army.mil/Doing-Business-with-US/](http://avmc.army.mil/Doing-Business-with-US/)
- US Army Tank-Automotive & Armaments Command: [tacom.army.mil/osbp](http://tacom.army.mil/osbp)
- Official US Government Contract Opportunities: [sam.gov/content/home](http://sam.gov/content/home)

## OTHER TRANSACTIONAL AGREEMENT CONSORTIUMS

- National Advanced Mobility Consortium (NAMC): [namconsortium.org/](http://namconsortium.org/)
- Defense Automotive Technologies Consortium (DATC): [datc.sae-itc.com/](http://datc.sae-itc.com/)
- Small Business Innovation Research: [sbir.gov](http://sbir.gov)



# STOP DOING THAT...DO THIS INSTEAD

## SETTING ADJUSTABLE SHOCKS

These components allow for fine-tuning to achieve that perfect suspension balance. But an incorrect tune can lead to frustration and a back-of-the-pack finish.

By Jim Donnelly



Suspension experts consistently stress the importance of having a baseline shock setting, and to fine-tune adjustments in basic, definable steps. "Simply guessing is not a tuning strategy," said our source at QA1.

not a tuning strategy," Smith emphasized. "Ideally, we make adjustments based on video, in slow motion, like a car leaving the line at a drag strip. It's very hard to remember the split second when the car left from the driver's seat."

Another common mistake heard on technical support lines goes like this: "My buddy's car has compression set at this, and rebound set at that, and he's doing great, and I'm not." Trying to mimic another car's settings without knowing its ride height, weight distribution, and many other variables on a completely different car is, basically, guesswork.

Shocks also won't correct a setup mistake involving a different component. In oval track racing, teams will typically run a differently valved shock at each corner. To get them to work in concert, "use the data you have, from your car," Smith said, not somebody else's. And don't just rely on the "bumper test," as it's popularly called, to determine if things are going properly.

Penske Racing Shocks in Reading, Pennsylvania, offers not just a wide array of shocks for applications ranging from Formula 1 to local racing, but also dynos and testing equipment. Aaron Lambert said, "I like to tell customers that even though it's an adjustable shock, you never want to run it full stiff. If you go stiffer and it feels better, that's a good

Depending on the brand and model, an adjustable shock absorber offers multiple settings to twist and click into place. That means a racer has multiple opportunities to dial in the shock right, or right out of contention, and still have three wheels left to set up. Adjustable shocks are a crucial element of race car tuning, which means that disciplined, evidence-based scrutiny is absolutely essential when choosing the settings. Forgetting about old shocks is part of that process.

"Probably the first thing we run into when a customer's putting new shocks on the car is that they tend to want to measure their old shocks with the compressed and extended lengths, and give us those measurements, which is not the way we choose shocks," said Steve Smith of QA1, Lakeville, Minnesota. "We choose shocks based on the length of the shock at the desired ride height. They may have chosen a ride height that only gives them a limited amount of

travel between fully bottomed out and fully topped out, which is likely causing the harsh ride they're experiencing."

Another issue arises when racers try to save money by buying cheaper shocks, which Smith said usually means fewer adjustment options. To properly dial in a race car, a racer needs the maximum amount of adjustability, which means selecting a double-adjustable shock, tunable on both the compression and rebound sides.

In all cases, the experts we interviewed stressed that it's important to have a baseline shock setting—often defined in the setup sheets that come with the component—and to fine-tune adjustments in basic, definable steps. "Simply guessing is



thing, but take it a step further and have the shock dyno'd."

One common problem the team at Penske spots in pit areas is me-tooism. "In dirt racing, there's a lot of chatter in the pits about what spring loads or shock build you should run. We see a lot of drivers and teams try to tune the car around that," Lambert explained. "Also, a lot of dirt racers run bump stops because they don't have the equipment to test their shocks. They think they're one click off when, in reality, they're 20 clicks off. It's a whole-of-team, whole-of-car approach, and it has to be done at each corner. The better teams stay in their lane and focus on what they're doing."

Jeff Ryan of JRi Shocks in Mooresville, North Carolina, noted his firm's broad selection of shock and adjustment options. "We try to make it as easy as possible with the instruction sheet. The biggest mistake is people losing track of where they set the shock at, and we always have a datum point



The team at Penske Racing Shocks often must redirect racers who put too much weight behind what their competitors may be running. "In dirt racing, there's a lot of chatter in the pits about what spring loads or shock build you should run," our contact explained. "We see a lot of drivers and teams try to tune the car around that."

that starts from zero, which is usually a full-firm or full-soft setting. Very often, even at a very high level, we see people turning the knobs the wrong way, thinking they're stiffening it when they're really loosening it. Then they start chasing their anti-roll bar positions, going in circles. Always record what you put down. We don't put in too many adjustment tips, because in all the years I've been doing this, I still know that every driver's different." **PRI**

## SOURCES

### JRi Shocks

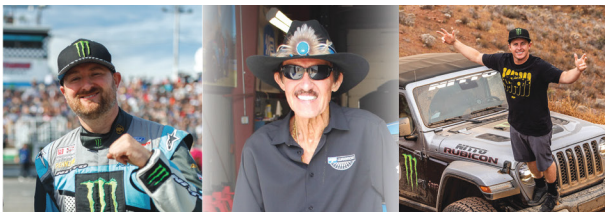
jrishocks.com

### Penske Racing Shocks

penskeshocks.com

### QA1

qa1.net



## Choice of Champions



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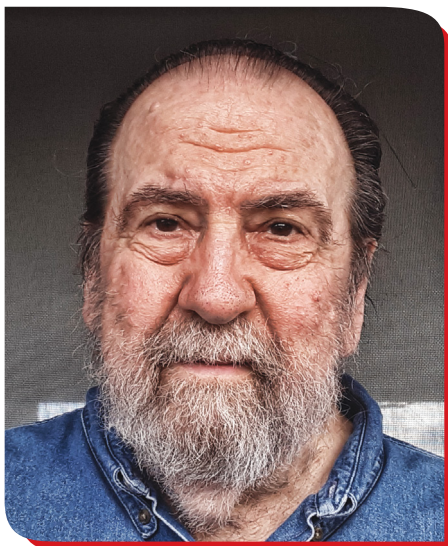


# MAKE THE CASE

## SELLING USED PARTS VS. NEW PARTS ONLY

Although the inherent rigors of motorsports use can bring the reliability of some parts into question, resellers that offer used racing components can provide budget-conscious racers with a way to affordably elevate their programs. That accessibility can prove to be crucial to a team's success, but it also comes with other notable considerations that don't apply when buying new components.

By Bradley Iger



### USED PARTS ADVOCATE:

Dean Moore,  
Kansas Speed  
& Performance

*"IF THEY DIDN'T HAVE THE OPPORTUNITIES THAT THESE LESS EXPENSIVE PARTS PROVIDE, THEY MIGHT NOT HAVE A WAY TO EFFECTIVELY ELEVATE THEIR PROGRAM."*

For us it's about keeping racers connected with parts that are still usable. Not every component that gets taken off of a race car is broken or damaged. It's pretty common for racers to change out parts simply to keep things fresh.

I can remember back in the 1960s when people would scour the junkyards looking for parts to use for their race cars. We just didn't have the marketplace and the technology that we do today. Many folks at the grassroots and sportsman levels don't have a whole lot of money to spend on their racing efforts, so we look at it as an opportunity for them to improve their competitiveness and potentially open the door to even greater things. If they didn't have the opportunities that these less expensive parts provide, they might not have a way to effectively elevate their program.

We scrutinize what we get, naturally. We're not interested in passing along junk to somebody. To me, the marketplace is about integrity. If you have that, people quickly begin to understand that you're offering a part that they can trust to do the job. That's very different from finding stuff on Craigslist or something like that. We've been involved in the motorsport industry for a long time, so we understand which components can be viable in this context and which ones cannot.

Offering used racing parts has not only broadened the appeal of our business, it has also helped us retain customers and kept us closely connected to the local racing community. Most of the used parts in our inventory come to us by word of mouth and racers coming to us directly to offer parts up, but we also take parts on consignment as well. In those cases, we work out something with the seller and then promote the part through social media, our website, and things like that. That tells potential buyers that we not only have the part, we've also checked it out to make sure everything's good and it's ready to go.

Determining which used parts to sell was a pretty straightforward proposition for us. We stay away from valvetrain stuff—valves, springs, retainers, etc. These kinds of parts are under stress loads, and it can be difficult to test them properly, so we don't take chances with stuff like that. Blocks, cylinder heads, crankshafts, camshafts, manifolds, carburetors—those parts are easier to verify. But we also always have to keep in mind the application that the part was previously put in. If it was a street application, you'll probably get a lot of longevity out of the part, but if it was in a 3,500-horsepower race car, it's going to be dramatically different, so that's part of the vetting process when we source these parts.





**NEW PARTS  
ADVOCATE:**  
Jay Grieshop,  
Chassis Doctor

*“ALL THINGS CONSIDERED, I THINK THAT NEW PARTS ARE OFTEN GOING TO BE CHEAPER IN THE LONG RUN.”*

In my experience as a race car builder and modifier, it seems like any time I get used stuff to work with, it doesn't fit, or pieces of the puzzle are missing, or something else isn't right about it. When someone buys something new, they know exactly what they're getting, and they have some pretty solid assurance that it's going to work. And if it doesn't, they have the option to return it.

For me it comes down to being able to stand behind my work, and I feel like if I'm selling new parts to these racers, it's a lot easier to back those components than it would be with a used part that I might not know the history of. Two parts can look identical but be in very different condition. Once in a great while we might sell a used part to somebody, but in those rare cases I already know the story behind it.

There's also kind of a stigma around used parts. Too often the people who are selling used components on Facebook Marketplace and RacingJunk are getting rid of them because the part has a problem of some kind. If it were a great deal, one of their buddies would have bought it already.

There are just so many horror stories about things that have happened to people in those situations, whether it's a complete motor or just a strut or something like that. They pay half of what they would have paid for the part new, but then they end up paying the other half—or more—to get that part repaired or rebuilt.

To me it's also about the price of my time and my customers' time dealing with those potential issues.

There are also factors to consider that go beyond just the amount of use a part has had and the amount of horsepower it was subjected to. Was it in a climate-controlled environment? Did this strut sit on a shelf in someone's house, or was it in somebody's race car trailer throughout the sub-freezing temperatures during the winter and the triple-digit heat in the summer? Someone might say something like, “Oh, it's only got 50 passes,” but that doesn't necessarily tell you the whole story.

Beyond the convenience of buying new parts and the potential benefits in terms of longevity, you also have to consider what your options are if there's a problem with a used part. Do you have a warranty if there's a problem with the part right out of the box? If it's a used part, it's entirely possible that they're just going to tell you “tough luck.”

All things considered, I think that new parts are often going to be cheaper in the long run. You might be paying 50 cents on the dollar for a used part, but if it breaks, you're going to end up spending as much to get another used one as you would have if you'd just bought a new one in the first place. And that's assuming there's no other issues involved. So with all these different considerations involved, I just feel like new parts are the way to go. **PRI**



# EDITORS' CHOICE

Hundreds of new product announcements cross the desks of PRI editors each month. Following are our top picks for May.

## STRIKER SERIES COIL-OVER SHOCK ABSORBER

### **ALDAN AMERICAN**

[aldanamerican.com](http://aldanamerican.com)

Now offered in a variety of lengths, the Striker series coil-overs from Aldan American in Signal Hill, California, gives chassis builders and tuners a wide range of independent settings for both rebound and compression.

"It could be used for autocross or a drag racing setup," said Garrett Harmola. "Or even a street car looking for greater performance through adjustability."

There are six compression settings and 11 rebound settings, providing a total of 66 points of adjustability.

"You can independently control the rebound and compression, and all of our

coil-overs are ride-height adjustable," added Harmola. "You can raise or lower the car to get the stance you want."

The 2.0-inch shocks are designed to work with 2.5-inch coil springs. The shock bodies are constructed from billet aluminum, and bearings are used for the mounting.

These shocks are designed with universal applications in mind and come with all the necessary hardware for installation. Aldan also has the RCX line, which offers similar features but are application specific for the fitment. Contact Aldan for more information on the lengths available to match the suspension setup. —Mike Magda





## LS3 ULTRA LO-RAM INTAKE MANIFOLD

### HOLLEY PERFORMANCE PRODUCTS

holley.com

Available in multiple configurations, the Ultra Lo-Ram multi-piece intake manifold for GM LS3/L92 engines works well with boosted or naturally aspirated applications.

“A lot of people think this intake is designed for forced induction,” said Mark Gearhart of Holley Performance Products, Bowling Green, Kentucky. “And it is. But it’s a beast and makes awesome horsepower naturally aspirated.”

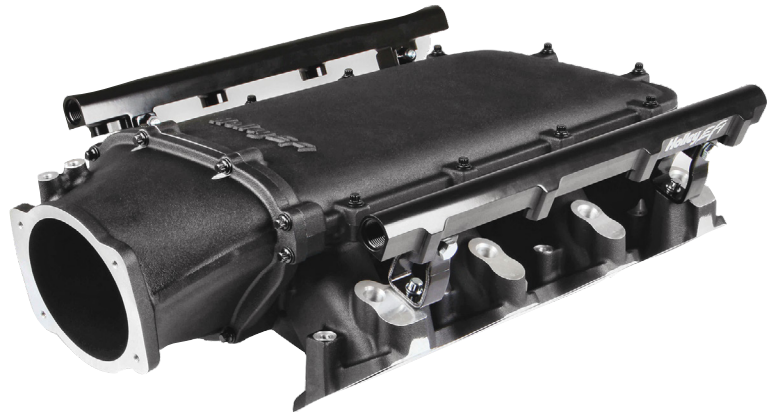
Another driving factor in the design is hood clearance. It will fit under stock or slightly modified C6 Corvette factory hoods. The manifold base can accept either the Ultra-Low top or the Hi-Ram top if more plenum volume is needed.

“Because it’s the same bolt pattern, an air-to-water intercooler can be put between the base and the top,” said Gearhart. “It will have the overall height of a Hi-Ram intake with the function of an intercooler.”

The Ultra Lo-Ram can also be fitted with either 16 or eight fuel injectors (either long or short style), and there is a burst-panel provision.

“For less than \$900 you can have 16 injectors and a burst panel,” continued Gearhart. “Those features would run more than \$3,500 with a billet intake.”

The intake is available in satin or black powder-coat finish. The front plenum flange has a 105-mm opening. —Mike Magda



## VB40A VOLTAGE BOOSTER

### DEATSCHWERKS

deutschwerks.com

Voltage boosters are useful tools to increase fuel delivery when the factory electrical system is not capable of getting optimum efficiency out of the fuel pump. DeatschWerks (DW) in Oklahoma City, Oklahoma, now offers a pair of 40-amp voltage boosters that will help ensure sufficient fuel delivery, even in high-horsepower applications.

The VB40Ax1 is designed to work with a single fuel pump, and the VB40Ax2 is capable of operating two fuel pumps.

“The VB40A increases voltage to the fuel pump so it will flow more,” said Krista Lamb. “You don’t have to replace the fuel pump with a bigger pump to increase the flow.”

The booster uses digital amplification technology and is rated for continuous use at 40 amps and 22 volts. There’s also a brushless mode for continuous use at four amps and 26 volts. Unique to the VB40A is an all-digital display and roller-wheel



switch, which is good news for those tuners who are frustrated with DIP switches that sometimes accidentally change the voltage settings.

“There’s a very robust digital menu with access to all the settings,” said Lamb.

More racers are switching to brushless pumps due to their capacity for higher voltage and more efficient operation. The VB40A has special settings for those pumps. Other features include password-protected lockout function and plug-and-play compatibility with DW brushless controllers. —Mike Magda



## 6373 AND 6473 TORQUE MASTER TURBOCHARGERS

### TURBONETICS

[turboneticsinc.com](http://turboneticsinc.com)



**D**esigned for drag and pulling competition as well as racers who tow their vehicles with diesel pickups, the 6373 and 6473 Torque Master turbos from Turbonetics in Hebron, Indiana, are direct replacements for many popular applications.

"It's a super budget-friendly turbo," said Reggie Wynn.

Model 6373 sports a 63-mm compressor wheel and a 73-mm turbine wheel, while the 6473 has a 64-mm and 75-mm wheel, respectively. Both have a T4 V-band outlet. The A/R is .91 on the smaller turbo and 1.00 on the larger model.

"These are primarily for diesel applications, but there are some gas guys who will use them," said Wynn. "These are competitive with the Borg Warner S300/400 users."

The turbos feature a new billet compressor wheel with advanced aerodynamic design and a robust journal-bearing design. There's also an O-ring between the compressor housing and the compressor backing plate to eliminate any possible leaks.

"These turbos are a partnership of three companies: Turbonetics, Precision Turbo, and Melett, which builds OEM replacement parts. Those three engineering groups got together to design these turbos," added Wynn. —Mike Magda

## PRO 600 IGNITION

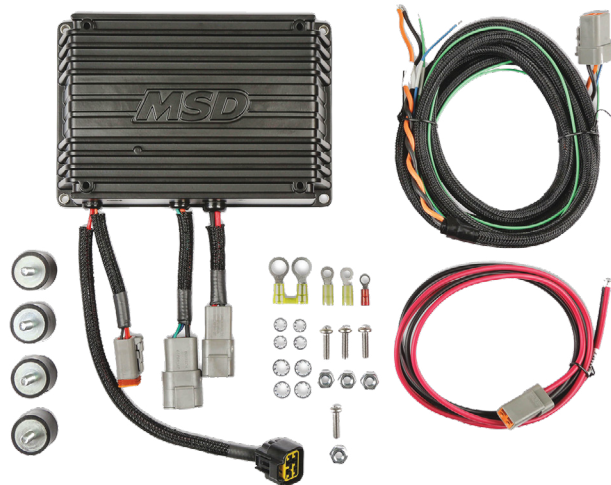
### MSD

[holley.com/brands/msd/](http://holley.com/brands/msd/)

**T**he drag-and-drive scene is now so popular that the aftermarket is developing unique products to serve those racers. The new single-channel MSD Pro 600 ignition is such a product, with the capability of running low- and high-energy levels for driving on the street or competing at the track.

"It just makes sense to develop the Pro 600 around these guys. Some were trying to run magnetos on the street," said Evan Perkins of the Bowling Green, Kentucky-based company. "When the boost or nitrous comes in, or they switch over to race fuel, it can maximize the spark energy. Then they can go on the street without having three amps across the plug."

The Pro 600 offers adjustable output energy up to 680 millijoules and can provide more than three amps peak



spark current when used with the recommended MSD coil. The ignition box is designed to work with the MSD Power Grid controller, which allows a single-wire toggle option to change energy levels.

"Some cars get only 10 passes out of the spark-plug wires," noted Perkins. "This allows them to get a little more mileage out of wear components and still have the spark energy to make 3,500 horsepower." —Mike Magda



## PROMODIFIED OVERDRIVE

### GEAR VENDORS

gearvendors.com

A few years ago, Gear Vendors' customers were driving cars with 1,000 to 2,000 horsepower. Now the power levels for street-legal vehicles are exceeding 4,000. Events like Drag Week and Rocky Mountain Race Week have definitely blurred the lines between street and strip.

"The problem is, everything we do to make the car go faster at the strip also makes it a pain to drive on the street," said Rick Johnson of the El Cajon, California-based company.

Gear Vendors called on the expertise and quality products of suppliers like Raybestos, SKF Racing, and Holley/MSD to develop a ProModified version of its popular overdrive.

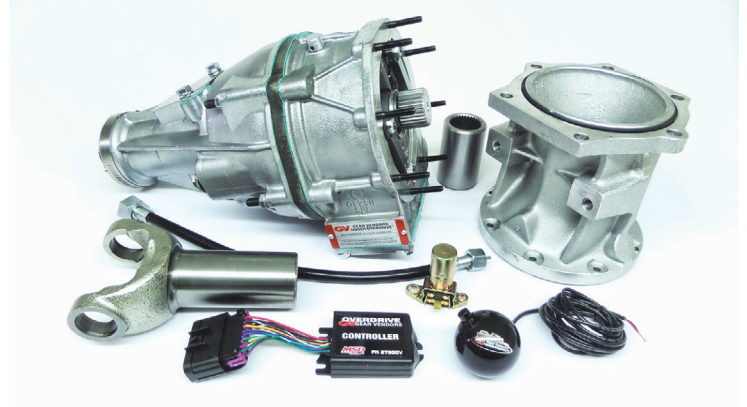
"We do virtually all the machining in-house, but without the relationships of great suppliers it would be impossible to meet the challenges of 3,500- to 4,000-pound muscle cars running sixes in the quarter mile," said Johnson.

The overdrive features the same .778:1 overdrive ratio as the standard model. The differences are in the details. It's hand-built and carefully spec'd to exact tolerances.

"We roll in and crimp the oil thrower, and we stake the tail-case bushing because these cars go over 200 mph," added Johnson. "The roller clutch cam is given a tighter specification to handle the abuse and tire shake."

Tire shake can often knock the sprags out of the transmission. The overdrive is designed to help protect the transmission and live through the tire shake. But its main chore is to split the gears, giving the driver complete control over the engine rpm and load on the street.

"With Gear Vendors, you have the right gear all the time," said Johnson. —Mike Magda



## PE3-IG2 ENGINE CONTROL UNIT (ECU)

### PERFORMANCE ELECTRONICS

pe-ltd.com



Enhancing performance and gathering performance data on the motorcycle engines used in the small, open wheel classes are now possible with the PE3-IG2 ECU from Performance Electronics in Cincinnati, Ohio.

The stand-alone kit comes with a custom harness that can be tailored for the project, and it works with all types of engine swaps utilizing carburetor or mechanical fuel injection. It's also compatible with engines from one to eight cylinders and either two- or four-stroke.

"It's used in micro sprints, Lightning sprints, and we're getting into the midget market," said Tim Michaliszyn. Some of the most popular motorcycle engines include Suzuki, Kawasaki, and Yamaha, he noted.

The kit uses PC-based tuning software and features extensive failsafe functions. It features four coil drivers with built-in igniters.

"The benefit is that it's a very simple, easy-to-use system. With the internal igniters, it needs no ignition box," said Michaliszyn.

"There's also no need for aftermarket sensors. It can use the factory sensors and coils, which helps with the overall costs."

The system includes on-board data logging for rpm, throttle position, water temperatures, oil pressure, fuel pressure, and numerous other data points.

"We advise customers to also use a wideband sensor to monitor air-fuel ratio," added Michaliszyn. "It also has a relay controller for switching on the cooling fan or electric pumps when needed." —Mike Magda



# NEWLY APPOINTED

## MIKE MURPHY

The director of track operations for New Jersey Motorsports Park combines his experience in series management, strategic marketing, and competition with a contagious passion for the sport.

By Jim Koscs

**M**ike Murphy is right where he wants to be as the newly appointed director of track operations for New Jersey Motorsports Park (NJMP). The 500-acre racing and entertainment complex in Millville, in the southern part of the state, features two road courses, Thunderbolt and Lightning, plus the Tempest Raceway karting track. The complex also offers a condo and garage complex for track members.

Murphy—who goes by “Murph”—comes to NJMP following a six-year stint with the International Motor Sports Association (IMSA). His leadership positions at IMSA included series manager for the Michelin Pilot Challenge and coordinator of series operations. He has also served as an event producer at Circuit of The Americas for Formula 1 and the MotoGP Grand Prix.

Murphy recently spoke with PRI about how his career experience will benefit him in his new role at NJMP.

**PRI:** You got started at the grassroots of racing—flagger, track marshal, team spotter. What got you

into the sport?

**Murphy:** Funny enough, my entire family comes from a background of medical professionals, and I was the only one that caught the racing bug. After watching races on TV, I convinced my dad to drive us up to the NASCAR race at New Hampshire Motor Speedway. I’ll never forget the feeling of walking through the grandstand entrance and seeing the cars come out of Turn 4. In that moment, my dad asked what I wanted to do, and I said, “This.”

**PRI:** What qualities do you possess that you believe make you a good fit as director of track operations?

**Murphy:** I come into this position with knowledge from roles throughout the industry that directly work with and impact track operations. Whether it’s from competition, series management or track marketing, I’ve learned how the individual departments work together to reach a common goal and deliver the best experience for our customers at all levels.

**PRI:** What are you most looking forward to in this new role?

**Murphy:** Mentoring folks that have the same passion that I do. It’s been



## MIKE MURPHY

**TITLE:**  
Director of Track Operations

**ORGANIZATION:**  
New Jersey Motorsports Park

**HOMETOWN:**  
Sewell, New Jersey

**FAST FACT:**  
Mike Murphy has been in 49 U.S. states, with Alaska waiting to be checked off the list. Except for flying to Hawaii, his excursions were all by either train or car. “The journey is truly the destination,” he said.

very refreshing to see the interest from people to join the team here at NJMP because of the momentum we have going into the 2022 season. While I’m excited for what’s to come, I’m also looking forward to sharing it with others who will cherish it as much as I do.

**PRI:** What are your immediate and long-term goals for the track operations?

**Murphy:** The immediate goal for our team that we’ve been tackling recently is recruitment and training for corner marshals. Building that base of individuals and fostering them throughout the season is a long-term goal, and I am also eager to begin relationships with our track rental partners.

**PRI:** As many tracks face opposition from local communities, what is NJMP doing to be a contributing and productive member of the community?

**Murphy:** Every year, NJMP attracts approximately 600,000 race participants, spectators, and tourists to our town and local communities. Everyone is highly encouraged to support local businesses throughout Cumberland County such as restaurants, hotels, and stores. We’ve also hosted several job fairs during the offseason for multiple departments to help boost local employment and make working at NJMP true community involvement.

**PRI:** What’s your most gratifying professional accomplishment?

**Murphy:** It was incredibly gratifying to be the Michelin Pilot Challenge series manager prior to joining

*“I’LL NEVER FORGET THE FEELING OF WALKING THROUGH THE GRANDSTAND ENTRANCE AND SEEING THE CARS COME OUT OF TURN 4. IN THAT MOMENT, MY DAD ASKED WHAT I WANTED TO DO, AND I SAID, ‘THIS.’”*

*“AS LONG AS YOU ARE PREPARED, YOU CAN OVERCOME ANYTHING THAT’S THROWN YOUR WAY.”*

NJMP. I knew my predecessors had done a lot for the series, and that I had very big shoes to fill. I focused on our customers and made the series my own. I knew leaving the series would be challenging, but the standing ovation I received at the final driver and team manager meeting was the best sendoff I could hope for.

**PRI:** What has been the best advice you have received professionally?

**Murphy:** Pick up the phone! Communication is very valuable and having a pulse on what’s going on is key. There is so much that can be gained from a conversation as opposed to a single email or chain.

**PRI:** What is one trait that you admire in others, and why?

**Murphy:** Being prepared. As an Eagle Scout, it was always engraved in my mind. As long as you are prepared, you can overcome anything that’s thrown your way.

**PRI:** If you could drive one race car around Lightning Raceway, what would it be?

**Murphy:** Lightning Raceway was the first track I ever drove a race car around. I had the itch to go racing and took up a school that offered the chance to drive open wheel cars. That said, I would have to go with one of Niki Lauda’s F1 Championship-winning Ferraris. He was always an inspiration to me. **PRI**



940A1R83  
Speedway/Pro Shocks Sprint Car A1 Adjustable Shock



91077855  
Speedway Chromoly Round Tube Rear Wing Tree



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AFCO 80201N, Sprint Double Pass Radiator



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855.313.9173



# INDUSTRY INSIGHTS

JOHN METRIC

As EV drag racing charges to increasing levels of acceptance, this Texas-based metals engineer and pioneer of the movement discusses why this segment is so appealing, as well as the obstacles that still must be overcome before electric drags can enter the mainstream.

By Jeff Zurschmeide

John Metric never set out to become one of the leaders of the electric racing movement. The Houston, Texas-based metals engineer used to work on the Northern Alberta oil sands, which is where he first saw a battery-electric drag racing snowmobile. The launch capability of that racer intrigued his engineer's mind, so Metric decided to apply electric power to a drag racing car.

That quest led him to NEDRA, the National Electric Drag Racing Association. Metric found quick success in electric drags, and

*“BEING COMPETITIVE MEANS, NUMBER ONE, HAVING VERY CONSISTENT REACTION TIMES.”*

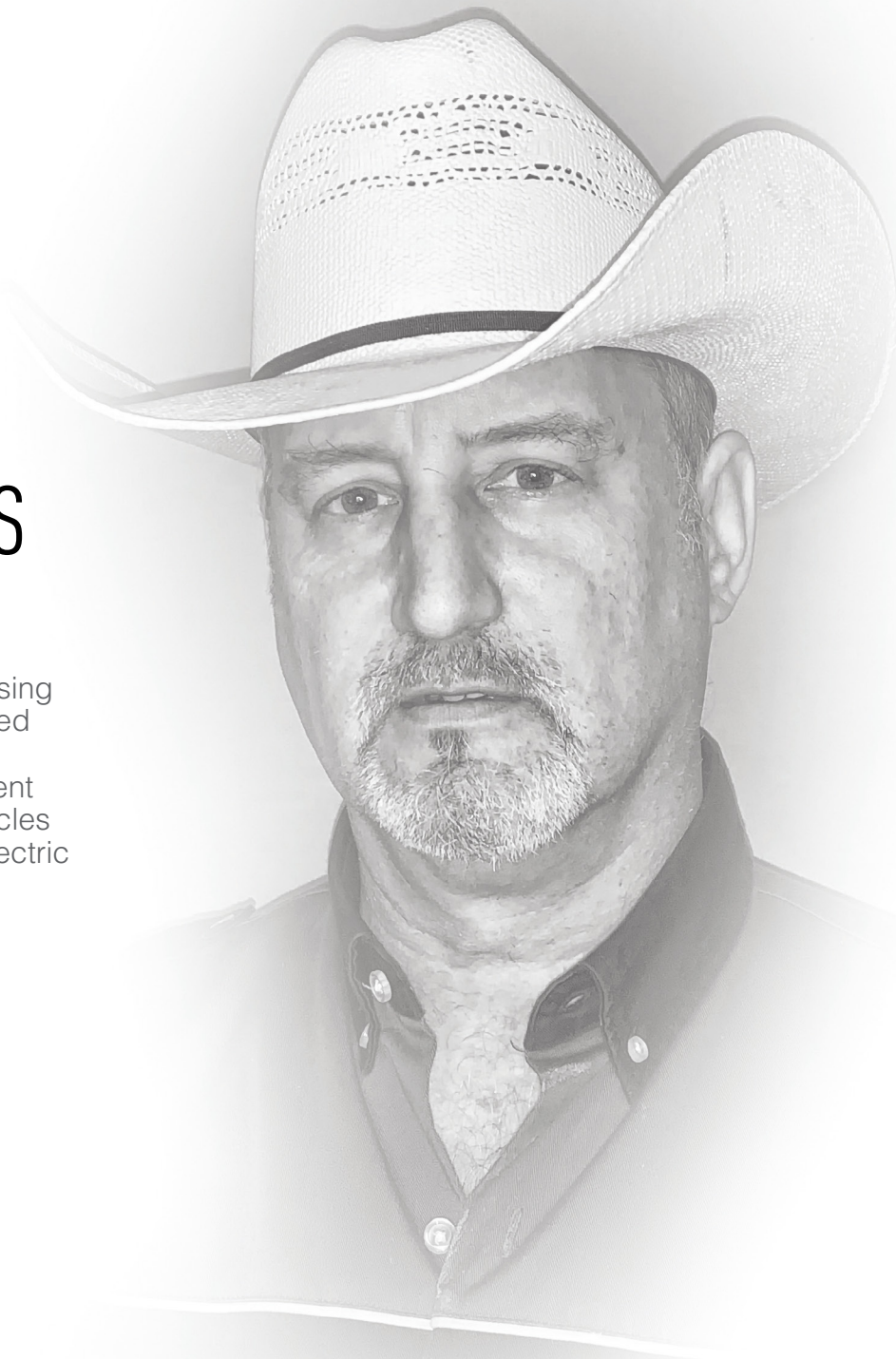
eventually he served as president of that organization for 10 years.

To feed his racing projects, Metric founded Lonestar EV Performance in Lake Jackson,

Texas, just south of Houston. Lonestar provides specialized lithium-ion batteries for racing and other uses and high-performance EV parts, and he consults on all kinds of racing and general-use electric vehicles.

We caught up with Metric as he was on the road to Wisconsin to pick up some new electric racing motors for a project.

**PRI:** How did you get involved with electric racing? Was it always an interest, or did you see something that brought you to the game?





John Metric has become one of the leading pioneers in electric motorsports. He was president of the National Electric Drag Racing Association for 10 years and founded Lonestar EV Performance.

*“THE FIRST CAR I BUILT WAS A 1984 PONTIAC FIERO. I CALLED IT DC PLASMA, AND THAT CAR HAD 1,350 LB.-FT. OF TORQUE.”*

SuperSeries finals this past year at Memphis.

**PRI:** If you could go back, is there anything you'd do differently with respect to IHRA and NHRA?

**Metric:** I think maybe advertise a little more. It was almost like an afterthought there. For example, to enter the Summit SuperSeries, a racer has to win their local track championship. Depending how the points were done for that track, a racer could go out and race one time, and if they got one point, they could be declared the electric track champion. But they had to race against somebody else, not go out and just do a bye-run. That's against the rules. So people didn't understand the rules about how to declare an electric track champion.

**PRI:** What are the unique success factors in electric drag racing? Is it just about a big motor and battery?

**Metric:** Being competitive means, number one, having very consistent reaction times. So you have got to practice. The other thing is the whole launch off the line. About all you can do is stomp the pedal down. There's really not a lot of tuning there, but there is battery temperature, and motor temperature, and getting to the line, and knowing what condition your car's in so that when you do react, you end up with a consistent time.

**PRI:** What do you think is the biggest obstacle to racers around the country adopting EVs? Not just in drag racing, but sports cars, endurance racing, sprint cars, or whatever.

**Metric:** I would put [those obstacles] into three categories. One category I discovered when I was supplying parts, motors, and things to different racers, is that people will take on a project, and then the project turns

**Metric:** I spent a couple of winters up in Alberta, and there's not much to do in the winter up there. The only sporting thing they had was snowmobile drag racing. I saw a guy there who had a little starter motor and a couple lead batteries, and he was doing phenomenally well with electric drag racing. I said, "Man, how could that be? That tiny little motor's outperforming all these 600-horsepower snowmobiles." So I decided to study it and, sure enough: When electric motors are turned on, they pull a lot of power trying to get up to speed. If they stay in that startup mode, they're generating hundreds and hundreds of horsepower.

**PRI:** So the next obvious step was to build an electric drag car?

**Metric:** I was working on a Lamborghini Diablo kit car in about 2009. I decided to abandon that project and build an electric drag car. I found these guys in NEDRA on the Internet, and the president was a guy named Mike Willmon in Alaska. I followed the Willmon model, using his design. He was in a Ford Pinto, and he was lifting the front

wheels off the ground! I couldn't get over the torque that was available, so the first car I built was a 1984 Pontiac Fiero. I called it DC Plasma, and that car had 1,350 lb.-ft. of torque.

**PRI:** After more than a decade, where is electric drag racing today?

**Metric:** NEDRA was founded about 25 years ago, and then over a period of 15 years or so, it created a set of rules, including safety rules, for drag racing. NEDRA lobbied NHRA and IHRA, and about 11 years ago, they adopted the NEDRA rules package for a class called ET bracket racing, electric vehicle, seven and half second and slower, and a motorcycle class as well.

Three years ago, the IHRA allowed ET bracket EVs into its Summit SuperSeries points, competing for track champion. We started to see one or two electric cars entering. Then this last year was the first year that the NHRA publicly said, "Yes, we're going to allow electrics into the Summit Racing Series." There were six electric vehicles from different classes in the Summit



into a three-year operation. As they get into it, there's a lot of computer programming, and wiring, and data communication, CAN BUS and these different things. They find that they bit off more than they expected, and the project languishes, and then it gets abandoned.

Then there's another type where they're dealing with electric batteries at 400 volts, 600 volts, 800 volts, and the person just says, "Man, I didn't know this, but I don't like electricity." So they drop the project for that reason.

Then I'd say there's a person who comes to a budget issue. They get into a project, and I tell them the basic parts are going to cost five grand for this, and six grand for that, so it's going to be about 20 grand. But by the time they fully get lined out, the car's probably 60 grand to convert. So they hit the budget wall, if you will.

**PRI:** Why do people come to electric racing?

**Metric:** A lot of people get into it just

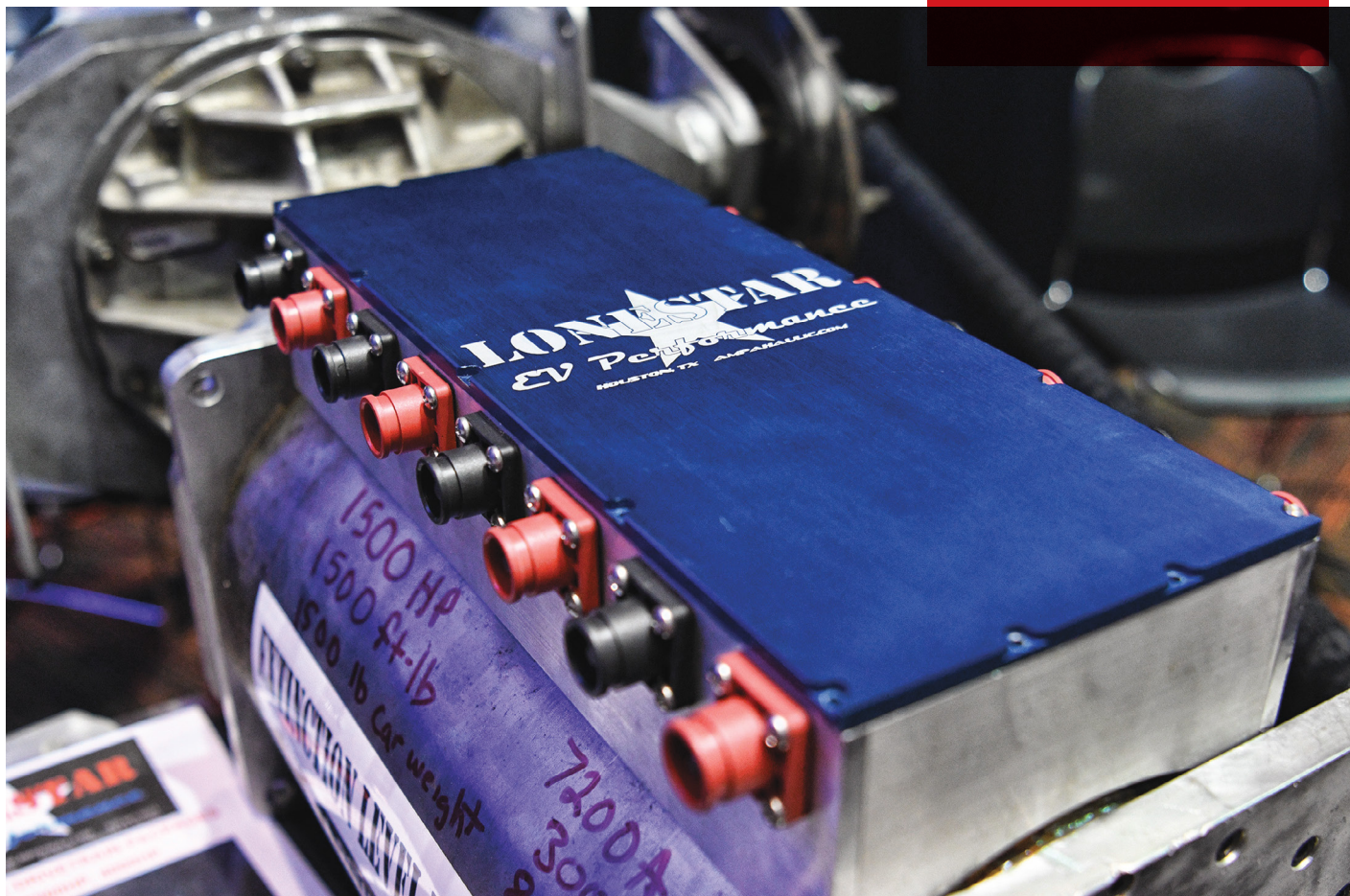
because it's unique, and they're going to be the talk of the town when they bring their electric car to the slalom race, or the track, or whatever they're going to do. I know a guy doing Late Model circle track. Everybody's over in his pits just like they're at mine, leaning over, looking at the car, can't believe that he's competitive. "Wow! How'd you do that?" You're the talk of the town, but you have to get there, and you've got to make that commitment and do it. So I say in general, you need resources and commitment, and you have to want to do it at all costs.

**PRI:** We're seeing some tracks and facilities starting to say, "Hey, we can't handle EVs, because we don't think we can fight a fire, or we don't know how we can do a driver extraction without exposing our E-crew to getting shocked." What do you think needs to happen on the facility side to get things up to date and confident?

**Metric:** That is truly an issue. You never

want to tell a safety guy or a first responder that, "Oh, no, no, no. It's safe." It has to be respected. To earn that respect you have to work around it and have a practice fire incident to get some experience. And there are very, very few people with actual electric car crash experience. There's no network of people who can do classroom training and say, "Well, listen. I fought three of these fires, at different venues, and this is how we did it, so please feel safe getting the driver out. And this is how you potentially fight a fire, or extract the battery from the car," or something like that. There's just not a big

John Metric's company Lonestar EV Performance specializes in lithium-ion batteries and high-performance electric race car components such as this 1,500 horsepower motor inverter-rear axle combination.







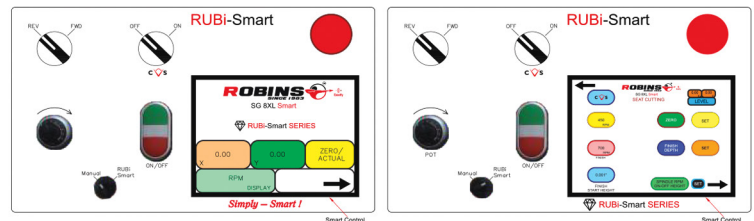
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enough network of people.

**PRI:** Another issue that a lot of tracks are going to have is charging capacity. Many tracks are out in the country, and they may not have enough grid power coming to the facility. How are you seeing tracks addressing charging capability?

**Metric:** I study this pretty intensely. My car does a, say, seven-second quarter mile, and I consume about one-and-a-half-kilowatt hours in a run. That doesn't sound like very much, but it's a huge amount of power. That's more than a thousand horsepower, like a megawatt of power for four, five, six seconds. However, one kilowatt hour can be recharged on an RV power outlet in about 15 minutes. Imagine a Tesla-type car, with an 80-kilowatt-hour battery. Say it consumes a kilowatt hour of power per run. If he starts full, he has 80 runs in his car.

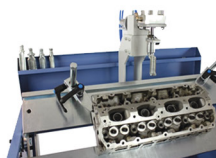
Now, going around a circle track or road course is a different animal. That will be a big consideration, I would guess. I think EV endurance racing could be a big deal. I was just having a conversation last night about having some quick pop-in, pop-out batteries. Boom, you're recharged, ready to go. But that battery has to be recharged, too. If you're out there consuming it at, say, 300 kilowatts, you better have a recharge rate that's equivalent to your consumption rate, or you'll have to carry enough spare batteries, all pre-charged, to meet the goal of the run. For a 24-hour kind of race, I don't know that anybody has enough spare batteries to do that. So if you're out there going around the track at 300-kilowatts, your net charge rate



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Electric drag cars emphasize driver reaction time more than internal combustion cars do, according to John Metric, pictured here at left. "About all you can do is stomp the pedal down. There's really not a lot of tuning there," he claimed.

still has to be 300-kilowatts to keep even, times how many cars that are going around the track, I can't do the math that quick, but it's a huge power source.

**PRI:** Getting back to drag racing, the first electric dragster to hit 200 miles per hour happened in 2020. Do people have another goal above 200 now in mind for EV drag racing?

**Metric:** Oh yeah. I'm right there. I'm planning to do that right now with my car. I've got a motor, and I'm actually driving right now to pick it up in Wisconsin. It's a 2,000-horsepower motor. We're shooting for 250 mph. But miles per hour is one thing, and ET is another. My car's still quicker than that 200-mile-per-hour car, so I crossed the line several car lengths ahead of him. I'm not trying take anything away from him! He did a great job, and he has some Lonestar batteries in that car.

But when the 200-mile-an-hour quest came along, that took a lot of attention away from the ET race. I'm building a Ford GT40 that'll be powered by these new 2,000-horsepower motors, and we're shooting for 300 miles an hour in the Texas Mile. It's a standing mile speed test. Standing start and you got one mile. What's

the highest speed you get to?

**PRI:** Formula E has had a lot of support in open wheel racing. Do you have any thoughts about how that series is going and the future of EVs in open wheel pro racing?

**Metric:** I have much less comment about that. I haven't circled into that, mainly because the way they're doing it is there's only one manufacturer for the various components, and they preselect that ahead of time. There's no open competition for car development.

**PRI:** PRI is committed to getting younger people involved in racing. What do you think EVs can do to engage the next generation in racing?

**Metric:** I sell a lot of JEGS Junior battery packs and other electric junior dragster battery packs out of Lonestar EV Performance. Everybody who gets one of these junior cars absolutely loves it. They can roll it off the trailer, do a little bit of checking the wind direction and that kind of thing, recharge it, watch the battery cells to make sure that everything's healthy, and go racing. They're very competitive.

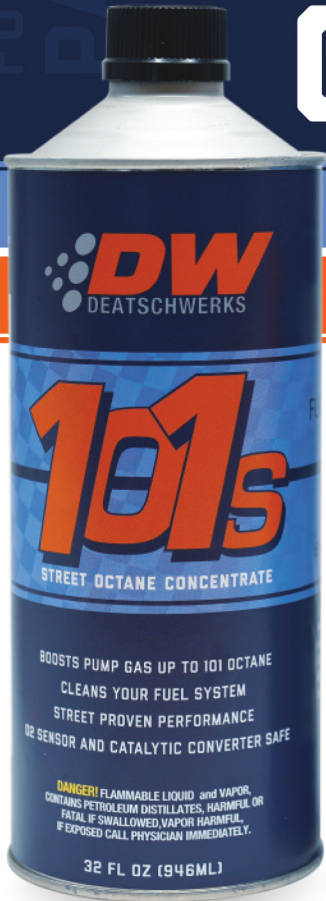
We're selling more and more each year. In electric there's a little less tuning involved, and it makes the sport a little more

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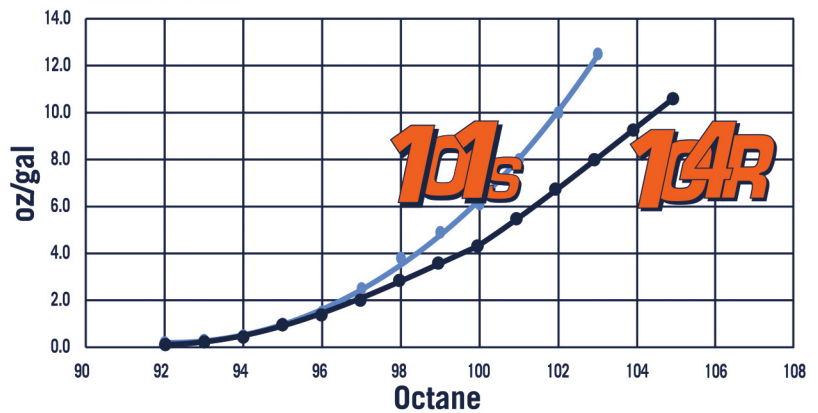
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competitive. It's much more about the driver, and the reaction time, and setting up the car. So I've had a really good experience with the younger generation and Electric Juniors.

**PRI:** As a guy whose business is in EV racing, providing the parts and the expertise, what do you think that traditional motorsports businesses are not understanding about EV performance and the developing opportunities that are available to them?

**Metric:** I walk up and down the aisles of the

*"A FOUR-DOOR SEDAN IS NOW QUICKER THAN 99% OF ALL GAS CARS OUT THERE."*

John Metric is actively involved in a number of electric race car projects. He noted that the most common EV conversion obstacles are complexity, high cost, and fear of powerful electrical systems.

PRI Show, and there are so many parts there that are all related to the internal combustion engine. And the internal combustion engine has had a great run. But now the quickest stock vehicle is a Tesla, except for maybe the Dodge Demon. But a four-door sedan is now quicker than 99% of all gas cars out there. I think that's maybe what they're missing. Tesla doesn't do any racing program. It's just silently—pun intended—sneaking up on the internal combustion





engine here and just putting them to sleep.

Open up an engine bay, and there's a blower or a turbo, and all the belts, and the pistons, and all these things. There's 1,000 moving parts in an internal combustion engine. The electric motor I'm going to pick up right now has one rotor, two bearings, and that's it. Nothing else moves.

I have been attending the PRI Trade Show for eight years, and we were out there waving the flag saying, "Hey, electrics are fast." People would walk by and sneer, and they would say things like, "Ugh, electrics. They will never take off." Each year, there's a little bit less of that. Now, they just look over and say, "Yeah, they're pretty fast." We're making progress. **PRI**

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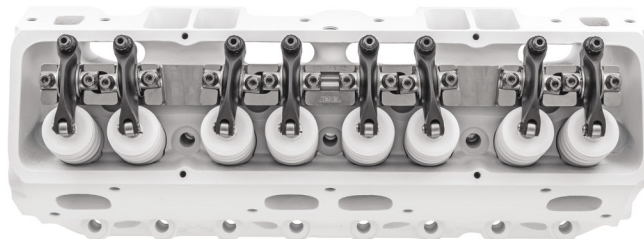
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## SPECIAL REPORT

# MY BEST BUSINESS DECISION...

Decisive action can deliver big results, and PRI's annual Motorsports Retail Business Survey uncovered 10 pivotal moves that paid off for these resourceful entrepreneurs.

By Steve Statham and Jim Koscs

There has been plenty of talk about the turmoil visited upon the racing industry these last couple of years as pandemic-related shutdowns around the world left race cars in the garage, grandstands empty, and supply chains crippled.

But the thing about hard times is, they present opportunities.

Setting aside the outside influences that interrupted the normal racing calendar, every enterprise goes through cycles of growth when a decision to take

the plunge in a new direction can yield big benefits.

In other words, the news isn't all bad.

As part of PRI's annual Motorsports Retail Business Survey, conducted late last year, we wanted to examine more positive aspects of the business environment. So, we reached out to speed

shops, engine builders, fabricators, machinists, prep shops, tuners, and others, and among our questions was: What is the best business decision you made over the last 12 months?

In this month's Special Report we're sharing some of the best responses from these retailers, in their

own words, in order to better understand why they did what they did, how long it took to implement, what specific steps were required, and why their actions turned out to be a great decision. In our conversations with these companies, we encountered decisions that touched on almost all aspects of business,

including employee relations, time management, inventory control, adoption of technology, travel, and more. The motorsports industry has had to deal with its share of storms these last two seasons, but there were still rays of sunshine breaking through, as you'll discover in the following pages.











When Point Karting owner Eric Gunderson, pictured at left, decided to scale up his workforce, he began by adding employees to work track events on weekends. Some of those employees were then integrated into the shop on a full-time basis.

## **DECISION #1: HIRE MORE EMPLOYEES AND RESTRUCTURE WORK HOURS**

**ERIC GUNDERSON**  
POINT KARTING

I made an intentional choice to scale up our workforce at Point Karting and structure my hours more strictly. I focused on putting people in place to start doing parts of my job that I could no longer do if we wished to continue to grow. I also made a decision to attempt to leave work more at work, and “be okay” with walking away at 5 o’clock to return the next day ready to dive in again. We could not continue on as we were, with me doing everything as a single-person business. Instead, investing in people and putting them in a place where they can be empowered to handle some of the workload and specialize in sections of the business was a clear path forward for us in 2021 and 2022.

I started with several employees working on weekends for at-track events, then brought some into the shop for more regular work, scaling part-time help to essentially a full-time role. This helped me identify where help was most needed and start to

put systems in place to make things more efficient and actionable. I also took this time to hire a bookkeeper to give me a more comprehensive understanding of my business and what we could afford to take on. This decision turned out to be the best choice because it has allowed me to take Point Karting from a regional kart shop to a nationwide retailer in the online realm. I am able to continue to focus on areas of growth for our business while also maintaining the same level of service within our region that helped us get to this point. The result is that we are more profitable, process our orders in a more efficient manner, and are able to get more done for more customers within the same time frame.

## **DECISION #2: BUILD NEW IMCA STOCK CAR TO HELP EXPAND CUSTOMER BASE**

**EDWARD BERTRAM**  
K&E SALES

You go to the race track as a vendor, and there’s 150 cars at the track, but you’re only selling to 15 or 20 of them regularly. Where are the rest of them going? It dawned on me that I needed to pick a class that I

was uncomfortable with, that I didn’t know enough about. So I picked stock cars. They always have a good field, and they always have good competitors. Now I had to literally put a car together in order to understand what they’re doing. Once I understood the car after I put one together, it was a lot easier to start putting parts in place so that when I did have the ability to sell to one of the stock car guys, I knew what was going on the cars.

At the race track they could talk to my driver, Kyle Frederick, about what works for him. For instance, everybody runs aluminum radiators. I decided to put plastic ones in because I could buy them really right and make a good profit on them, and they work great. So we put plastic radiators in our car, and consequently, I stock a half-dozen or more plastic radiators. I’m getting customers to come to the store to not only look at the car, they see what we’re doing because of the driver I put in it, a very well-liked driver. He shares information with them. So it worked out quite well.

## **DECISION #3: LIMIT QUANTITY OF WORK WE TAKE IN SO QUALITY DOESN’T SUFFER**

**WIN SMITH**  
WIN SMITH RACING ENT.

We were involved in leasing race cars and rent-a-rides for various people. When COVID-19 hit, some things changed, and we just felt like we needed to pull things back a bit and limit how involved we were with that. We were going to change the model of how we did it.

The year before we made the change, we had seven different drivers in our cars. It got overwhelming in some respects getting used to what each person wanted to experience when they got a car. We were in it in both oval and road course stock cars—we were renting to two different groups of people. Also, the insurance companies started to make changes in how they did liability for people who were in businesses like this. Basically, if you used or said you were renting a ride to somebody, it made it difficult to get liability insurance, even for my shop.

So we took a couple of guys that had worked with us before and said, “Would you be interested in contracting with us for an



Win Smith Racing pared its rent-a-ride program down to just a few select racers and a limited event schedule. "Our income has actually risen because we're not having to make so many changes," said Smith.

entire year, and we would concentrate on just the races you want to do?" And that's what we did. It's worked out real well.

What they do when they sign a contract for us, they become literally a part-owner of the car. It is its own little corporation. It has relieved so much pressure for us. Our income has actually risen because we're not having to make so many changes, have so many different people at the track.

What we do now, we set a schedule for the entire year and stick with it so it's easier to plan. Instead of somebody calling up two weeks before a race and saying, "I'd like to rent a car for this event," we're not scrambling to get stuff ready to go.

**DECISION #4: EXPAND OUR ONLINE STORE**

**KERRY KISSINGER**  
**KEN'S KUSTOM CHASSIS**

We have a lot of distributors that we use to sell parts. But the hardest part was



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—KERRY KISSINGER, KEN’S KUSTOM CHASSIS

integrating the inventory with the online store. It was a lot of manual work. We had 150 different brands with something like 200,000 SKU numbers. It was a daunting task, and it just was holding me back to only putting maybe 20 or 30 of the most popular items in our store. But then we came across Data Here-to-There at the PRI Show. They call it an app, but it works with BigCommerce and Shopify and some of the popular e-commerce platforms. They hook you directly with the major warehouses. As inventory levels changed in the

warehouses, they would now automatically change on your website. It made the decision to put a large-scale e-commerce sale together much easier.

They started out working with Turn 14 Distribution, and we were one of their beta testers for Meyer Distributing and Transamerican. They’re like a data network where they connect you with the data. You can see every brand that a particular warehouse has. Just with the click of a button you put a checkmark next to the brand that you want to sell, and then it

automatically loads it up onto your website. They have different pricing strategies, too. It really helps us little guys. We were probably selling \$3,000 to \$4,000 a month online in parts, which isn’t much. Now, in a year’s time, we’re selling \$10,000 to \$15,000 a week, some weeks we’re doing \$20,000 in parts sales. We’re expanding our market, too, from drag racing into diesel performance.

**DECISION #5: BRING MANUFACTURING IN-HOUSE TO ELIMINATE THE MIDDLEMAN**

**WADE MCGOWAN**  
**RACE PARTS SOLUTIONS**

Ever since we started, we had some machine shop guys who were friends of ours make our product line. As the business grew, we needed more help, so we invested in some CNC machines and started making our product line here in-house.

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—WADE MCGOWAN, RACE PARTS SOLUTIONS

many hands that have to touch everything before a product actually gets produced and sold. We wanted to eliminate that for, number one, quality control. And number two, if something did happen to where we run out, or there are back orders, we're not relying on other people and their excuses. We decided to take the step and expand and bring more manufacturing and more parts produced in-house.

We actually bought out a machine shop from a guy who was retiring and closing. We pretty much make everything now all our own. We do a lot of fuel system stuff, and we're real big in the forced induction

world—ProCharger stuff, various turbo flanges, turbo kit parts, custom exhaust stuff. Now, we're starting to expand more as far as production of that stuff goes, like billet intake parts, billet merges for turbo inlets and outlets. We're coming out with new products almost weekly.

Bringing more equipment in-house meant more employees. We went from two guys on the machine shop side to five guys now. Sales did increase, but the biggest thing was our profit margins because we eliminated middlemen, we eliminated markups. We're making more off of our product. Plus, we can control it better. No matter what, when

you outsource stuff like that, there's always some tolerances or variances. Now, doing it in-house, we can watch that closer and control it better. And made in America, that's a big thing for us.

**DECISION #6: TRAVEL TO EVENTS IN NEW AREAS DURING SLOWER MONTHS**

**KEVIN NOUSE**

**KNDSAFETY.COM/KEVIN NOUSE DESIGNS**

I sell racing safety equipment. Specifically, custom racing suits is the biggest part of my business. Slow times are typically June through September, when we're sitting around waiting for the phone to ring. We decided last year we were going to do a little bit of traveling and promote our custom suits and also our website.

I go to a lot of trade shows starting in November all the way through March. We do seven or eight trade shows or racing events

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KND Safety's sales were lagging in slow seasons, so they tried traveling to summer races. "It's still paying off," said company owner Kevin Nouse. "I get phone calls every week from someone who met us or saw us out there."

and car shows, but I never tried traveling during the summer months. We took about a three-week trip.

I sponsor a race track and two racing series in the Midwest. We went to seven or eight events in those three weeks. We went to the race tracks, and we set up in the pit area with the racers. We met the drivers and the teams, and it was a wonderful trip. We took measurements while we were out there

if someone wanted to get measured for a custom suit.

The results weren't apparent when we went, because that time of year most people have their equipment. But starting into the offseason, when it is custom suit-buying season, we sold many custom suits and all kinds of safety equipment to people that we met out there. It's still paying off. I get phone calls pretty consistently every

week from someone who met us or saw us out there. They have done a phenomenal job of supporting us as a result of the trip.

It was kind of scary because it was a lot of money. To go for three weeks is a lot of travel, fuel, meals, and hotels. But it has paid off big-time, and we are planning to do that same trip again this year, and some different areas, too.

### **DECISION #7: DIVERSIFY INTO OTHER TYPES OF MOTORSPORTS**

**JASON FRANIKOWSKI**  
SV MOTORI

Historically we've been involved in the motorsport community here in Colorado. We deal mostly with the folks who like to go to our three main tracks, mostly the club sports, and that was pretty much our focus at that time. We were looking at our customer base and looking at what venues they were running and trying to see how we could

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diversify and have more visibility.

We started doing some networking through the local BMW car club chapter. We told them, "We can be here and provide these services for your group." That, in turn, helped us get more stage time with the folks who were teaching those individuals for their first time on the track with the BMW clubs. And these individuals turned out to be involved with other organizations outside the state.

That's when we started meeting people who had involvement with IMSA. It was through that networking that we began supplying products for IMSA teams. That really helped us with sales and getting more knowledge in both directions from those team players.

It was kind of surprising to find out that some of the folks involved with IMSA are also involved with other teams. The connections broke out from there. Chassis builders started to get involved. And the next thing you know, we're starting to get involved with some dirt track individuals. It really is

*"IT REALLY IS AMAZING WHAT WORD-OF-MOUTH RELATIONS CAN DO IN AREAS YOU NEVER THOUGHT WOULD HAVE AN IMPACT ON YOU."*

*—JASON FRANIKOWSKI, SV MOTORI*

amazing what word-of-mouth relations can do in areas you never thought would have an impact on you. Getting involved in some of the professional series and then additional amateur series really woke everything up.

**DECISION #8: FOCUS MORE ON SERVICE/LABOR AND LESS ON PARTS SALES**

**JIM HELBING**  
MOTORVATIONS MOTORSPORTS

The last two years have been my best in the 25 years of performance-tuning Hondas and Acuras. I estimate a 6-7% increase, and perhaps more importantly, I now only do the installs I want to do. I have jobs booked out

for months.

I attribute the improvement to my decision to stop stocking major performance parts for inventory. Instead, I offer customers a choice to supply their own parts or have me order only what is needed for a particular job.

Many choose to have me handle the whole project, including ordering parts, and they pay a package price. Those who bring their own parts pay my hourly labor rate. I keep certain parts in inventory for customers who might not have thought to source certain ancillary items for their projects.




My trick is to have only A-mover parts, not stuff that sits. So, I don't get into a



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## DECISION #9: BUILD A NEW CHASSIS JIG

DAVID MACAN

### CUSTOM FAB WORKS

Business has been very good for me lately. As a fabricator, with a partner of 35 years, I had been handling street-and-strip chassis builds with one jig. That was causing a bottleneck, as we had to spend time converting the jig from handling sheet steel or rectangular-type tubing for street cars to round tubing for drag cars.

Increasing demand for no-prep car builds spurred my decision to finally build a separate jig for drag cars. I spent about four days on and off last summer doing that and put it into service in September. The table, which is over 15 feet long,

*“WE’VE QUADRUPLED OUR WORKLOAD, AND I’M SCHEDULED THREE MONTHS OUT.”*

—ANDREW JACKSON, LSX SWAP SOLUTIONS

is flat within ten thousandths of an inch, giving incredible tolerance control for higher-precision builds.

The net result has been getting more cars built. The first three drag cars built on the new jig have been successful from the start. In February, we were working on the fifth car, a 1941 Willys Pro Gas car. We had a 1967 Pro Touring Camaro on the street car jig, and seven more jobs were waiting to start.

## DECISION #10: EXPAND OUR SOCIAL MEDIA PRESENCE

ANDREW JACKSON

### LSX SWAP SOLUTIONS

In early 2021, I decided to expand my shop’s social media presence as a tool to

increase business. It turned out to be one of my best business decisions. Using my phone, I record and post car-related content on Instagram and Facebook.

I post mostly our builds and the process from start to finish. Those videos get the most views. With 6,500 followers on Instagram, that platform has been my best for growth. My content gets shared often, including by YouTube celebrities.

I started posting four to eight times per day on social media to get noticed beyond my northern New Jersey base. Now, customers are contacting me from North Carolina, Georgia, and even Europe.

My social media efforts have paid off. Pre-pandemic in 2019, I may have done

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seven major builds. Most of my business in 2021 came through social media, and I did 22 to 25 Pontiac G8 GTs alone. We've quadrupled our workload, and I'm scheduled three months out.

**CHRIS MORRIS**  
**MORRIS' MOPARS**

I didn't set out to become a social media star, least of all on TikTok, which was mostly dance videos. I was already on Facebook and Instagram, and my young son got me started on TikTok in 2021. There weren't any TikTokers out there covering cars and what I was doing, so I saw that as a good opportunity. It really took off. It has been a benefit to my business.

I post my smartphone videos every few days. Many are 15 seconds or less. A video of me explaining why I started my Mopar-exclusive shop got 37,000 views in just two days.

As a result of the videos, I've received

customer inquiries for parts, and I work on cars directly through TikTok messaging. People recognize me at the larger Mopar events and at trade shows. I handle social media myself. I credit the concentrated

efforts with growing the business.

I was mainly a one-man shop before, but I've added two part-time helpers since, and will be going to two full-time staff members by summer. **PRI**

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# HOW THE RPM ACT CAN BECOME LAW

PROTECTING THE RIGHT TO MODIFY CARS INVOLVES COMPLEX LEGISLATIVE PERSUASION, AND ADVOCATES ARE CONFIDENT THAT WITH ONGOING LAWMAKER CONTACT FROM PRI AND SEMA MEMBERS, THIS CRITICAL BILL WILL ULTIMATELY PASS.

By Jim Donnelly



Photo courtesy of  
WV Legislative Photography/Perry Bennett



Given the stakes involved for racing enthusiasts, and the law's potential impact on the very basis of their lifestyle, it's almost unseemly that the process of turning ideas into law is most often likened to producing sausage or other processed meat. Not everyone's thrilled with the analogy, but it's still hard fact that making laws—even ones whose outcomes seem basic and broadly consequential—is a gradual process that involves persuading lawmakers to accept your viewpoint through consistent, but unrelenting, persuasion.

It's that patient, logic-focused job of convincing that has the professionals of PRI's Action Center laboring in the nation's capital to make the RPM Act part of American law. The Recognizing the Protection of Motorsports Act of 2021, to use its full title, would override the U.S. Environmental Protection Agency's current interpretation that the Clean Air Act prohibits enthusiasts from disconnecting or otherwise modifying federally mandated emissions controls on street vehicles, even if they're being permanently converted into racing cars for on-track use only. The RPM Act would not only allow such tinkering but would also guarantee the \$50 billion American automotive aftermarket's right to produce, market, and install dedicated racing equipment.

It's an outwardly simple construct, but given the slow-motion process of creating legislation in Congress, and the bill's direct effect on what virtually every racer does, getting the RPM Act passed into law has required years of effort already, on a lot of people's part. Since the EPA stated its belief in 2015 that competition vehicles must still remain emissions-compliant, Americans who love racing have sent over two million letters, emails, and phone calls to their elected representatives in Washington, DC, urging the RPM Act's passage. They've also joined the campaign on social media using the hashtag #SaveOurRacecars. But as any political pro knows, the lobbying process doesn't end when the polls close on Election Day. To get lawmakers to come around to your way of thinking, it's crucial to sell, sell, sell.

"If you want to modify your vehicle to



US Representative Bob Latta (R-OH) recently toured the Fostoria, Ohio, headquarters of Callies Performance Products, where he took the opportunity to interact with employees and observe them manufacturing and assembling crankshafts, connecting rods, and camshaft cores. Latta is pictured here, at left, with Callies Vice President Heath Norton.

***“WE DON'T WANT TO WAIT UNTIL THE NEXT CONGRESS. IT HAS TO HAPPEN NOW.”***

convert it into a race car, it's no longer a street vehicle. It should no longer be subject to emissions requirements because it's not being used for general transportation,” said Eric Snyder, PRI's director of Congressional affairs, who is deeply involved in lobbying to make the RPM Act into law.

The PRI- and SEMA-backed RPM Act of 2021 was introduced in the House of Representatives by US Representatives Patrick McHenry (R-NC) and Raul Ruiz (D-CA) in May 2021. Since then, more than 120 members of the House, from both parties, have signed on as co-sponsors of the act, designated as H.R. 3281. Quite a few of the co-sponsors represent states that are home to numerous race tracks, even more racers, or plenty of companies that produce racing equipment. So it should

not surprise anyone that many of the Congressional sponsors hail from Indiana and North Carolina, with California, Ohio, Texas, Florida, and Pennsylvania also significantly represented, according to Snyder.

“Indiana and North Carolina are synonymous with motorsports and have really strong representation on the bill,” he explained. “The US Senators in both states are co-sponsors, along with a number of their House members. People might not think California is the lifeblood of racing, but it's home to a ton of race tracks. Wherever there's racing, chances are you'll find lawmakers who are supportive of the bill. California leads the way with 15 members of Congress from the state's Congressional delegation serving as RPM Act co-sponsors.

That, collectively, is the opening gambit, one that requires continual massaging—which is probably the right word for it—as the bill moves forward gradually. The next step for PRI and SEMA members is to keep the act in the forefront of lawmakers' consciousness. They're busy people, dealing with thousands of bills, most of which will never make it to a final vote. As





Late last year, US Representative Jake Ellzey (R-TX) visited Summit Racing Equipment in Arlington, Texas, for a tour of its retail super store, order fulfillment center, and distribution center. The Congressman, whose district is located just south of Dallas, served 20 years as a Naval aviator prior to running for elected office. He is pictured here in the jacket, at front left.

Snyder explained it, a continuous campaign of persuasion—by keeping the calls and emails coming, folks—is essential to getting the RPM Act passed by Congress. Some of that cajoling explains the overall size of the performance market. Other discussions remind lawmakers how many constituents in their districts run race cars or racing facilities.

“Right now, the bill is in front of the House Energy and Commerce Committee, and the Senate Environment and Public Works Committee. Based on everything we know, through our communications with [Congressional] aides, we think it’s more

**“THIS IS ABOUT EDUCATION, ABOUT LAWMAKERS UNDERSTANDING HOW RACE TRACKS IMPACT THEIR DISTRICTS, AND THE PEOPLE THAT THEY REPRESENT.”**

likely to move through the House E&C Committee first,” Snyder said in March. “We are having high-level conversations right now with the key people on Capitol Hill, but we must continue to apply pressure on the principal decision makers by harnessing the power of our grassroots. We don’t want to wait until the next Congress. It has to happen now.”

Explaining further, Snyder pointed to the fact that a million-and-a-half people who support racing, and earn their livelihoods from it in many cases, have already created a wall of momentum behind the law thanks to their outreach over the last year. “For a whole lot of lawmakers, the RPM Act is one of the top issues that they’re hearing about. They’re familiar with the bill and are noticing the uptick in enthusiasm for the RPM Act thanks to all of the outreach from the racing community. We are focused on leveraging this enthusiasm and excitement into Congressional action.”

Part of the process of getting the RPM Act passed is ensuring that the right people in Congress hear the lobbying efforts most loudly. “There are 535 members of Congress, and the reality is, they’re not all equal when it comes to policymaking on certain issues,” Snyder said. “We’re focused on committees with jurisdiction on this issue, as the members on these committees have a

greater voice on our efforts to protect racing. And the reality is, the voices of lawmakers who are going to have competitive re-elections count a bit more as well. That’s just the nature of the legislative process. You can’t divorce the politics from the policymaking.”

Which is why letters, emails, and calls, in addition to buttressing the RPM Act via social media, still count for a great deal in the ongoing legislative process. Nevertheless, Snyder is cautiously confident that the bill will indeed become federal law. “If they put this bill up, we have the votes to pass it through committee, both in the House and the Senate,” he confirmed. “It would easily pass in the House, and it would definitely pass in the Senate.”

As a pure matter of law, any differences or discrepancies between the legislation

US Representative Patrick McHenry (R-NC), whose district stretches from Mooresville up to the Virginia border, is the lead sponsor of H.R. 3281, the Recognizing the Protection of Motorsports Act of 2021 (RPM Act). McHenry is pictured here, at left in the blue shirt, during a recent tour of Hotchkis Sport Suspension.





that passes in the House, and separately clears the Senate, would have to be tuned for final passage so that the bills essentially match one another. "We'd like to get the bill done either on its own, or as one part of a larger legislative package," Snyder explained. "Today, Congress doesn't do that many standalone bills. When I worked for the governor of New Jersey, their state Senate passed 50 standalone bills or more in a day. The US Senate doesn't vote on 50 bills in a two-year cycle right now. The Senate is so deliberative that it seems like nothing gets done outside of large packages. But for us, the same players, the same policymakers on the committees of jurisdiction, are still the gatekeepers. They, and the House and Senate leadership, play an outsized role in what goes into big packages."

Snyder identified some of those influential lawmakers as Sen. Tom Carper (D-DE), who chairs the Environment and Public Works Committee, plus its ranking Republican

member, Sen. Shelley Moore Capito (R-WV). On the House side, PRI and SEMA are focusing most on Reps. Frank Pallone (D-NJ) and Cathy McMorris Rodgers (R-WA), the chairman and ranking member, respectively, of the House Energy and Commerce Committee.

There's still no specific timeframe for Congressional action on the RPM Act, but Snyder is confident that with ongoing lawmaker contact from PRI and SEMA members, it will indeed pass. "We're playing a very strong hand," he emphasized. "This bill has been around for a few years now,

*"I THINK WE HAVE EVERY REASON TO BE CONFIDENT. WE'RE PLAYING A VERY STRONG HAND."*

and we ramped up our efforts to get the word out. Lawmakers know the RPM Act and the passion behind it. They also know we're not going away. The formula for success in Washington, DC, is to have that critical mass where you have a lot of voters behind you. Then you combine that with the fact that there really aren't any super-strong detractors who are really dug in on a bill like this.

"Environmental groups are never going to enthusiastically support a bill like this," he said. "But is this the hill they're going to die on? It certainly shouldn't be. Motorsports is not a major source of emissions, and thus the RPM Act hasn't been a top priority for them. Ultimately, this is about education, lawmakers understanding how race tracks positively impact communities in their districts, and the people that they represent. So even if you've sent a letter in the past, we need to keep that pressure on until the RPM Act becomes law." **PRI**

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# WALKING THE LINE

With racing that straddles the local scene and top-league national series, regional sprint car and midget series thrive by offering racers a unique, best-of-both-worlds experience. But it's not always an easy ride for the owners of these sanctions.

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By David Bellm





Photo courtesy of Lucas Oil Empire Super Sprints

Every pond has its big fish and little fish. In the sprint car and midget ecosystem, regional series are the in-between fish. While big-league national series grab headlines and pack online streaming channels, midsize regional groups offer racing that's typically a cut above the local-track level, without the dauntingly high-cost or brutal competition of top series.

Although the value of these mid-level racing organizations is clear, what isn't so obvious is just how challenging it can be to keep them going year after year. Most regional series face stiff competition from other similar series, along with indirect competition from national series and unrelated entertainment options. Even high-school football games threaten fan turnout in some venues.

To survive, owners of regional open wheel series have to be nimble and aggressive. They need to sense the shifting moods, preferences, and dollars of their audience, and map that against the opportunities they see.

As a result, most of these series have evolved and morphed considerably over their history.

For some, that history spans more than eight decades. One of the series discussed here originated in the mid-1930s, amid the struggles of the Great Depression. Others are far newer, with ages barely in the double digits. But all have twisted and turned with the tides and fortunes of the people they serve, to bring the thrill of racing to those who appreciate it.





Regional open wheel series like the Michigan-based Auto Value Bumper to Bumper Super Sprint Series provide opportunities for racers to compete beyond the local level, but without the difficulty or expense of a national series.

## CHOOSING BOUNDARIES

The core of any regional series is its geographic territory, often defined by the particular states they stake out as their own. Yet that isn't always as straightforward or static as it might appear and can be affected by a number of different factors.

Foremost among those are the expectations and needs of racers. Most regional open wheel series look at where their racers are coming from and then build a roster of events that are within about an afternoon's drive from that core group. But, like many things in racing, the question of money can take precedence in deciding the geographic boundaries of a regional series.

"Auto Value Bumper to Bumper auto parts stores is our title sponsor," explained Tom Hartsell of the Cassopolis, Michigan-based 410 pavement sprint car series that bears the chain's name. "It has stores in Michigan, Indiana, Ohio, Wisconsin, and Illinois, and we try to stay within the parameters of its territory. We have to be cognizant of our sponsor and the awareness of what their customers are getting out of it."

While the pandemic appears to be slowly fading into history as this is written, its lingering influence still shapes where some series will compete this year. For instance, the New-York based winged 360 sprint car series Lucas Oil Empire Super Sprints is confining its schedule strictly to its home state to avoid complications that could arise from neighboring states reinstating harsh COVID-19 restrictions. In past years, the series had ventured freely into surrounding states, and even into Canada.

Ultimately, however, the decision of where a regional open wheel series will race is largely a matter of trying to strike an effective balance for fans and racers. "We're trying not to oversaturate things," said Chuck Miller, who runs the Lucas Oil Empire Super Sprints. "The most we'll do is something like Fulton Speedway four times a year. The guys like to limit it to a couple times a season per track, so that it's really special. It's not just another class added on."

## RIVALS AND PARTNERS

Perhaps more than any other factor, regional open wheel series are shaped by competition and territorial claims from rival series. In addition to the obvious need to respond to what other series are doing, the relationships between different open wheel series are often complicated. Things can change from cordial and cooperative to bitter and embattled practically overnight.

While struggles do occur, many regional open wheel series continue to cooperate with other tracks and series owners to

find synergies that benefit both groups. When such relationships work, they can be an important part of grappling with the challenges that regional open wheel racing faces throughout the country.

"There are only so many cars and so many people," said Rick Salem of the United Rebel Sprint Series, a winged 305 series based in Oberlin, Kansas. "It gets to be a zoo come scheduling time. We just don't have enough cars to pass back and forth between tracks, so it's just best that we work together."

While regional open wheel series slug it out with other similar series for race dates, fans' attention, and racers to put on tracks, there's still the influence of big national series to consider. In some markets, national series aren't a major factor. They don't come through the area much, so regional series owners don't feel any direct effects from them. At the same time, regional series often see themselves as offering a more accessible alternative to large national series.

"I don't worry about the World of Outlaws," explained Aaron Fry of the Buckeye Outlaw Sprint Series (BOSS) and FAST on Dirt series, based in Chillicothe, Ohio. "That's such a bigger scale. We offer the working man, a guy who has a regular Monday-through-Friday job, a place to go racing that's affordable, and it's obtainable. They can do it without having to call too many days off work or pull the kids out of school too much."

Regardless of their exact relationship to national open wheel series, most regional series pay attention to what the big-leagues are doing and shape their series to take advantage of gaps in their racing, coverage, or geography.



Car counts vary among regional open wheel series, but typically range between 10 and 30 these days. To cut costs and attract racers, the United Rebel Sprint Series was created around the relatively inexpensive 305 Chevy spec engine.



“USAC and the All-Stars can do what they want to do,” said Fry. “I fill their niche where it becomes available. The All-Stars have moved out of our area. Half of their schedule this year is in eastern Pennsylvania or the New York/New Jersey area. They run fewer races in Ohio now than they ever have. That’s fine by me. The tracks that used to get All-Star dates, now they call me instead.”

At the same time, some series have a built-in relationship with a national series. Such is the case with the Rapid Tire USAC East Coast Sprint Car Series, one of several regional series operated under the USAC banner. While it’s part of the USAC brand, there are significant differences that keep them out of direct competition. “We don’t compete directly with USAC because we’re in Pennsylvania, and they’re in Indiana,” said Curt Michael, who runs the regional series. “We’re also a 360 series compared to them being 410. But we do take off the week they come into Central Pennsylvania for the Eastern Storm.”

## CAR COUNTS AND FAN FIGURES

A racing series can’t exist without cars on the track. For some regional open wheel series, that’s relatively easy. They can reliably put 30 or more cars on track all season. Others struggle with single-digit car counts.

“Honestly, our car counts were down a little bit last year just because of the way everything is going on in the world,” noted Salem. “But we should be fine. We still pull in enough cars to put on a good show—20, 25 cars usually.”

“It’s been a real struggle the last couple years with car counts—I mean, astronomically a nightmare,” said Hartsell. “We would start calling on Sunday and finish on Friday, and sometimes only nine cars would show up. That’s hard to deal with. We can’t sell a top-notch program for premium dollars when we’re only getting nine or 10 cars there.”

Fans in the stands are the other essential ingredient in the health of a regional open wheel series. The sources we spoke to generally reported solid fan attendance at most races. But at the same time, they also noted that they’re battling with each other for the attention of a finite audience.

“Unfortunately, with open wheel

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## REGIONAL SERIES



The Wisconsin-based Badger Midget Auto Racing Association was struggling with reduced car counts until a controversial move to less exotic engines in 2015 turned the series around. "Last year, we averaged 27-28 cars a race," said our source at Badger Midgets.

competition, it seems that everybody's fighting right now as far as drawing a broad fan base to their tracks," observed Hartsell. "The crowd that really was into open wheel is an older crowd now, and none of the younger adults seem to be catching on."

Regional sanctioning bodies work hard to get the word out and bring their message to fans. To do that, all the sources we spoke to have essentially abandoned traditional advertising methods. "Years ago, we used to do a coupon ad in a local newspaper—bring in your ad to get five bucks off or whatever," recounted Hartsell. "We didn't get one single coupon back. So we quit wasting money doing that."

Instead, Hartsell and all of the other series owners we spoke to said they're channeling their efforts into social-media platforms such as Twitter, Facebook, and Instagram, coupled with regular email blasts. Besides the flexibility and speed of these platforms, their low cost makes them well-suited to changing conditions and limited resources. "We do as much social media as we can," explained Quinn McCabe of the Badger Midget Auto Racing Association, Sun Prairie, Wisconsin. "We're always trying to promote and draw people to it."

Unfortunately, this form of promotion does have a significant shortcoming built into it: The aging demographic that regional open wheel racing relies on generally isn't attuned to social media. With traditional advertising being ineffective in most markets, this can leave gaps in the promotion of races. "That

older generation is hard to reach," said Fry. "It's another problem we fight."

Along with social media, streaming on such platforms as DIRTvision, FloRacing, and The Cushion has become increasingly important for series owners as a means of bringing their series to a wider fan base and keeping them engaged. Many regional open wheel series don't have the reach to command the attention of bigger streaming platforms. Instead, they often have to depend on the tracks where they race to get their races streamed online.

"We don't have anybody streaming our races full-time," said Michael. "But most of our races are streamed. We're on Flo and DIRTvision a lot because we go to tracks that already have deals with them."



Some regional series have ties to larger national ones, such as the Rapid Tire USAC East Coast Sprint Car Series, seen here, and USAC's national sprint car series. The two organizations run considerably different cars and engines, limiting direct competition between them.



## DOLLARS AND SENSE

The cost required to go racing is without question one of the biggest concerns for owners of regional series. Out-of-control expenses can limit car counts, reduce competition, and endanger a series altogether.

One of the most effective means of limiting costs is by using a cheaper engine package. While that can ultimately keep a series viable and healthy for racers, the move isn't always welcomed initially. For example, Salem faced considerable resistance when launching his United Rebel Sprint Series around the low-cost 305 Chevy spec engine.

"When I started this series 17 years ago, everybody laughed at me," he recalled. "But I could see that the cost was getting out of hand, not only for racers, but for the tracks out here in rural Kansas. They just can't afford some of the big purses that the 360 and 410 cars are charging. I just wanted to keep sprint car racing going around here—give the racers and race tracks a break."

For the Wisconsin-based Badger Midgets, the move to a less expensive engine shook the local midget community to its core. The series began in 1936, and it had a long tradition of midget racing in the Midwest. But this legacy also made many local competitors highly resistant to moving to cheaper, less exotic engine platforms.

"In 2015, we decided to shake the tree up a little bit," said McCabe. "We were running the Fontana and the Esslinger, along with Chevys, Fords, and Toyotas. We were down to six cars in some races. We were begging everybody to come up here and race. So we went to a 2.4-liter production-based engine to cut costs. Now, most guys are running Honda, Mazda, and Chevy. And all three win."

"We had a lot of naysayers in the group when we did that," McCabe continued. "Everybody laughed at me and called me everything they could think of. Now, starting our seventh year, it's still getting bigger and bigger. Last year, we averaged 27–28 cars a race."

One way to limit engine costs is to simply go wingless. Without barn-door-size aerodynamic devices on the roof, sprint cars can't handle a lot of power, making wingless cars essentially free of costly engine-development escalation. That said, the question of wing versus non-wing is usually

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1) Wash off the rust preventative coating that is on the parts prior to installation using a foaming degreaser or high-quality solvent.

2) Apply a high-quality engine assembly grease, gel or high viscosity lubricant as appropriate.

3) Use a fine micron filter during break-in and avoid racing filters until after initial break-in.

4) Prime the pump before firing the engine to avoid a dry start condition.

5) Do not idle the engine. Bring the engine up to 2,500 RPM. Vary the speed by a few hundred RPM for 20 to 30 minutes. Break-in oil chemically assists the piston ring and cylinder wall mating process, but "seating" the piston rings requires cylinder pressure.

6) After the initial 30 minute break-in, change the oil & filter. Most wear metals will occur during this initial break-in. It is now ok to install a high flow racing filter to start making dyno pulls or go to the race track.

7) Warm the engine up to normal operating temperature, and then make 6 to 8 full throttle accelerations. This creates the cylinder pressure required to "seat" the rings. The break-in oil can be used for up to 500 miles of street driving, a dyno session or one track day.

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## REGIONAL SERIES



Winged dirt cars, like those of the Lucas Oil Empire Super Sprints, are the dominant flavor of open wheel competition right now. This can skew car counts and fan turnout toward one series over another, according to our sources.

more a matter of racer and fan preference than cost control. Nonetheless, it brings powerful savings that are hard to ignore.

"In the 12 years we've been doing this, we've never checked motors," explained Fry, who owns the non-wing BOSS sprint series. "Nobody does in the non-wing world. If a guy wants to build 1,000 horsepower to run wingless with, he's more than welcome to. It's often a detriment to have more horsepower. Most guys are looking for ways to detune the motor to slow the wheel spin down."

Some series are taking a close look at the length of races. They've found that by carefully reducing the number of laps in some races, they can significantly cut costs while still providing fans and racers with good, on-track action.

"We did a little study into the length of races," said Fry. "In 10-lap heat races, we found that most of the passing happens in the very first lap. The next most passing comes on lap two. By laps nine and 10, there's usually no passing at all. So we cut our heat races to eight laps instead of 10. Shortening all the heat races by two laps over a whole season means another night of racing on an engine before a rebuild. It also helps save that right rear tire for later in the night."

### PENNYWISE PASSION

Though they're well-intentioned, specific cost-cutting methods that are applied by regional open wheel series can have unintended consequences. In many cases, what appears to be a sound move to reduce

expenses for racers ends up costing more in the long run. And even when cost-cutting measures do work, racers are always going to be racers. Any extra money they end up with will probably only go back into making their car faster anyway. This is true even in budget-oriented 305 series.

"It's never going to be cheap," observed Salem. "Some of these injection systems they're making strictly for the 305 now are \$7,000, \$8,000, \$9,000. I teched a motor here a while back in Dodge City, Texas. It had carbon-fiber injectors. I asked the guy, 'What is this?' He just looked at me and said, 'It's expensive is what it is.'"

Prize money is the other big part of the expense equation, and it's something that most regional open wheel series wrestle with. Most of the sources we spoke with expressed the need for bigger and better sponsors to boost purses. "The toughest thing right now is sponsorship—raising money," noted Miller. "We've been at the same purse point for about 10 or 12 years. We really need to go up a little bit to help the racers more if we can. But by the same token, we don't want to price ourselves out of racing."

Unfortunately, most regional series find it difficult to make a compelling business case for potential sponsors based solely on numbers. It's really something that has to connect on an emotional level as well.

"To get sponsors, you pretty much have to know someone," observed Michael. "That's how we got hooked up with Rapid Tire Service. A racer knew them and brought



them to us. And we're happy to have them. It's hard to get sponsors like that if they don't know anything about racing."

These cost issues are playing out in an economy that's less than ideal. Most of the country is facing widespread inflation, shortages of goods, and a general uncertainty from the pandemic, the Ukraine war, and other global catastrophes. The most obvious barometer for this unease is what people pay at the gas pump.

"What I'm really worried about this year is the price of fuel to get to the track," said McCabe. "I don't see it going away. That makes me nervous right now. Hopefully, the diehard race fans will get out there anyway."

Despite the many challenges that regional open wheel series face nowadays, they continue on undaunted, with passion and perseverance that drives them to overcome obstacles and bring their sport to people who deeply care, week after week, year after year.

Just like any segment in motorsports, it's a labor of love. And that's not necessarily a bad thing.

"As far as our little series, we're getting by," said Fry. "We're putting on good shows. The fans who know us, love us. We've got some hardcore fans who follow us in just about every race we go to. If they can't make it, they're watching live on The Cushion. We're a great little regional series." **PRI**

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# INITIATING LAUNCH SEQUENCE

New midget & sprint car series are taking flight in the Midwest. Here's a closer look at how organizers are working to ensure their short- and long-term success.

By Bradley Iger





**B**elleville, Illinois' Performance Open-Wheel Racing Inc. (POWRi) and Concord, North Carolina-based World Racing Group (WRG) have both launched new open wheel series for 2022. Designed around feedback from racers, tracks, and fans, these new series promise strong car counts and plenty of action. But it takes more than tight racing to keep interest high. Here's what organizers are doing to make sure that POWRi's 410-Wing Outlaw Sprint League and World Racing Group's Xtreme Outlaw Midget Series and Xtreme Outlaw Sprint Car Series hit the ground running.

### POWRi 410-WING OUTLAW SPRINT LEAGUE

POWRi's 410-Wing Outlaw Sprint League is a Missouri Valley-based series that calls Lake Ozark Speedway in Eldon, Missouri, its home track. The new series closely follows the World of Outlaws and All-Star rulebooks to keep things simple for competitors who are currently racing with existing touring sanctioning bodies. With nearly 30 events

scheduled for the 2022 season, it's clear that organizers have high expectations for the series.

"In the Missouri Valley, where we're trying to continue to expand and grow, we've noticed that it was getting tougher and tougher to keep the 360 sprints on that path over the past few years," explained POWRi's Kenny Brown. "But there was a clear opportunity with the 410s. The 410s seemed to be coming on a lot stronger in part because you can buy a motor for roughly the same cost as a 360 and race for more money."

Brown told us that the value proposition offered by these engines is just one of several factors that has contributed to the growth of 410-class racing. "It's also the purses and the notoriety that they've been getting. The numbers seem to be heading in the right direction every year. We've co-partnered with the Outlaws on a lot of races—when the Outlaws and the All-Stars come to our area, I actually have them run at our race track. One of the things we're trying to do is continue to grow the count so





Organizers believe now is the perfect time to introduce POWRi's all-new 410-Wing Outlaw Sprint League, which has some 30 events scheduled for its inaugural season. "The fans have been telling me what they want: sheer speed and good racing," said our series contact. "They want to see a show. They want to see the best of the best...."

that, when they're in the area, our guys can participate with them. But the main reason that this was put together is because we simply didn't have a 410-wing series in the region."

With appeal of sizable purses and a history of solid attendance numbers for 410-winged sprint car races, Brown said that this was the perfect time to create the new series. "The fans have been telling me what they want: sheer speed and good racing. They want to see a show. They want to see the best of the best, and the elite of open wheel dirt car racing tend to gravitate toward the 410-wing cars. Interest in 410 is just expanding all the time. It's not a niche here and a small pocket there. If you have a 410-winged sprint car, you can pretty much run anywhere."

The new series adopts an event program that includes a pill-draw for entry that sets the time-trial qualifying lineup. Qualifying times advance drivers into heat races that are followed by semi-feature races where applicable, a trophy dash, and a feature event. "So we're not running it like the traditional pill-draw for a heat race," said Brown. "With a 410 wing, I think you have to qualify to set the field because the competition is so close. Being a few tenths behind someone else doesn't necessarily mean that one driver is slower than another, so it tends to promote the passing aspect of it. I think the fans really like the dashes as well."

He also explained that POWRi has been

working closely with teams and tracks to make sure the series came together in a way that appealed to all parties involved. "The drivers were the ones who expressed to us that they wanted to start the new 410 series, so we've been in close contact with them as this developed. The tracks clearly wanted the series, too. They were calling and asking for these events because they know that this is something that their fanbase is interested in."

Engine and chassis builders that have worked with POWRi in their other series have come on board to support the 410-Wing Outlaw Sprint League. "We're getting support from all of them to do this, so that's been great," said Brown. "A lot of these relationships were already in place because of our non-wing 410 series, but there are also a few new builders that we're working with. This is a great opportunity for them to expand their product offerings and grow as well."

Many of POWRi's existing corporate sponsors were eager to get involved with the new series, but organizers also continue to seek out other potential opportunities. "Sponsorship is important," he emphasized. "And we have picked up a few new sponsors for the series. I think it has helped immensely to have the continued support of Lucas Oil and all of the others that we currently have."

POWRi's marketing strategy includes newspaper coverage and a strong social media presence across the major platforms.

But with an existing fanbase that's already eager to check out the new series, Brown said that the race schedule is perhaps even more vital to its popularity.

"In order to grow the car counts initially, we've purposely chosen Lake Ozark Speedway as our home track. We have eight to ten races there this season, and that gives the drivers some assurance that if they invest in their car, they have a place to go racing. We're not going to take them further than four to six hours away from our home track because we don't want them to spend huge amounts of time on the road just to get to the next race. The idea is to drive once, race twice."

The POWRi team has also taken steps to make sure that their schedule doesn't force would-be competitors to choose one series over another on a given weekend. "When it comes to the 410s, obviously the biggest series are with the Outlaws and the All-Stars, and we're working with both of them," said Brown. "If the Outlaws come into town, for example, we'll take that weekend off so our drivers can run and aren't forced to chase points."

Looking into next year, Brown expects the race calendar to keep competitors just as busy as its inaugural season, if not more so. "I think we'll stay in the range of 30 to 40 events—that's our goal. We'll probably lose a few events to rain-outs, so that means at least 25 good races. That number of events should allow a racer to run the entire season with two motors; I think you can get a dozen or so races out of a motor before it's ready for a rebuild. A lot of it depends on the size of the tracks that you're running, and the good thing here is that we're running on three-eighth and quarter-mile tracks rather than half-mile ones, so that should improve longevity."

## WORLD RACING GROUP XTREME OUTLAW MIDGET SERIES AND XTREME OUTLAW SPRINT CAR SERIES

With the introduction of its new midget and sprint car series, World Racing Group is looking to inject some new life into open wheel racing in the Midwest and Eastern



regions. Xtreme Outlaw Series Director Casey Shuman told us that while car counts are generally growing as new teams continue to enter the fray, some aspects of the sport seemed to be stuck in the past and were ripe for a revamp.

“Part of it was about bringing some of the aspects of what we’re doing with our national series like World of Outlaws Late Models to open wheel. Format-wise, some of the series haven’t really evolved very much over the years, and that’s something we want to address with these new series. It’s a mixture of the traditional format and some newer elements—it’s something unique. Any time you can do something new and different, I think that piques some interest and gets people excited about checking it out.”

Shuman said that the level of competition is fiercer than ever, and that’s led to some creative solutions that are designed to promote good racing on a level playing



The Xtreme Outlaw Midget Series presented by Toyota will leverage existing relationships with engine and chassis builders from other series within World Racing Group, organizers told us; sponsor support, too, is already in midseason form, they added.

field. “If you do straight-up, single-car qualifying and line up with the fast cars up front, I think the racing isn’t as good as it could be. So we’re qualifying within our heat race: You draw for a heat, qualify within that heat, and you get points for that. Then when we go line up for a heat race, we invert the

field a bit and put the fast driver fourth, but you also earn passing points in that heat race. So if you’re fast and you’re passing race cars, you’re still going to end up where you need to be. We want to give all of these drivers opportunities to gather points and move forward every time they



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World Racing Group has looked to various incentives to help bolster interest in the new Xtreme Outlaw Sprint Car Series. "With our payouts, purses, and tow money, we're elevating things beyond what these teams are used to getting," said a series source.

especially on the sprint car side. I think the competition is going to raise the bar for everybody."

WRG has looked to various incentives to help bolster interest in the new Xtreme Outlaw series as well. "With our payouts, purses, and tow money, we're elevating things beyond what these teams are used to getting," Shuman said. "We're offering tow money to our top 10 in points, and that encourages them to follow the series. But we also concentrated on elevating the purses for third through tenth finishers. That's one place where I felt like other series were kind of lacking."

WRG has also paired roughly half of the events scheduled for 2022 with World of Outlaws Late Models races to bring more attention to the new series. "That will get this in front of some folks who might not normally see it," Shuman said. "When we ran the non-wing sprint cars with Late Models for the season opener at Volusia, I had a ton of

get on the race track."

Several different factors contributed to WRG's desire to bring both series into the fold this year, but perhaps the biggest push came from the drivers. "I grew up with non-wing sprint cars and midgets—I raced them for 20 years, so my heart is very much in

that type of racing," Shuman explained.

"As a racer, there were so many things that I wanted to see improved or handled in a different way. Teams have talked to us about how they wanted to have another option aside from USAC and POWri, and this was an opportunity to bring that to them,

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Late Model guys come up to me and say, 'Man, I've never really watched these things before—these are awesome.' A big part of the idea here was to get this in front of some new eyes and bring it to some new regions. And, of course, it adds to DIRTVision's content as well. If we can add more forms of racing and more dates throughout the year to our broadcasts, that adds value and improves the experience for our viewers."

Both the Xtreme Outlaw Midget Series presented by Toyota and the Xtreme Outlaw Sprint Car Series will leverage existing relationships with engine and chassis builders from other series within the group, and sponsor support is already in full swing. "Low-E Insulation has been involved with us for the past few years, and they jumped on board with the sprint car program immediately after we announced it, which was awesome," said Shuman. "We've also secured a similar agreement with another partner on the midget side. Having two

partners step up like that during our first year is very cool. There are also a lot of contingency sponsors that were excited to get involved right out of the gate. I think part of it goes back to the idea of offering something new and unique."

Alongside promotion on DIRTVision, World Racing Group's marketing team is getting the word out to local markets through radio, billboard ads, social media, and other platforms.

Shuman noted that waiting until December of last year to announce their schedule allowed them to plan the dates more strategically. "We wanted to make sure we weren't stepping on any toes. We want to give all of these teams the opportunity to come try these new series without having to sacrifice what they might be doing in other series. Scheduling on top of another race splits the field, and that doesn't do anyone any good."

The 2022 race calendar brings 12 midget

races and 14 sprint car races among the two new series, and how things shake out this year will largely determine the number of dates for next season. "We just need to see where it goes. It may be that these work well with 16 to 18 events that are kind of spread out, or it could very well end up being 30 events next year. I believe there's a ton of interest out there, but we still need to figure out what's best for the series—and best for the sport in general." **PRI**

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# HYPER RACING

The 600cc micro-sprint class is exploding nationwide. Packing a high-energy blend of innovative engineering, first-class customer support, and a bold drive to “push to the very edge,” this trailblazing Pennsylvania-based shop is growing right along with it.

By John F. Katz

It would be tempting to write that Hyper Racing is happily riding the monster wave that’s currently buoying 600cc micro sprints to new heights, but that wouldn’t tell the whole story. Certainly, Hyper Racing owners Mike and Christy Dicely are enjoying the view from the crest: The Lewisberry, Pennsylvania, firm reported 39% growth from 2020 to 2021, and projects an additional 15–20% increase in 2022.

“The 600cc sprint class is booming across the whole country,” Mike Dicely noted. “As one of the biggest players in that market, we are able to capitalize on that growth.”

Yes, it’s a big and growing market. But a company doesn’t get to be one of the biggest players without doing many things right.

## 600s ASCENDANT

Dicely attributes the 600 wave to “a combination of factors. With the online streaming that is available now, more people can watch the incredible racing that 600cc sprints provide, through platforms such as FloRacing, Fast Four Media, DIRTVision, The Cushion, and others. On a track that’s the right size and properly prepared, 600s offer the most intense racing a driver can experience. As more people see this, they want that experience. The class also offers many \$10K-to-win races, and the massive Tulsa Shootout. That’s also a big draw.”

Additionally, NASCAR Cup, Xfinity, and Camping World drivers “are using 600 sprints and other dirt-track, open wheel cars to stay sharp and continue to develop.” As examples, he cited Brett Moffitt and Sheldon Creed, among others. “It is well-known how much Kyle Larson races open wheel on dirt. Chris Bell grew up racing in the 600 class. And plenty of other drivers have made it big after getting their base experience in 600s.”

In fact, “Everyone is trying to race as much as they can, and 600cc sprints offer a compelling and affordable way to get that extra track time,” Dicely continued. “We heard that first-hand from Hailie Deegan, who bought a Hyper Racing chassis last year to gain more experience, racing at Millbridge Speedway in North Carolina.”





Hyper Racing is well-positioned to ride the current wave of popularity micro sprints are enjoying. “On a track that’s the right size and properly prepared, 600s offer the most intense racing a driver can experience,” said Mike Dicely.

*“EVERYONE IS TRYING TO RACE AS MUCH AS THEY CAN, AND 600CC SPRINTS OFFER A COMPELLING AND AFFORDABLE WAY TO GET THAT EXTRA TRACK TIME.”*

Additionally, “Parents see 600s as the best driver development class,” or at least a logical step between a quarter midget and a full-size midget or sprint car.

Even the pandemic has played a positive role, “encouraging outdoor activities, while limiting eating out, vacations, and travel. Racing in general got a big boost from the

new mindset.”

But that wouldn’t have helped Hyper if the company wasn’t already “very well positioned before the pandemic, with a very strong e-commerce arm, cloud-based ERP, and a VoIP phone system,” Dicely continued. “Now, after being cooped up for months at home, customers are comfortable ordering

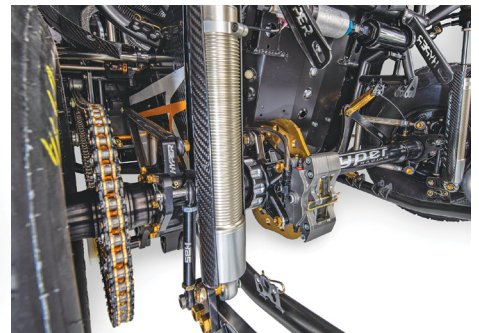
parts online, or at least surfing the net to get more educated. Also, being able to run the business from the cloud enables us to work from anywhere. That helped a lot during lockdown, and when an employee was quarantined.”

At the same time, Hyper Racing seems to have completely sidestepped the “Great Resignation,” hiring four new employees during 2021, and confidently expecting to add another two or three this year. “We have no problem finding employees,” Dicely told us. “I always keep my eye out at the tracks looking for prospects. I look for racers with a good personality, who everyone likes, and who are team players with mechanical skills and intelligence.”

### TECHNICAL INNOVATION

Another “right thing” Hyper has done—since 2017—is to sponsor the Hyper Racing 600 Speedweek: six races on six consecutive July nights, ranging over the eastern third of Pennsylvania, from south of Philadelphia to north of I-80 and just past Lebanon to the west. “We see it as our way of giving back and sharing the awesome Pennsylvania dirt track culture with the world,” Dicely said proudly. “Big races like this get all the best drivers together,” so fans “see the best racing. Our name recognition in Pennsylvania is already huge, but it helps when fans come to watch ‘the Hyper Racing 600s’ and they see an awesome show. Then they want to get a 600 of their own.”

When they do, Hyper is ready with some of the most technically innovative 600s on



Unlike midgets and full-size sprint cars, 600cc micro sprint chassis designs differ considerably between manufacturers. Hyper Racing’s chassis is unique in its longer wheelbase, front-axle-mounted steering box, and wishbone instead of Z-link rear suspension, noted Mike Dicely.



*“THE 600CC SPRINT CLASS IS BOOMING ACROSS THE WHOLE COUNTRY.”*

the market. “600cc sprints are unique in that there are a lot of different chassis designs out there. They are not like midgets or full-size sprints where all the parts fit all the chassis. For the most part, the components on our 600 chassis do not fit on other brands. Instead of the Z-link that most other manufacturers offer, our chassis use a wishbone rear, because of the high anti-squat it provides. 600s have a low center of gravity, and for longitudinal traction, you need to keep the CG up. Also, our wheelbase is a bit longer, and we mount the steering rack to the front axle. And because our drivers range from 8 to 70 years old, and from 60 to 300 pounds, we make the car very adjustable and configurable. We offer an adjustable pedal assembly of our own design in addition to an adjustable steering-wheel mounting system, a movable shifter assembly, and a seat that adjusts for height. So our chassis easily fits pretty much anyone.”

Hyper applies the same technology to its 270 micro and Lightning sprint/midget chassis. The company also makes chassis for quarter midgets and parts for Sharp Mini Late Models. “We provide high-quality parts that are in stock, although the popularity of the 600 class and the pandemic have made this a real challenge,” Dickey added.

**WEB PRESENCE**

Digital technology has also contributed directly to Hyper’s success, much as it has driven the 600 wave in general. Dickey mentioned “online advertising through Google and Bing, as well as keeping our organic search results at the top. Maintaining a good presence on all social media platforms is a must. We also advertise on FloRacing and other streaming services. Our robust website (hyperracing.com) is open 24/7. We update it constantly to provide

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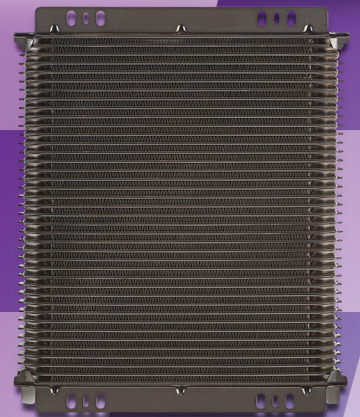
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**BUSINESS PROFILE**



Hyper Racing grew 39% from 2020 to 2021. Business co-owner Mike Dickey attributes much of that success to his employees, many of whom are racers.

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That said, Dickey still believes in the power of paper. "Our print catalog is sought after for technical guidance, as well as parts photography and descriptions." He credits the catalog to his wife and business partner Christy, who had worked as a graphic designer before co-founding Hyper Racing. "We always wonder when the day will come, when we will stop producing a catalog and go completely online," he added. "So far that hasn't happened."

Paper or digital, the catalog will likely remain vital to the business. While complete chassis account for 18% of Hyper's sales, parts make up the rest. Some are manufactured by Hyper: "Our unique products, like our left front brake caliper, adjustable pedal assembly, bearing carriers, spindles—they are all proprietary. They are designed in-house and manufactured in our own machine shop. Or, if we don't have the capacity, we sub them out to a few trusted local shops. But the products that already exist—rear brake calipers, seats, seat belts, wheels, etc.—we purchase." Dickey sees no point in literally reinventing the racing wheel.

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**CUSTOMER SERVICE**

Additionally, Dickey clearly understands that "having a well-designed chassis that wins big races all across the country is



*“WE HAVE THE MOST AWESOME EMPLOYEES; THEY REALLY ACCOUNT FOR ALL OF OUR SUCCESS.”*

where it starts. But that's irrelevant in an entry-level class if you don't offer support to go along with it. It's not enough just to offer parts and keep them in stock. Our customers need their questions answered. We need to answer the phone every time it rings, to guide the customer who many times isn't even purchasing a part—they just have a tech question. Having knowledgeable employees is a huge part of this, and we have the most awesome employees. They really account for all of our success.”

Certainly, Hyper Racing's reputation for advanced engineering helps attract new customers. When Steven Snyder Jr. turned 14 three years ago, his father/crew chief/team owner Steven Sr. decided it was time to move up from quarter midgets to 600s. “We reached out to several people”—including former 600, and now midget racer Andrew Layser—“and they led us to Hyper. Hyper has a very good chassis,” the elder Snyder explained. “We won a tremendous number of races last year against the best in the nation.” In fact, Steven Jr. aced the 2021 KKM Giveback Classic at Port City Raceway in Tulsa in October and won the Keith Kunz midget ride at the Chili Bowl in January. “My son has friends who race other chassis, and they say, ‘Man, ours just doesn't come out of the corners the way yours does. We can't get it to do what you're doing.’”

Service figured into the equation as well. “Mike will help you out if you ever have any trouble,” Snyder continued. “He answers the phone if it's morning, afternoon, or even if you are calling from the track. If you have a question about gearing, or stagger, or something that's throwing your car into a fit,” Mike can help, “because he raced himself for many, many years. And if he can't diagnose it over the phone, he's willing to have you bring the car to



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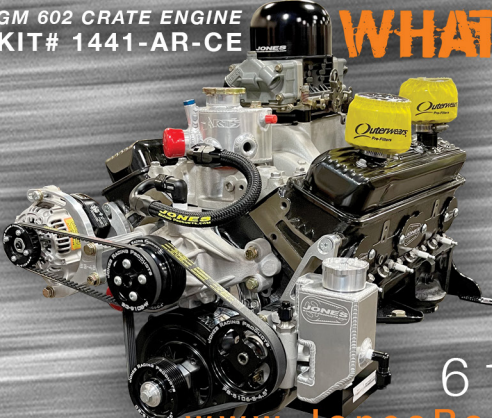

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his shop," a mere 90-minute drive for the Maryland-based Snyders.

Fuel-injection issues can be particularly vexing. "There are a lot of electronics involved with it. But we don't have to ship the injection to him." Instead, "he'll say, 'Just come up here, we'll see what's going on,' and he will fix it. He supports all of his customers. If you want to race, he wants to see you race."

Caleb Martin of Angelton, Texas, runs 305 and 360 winged sprints, as well as 600cc micros. "I've been doing it for more than 20 years," he told us. "But when I was a little kid, the Hyper catalog was always the coolest, and they had the cool-looking cars."

Martin began racing micros when he was 14, and he continued to compete after college. "I was winning a bunch of races with other chassis," Martin said. "Mike saw that, and we struck up a deal." That was in 2010, when Martin finished fourth in the I-30 600 Outlaw Nationals in Little Rock, running on Hyper's then-new Jacob's ladder-and-wishbone suspension. "Nobody had ever used that design before. And we had a lot of success. We won 12 races in 2011," and eight more in 2012.

"Mike never gets complacent," added Martin, "and that's a big deal for me. Whether it's the chassis or the injection, he's always looking for another competitive edge. I like having that on my side. If I have a problem, they take care of it quickly. Most of the people who work there can answer your questions. Their service, their shop, their website—their whole business is second-to-none."





Mike Dically said his business depends on supporting customers as much as it does on chassis design. His annual "Prepare to Win" setup seminar, seen here, teaches techniques for getting the most out of a micro sprint chassis.

## GETTING STARTED, MOVING AHEAD

Longtime PRI readers may recall that we first profiled Hyper Racing back in October 2006. Author Bill Sessa noted then how, like so many other successful racing entrepreneurs, Dically was practically born into the sport. As a preschooler in the early 1970s, he watched his father and uncle run a mini-sprint at the sixth-mile Lanco Speedway in Newmanstown. As a high-schooler, Dically was already driving—and winning—in the team's number-one car. He graduated from Millersville University and for seven years worked as a mechanical engineer while continuing to race and to work out the design of a new and better race car.

In 1994, with encouragement from his new bride Christy, they both quit their day jobs to launch Hyper Racing. Dically explained the name he chose for his company: "I've always been a hyper person, a go-getter."

Hyper sold three chassis that first year. Between then and the end of 2021, they sold more than 1,600. Since that 2006 report, their facility has nearly doubled in size, from 8,000 to 15,000 square feet.

From the beginning, Dically believed that the role of technology was not to make a car faster regardless of cost, but to maximize performance-per-dollar for racers on a budget. Hyper has always devoted significant floor space to design and development, and currently boasts a Roehrig shock dyno and an ASNU injector nozzle cleaning and diagnostic machine, as well as engine and chassis dynamometers. One recent acquisition is a CAD workstation



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When we asked Dickey about the challenges Hyper has faced along the way, he recalled 2003 as a particularly difficult time. Hyper was just beginning to spread out nationwide, but "most of our sales were to Pennsylvania racers, who bought from our parts trailer at Pennsylvania tracks. That year we had massive rainouts. Sales plummeted. We had to cut spending and survive off our inventory stockpile. Christy and I went without a paycheck. It was a very tough year."

Then, in 2017, Dickey saw the need to change Hyper Racing's Enterprise Resource Planning (ERP) software. The change should have upgraded Hyper's IT capabilities, but instead, "the implementation was not well done, and we could barely function for about three weeks during our busiest season. We had to work countless hours to get everything fixed. I thank my dedicated employees for helping the business get through that. If you see your business starting to slide, you need to work harder and smarter."

Then Dickey added something we really did not expect. "In the beginning [a major challenge] was my own personality," he admitted. "I was first a passionate race car driver who loved the competition, the adrenaline rush, the risk of racing. I didn't know a lot about running a business." He still takes "calculated risks. I push the business to the very edge, find that adrenaline rush, and it makes me feel very alive. This, of course, makes for some scary times, but I am not going out knowing I left something on the table. You have to take risks and not be afraid of failure to reach your maximum potential." **PRI**

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**LUBRICATION COMPANIES ARE EXPANDING THE ENVELOPE TO DEVELOP SPECIALIZED PRODUCTS FOR TARGETED APPLICATIONS, ALL WHILE HELPING RELEASE UNTAPPED HORSEPOWER.**

By Mike Magda

**R**ules can hamstring engine builders who want to make more power. Sanctioning bodies limit airflow, cam specs, compression ratio, and more in an effort to manage costs for the car owner while keeping an eye on potentially unsafe speeds.

When engine builders can't use modern techniques to actually increase horsepower, they're often limited to finding lost or missing horsepower. One of the best ways to free up those ponies is friction reduction in the engine and drivetrain.

On the other hand, in classes where rules are much more flexible, racers have been cranking up the boost and creating high-stress conditions that can damage expensive components.

That's where companies that specialize in lubricants have been developing and testing very specialized formulas to meet specific needs of the racer, whether in a rules-restricted or open class.

"In the past few years, I've seen more attention to application-specific products," said Kyle Fischer of Lubrication Specialties, Mt. Gilead, Ohio. "Some of the modifications that guys are putting to these cars are really pushing the limit. When you find new problems, you find new solutions."

There are also relatively untouched territories, such as within diesel and powersports, where lubrication issues can be different than in traditional motorsports.

"We do a lot of R&D with our diesel race teams because they take these components further than they've ever been," added Fischer. "But as a manufacturer, I wish we

talked more within the industry."

Fischer told the story of meeting a shock absorber specialist in one of his racer's pits. He learned of a consistent failure issue but also discovered that there was no hardcore science behind the selection of the oil in the shock absorber. Fischer visited the shock company's trailer to see the problem up close, and after conferring with his engineer back home, they agreed on a potential solution.

"We've known how to fix this problem for years, but we've never talked to a shock absorber company to know that a problem existed," said Fischer. "The shock company has great test equipment, and we'll do a lot of testing with them and hopefully formulate a great solution."

In another example, Fischer was talking with a racer who ran a blown alcohol engine and bemoaned that he was changing the self-contained oil in the supercharger after every run. After further discussion, Fischer learned that the constant oil changes weren't because the oil was breaking down, but because the racer feared worn metals were being deposited in the oil.

"So, let's try to fix the problem and use an oil to reduce the wear and extend the life of the oil in the supercharger," said Fischer. "You know, we stay in our lane. We're a lubricant company. We're in the lab and at the track, and we want to know what kind of problems racers are having that a lubricant can fix."

With all the choices in the market, racers need to be aware of the technologies behind a product and its intended use. They should



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## RACE FLUIDS



Manufacturers that specialize in high-performance fluids and lubricants have been developing very specialized formulas to meet specific needs of the racer, whether in a rules-restricted or open class.

know what the manufacturers have learned: the application will dictate the chemistry. The very best gear oil, for instance, makes a lousy engine oil.

That attitude is well represented throughout the lubrication industry. What follows is a sampling of companies that have developed unique products to address specific problems.

### TRI-EX2 GREASE & GEAR OIL TRIBODYN LUBRICANTS

One NASCAR team was experiencing drive-plate failures, especially on high-banked tracks where the load is brutal on the right side. The team was replacing the plates as often as every other race.

"With our ceramic technology, we made them a grease that would solve the problem," said Mark Wheatley of TriboDyn Lubricants, Mooresville, North Carolina. "We haven't had a failure since, and at least 16 Cup teams are using it."

The Tri-Ex2 extreme temperature and pressure grease is also good for wheel bearings and other components under high-stress conditions. It leverages the same ceramic coating technology used in TriboDyn's engine and gear oils.

"We heard from racers running quick-change rearends, and they complained that they couldn't change gears without wearing gloves," continued Wheatley. "Our Tri-Ex2 full synthetic gear oil works so well, it can lower the operating temperature up to 80

degrees."

The gear oil is offered in 75W-90 and 75W-140 viscosities and is suited for differentials, manual transmissions, transfer cases, and other gear boxes that require a lubricant. The patented ceramic lubricant features a complex mixture of gear lubricants, combined with synthetic base stocks, and a sulfur-phosphorus extreme pressure additive package with friction modifier. Wheatley explained this formula provides thermal and oxidative stability, as well as anti-foam, anti-rust, and anti-corrosion protection.

### DBR & HVL DRIVEN RACING OIL

While Driven Racing Oil's High-Viscosity Lubricant (HVL) has been around for about 12 years and is popular as an engine-assembly lubricant, the company recently gave the product a freshening.

"HVL is a legacy product that we recently updated with the Pennsylvania base oil that's in our GP-1 high-performance oils," said David Chamberlain of the Memphis, Tennessee-based company. "It makes for a phenomenal assembly lube because it has a natural cling and tack. It's going to stay where you put it."

The upgraded assembly lube is a non-foaming product and blends well with the break-in oil, extending the oil film thickness during that critical period. HVL is also a perfect segue into Driven's latest product, a





Driven Racing Oil's High-Viscosity Lubricant (HVL) has a new revised formula. It now uses the same Pennsylvania base oil as the company's GP-1 high-performance oils, improving its effectiveness as an assembly lube, said a company source.

15W-40 break-in oil for diesel engines.

"Driven pioneered specific break-in oils for gas engines," said Chamberlain. "This DBR formula piggybacks much of the same chemistry, but it has a much more robust dispersant package."

Diesel engines are notorious for producing soot, which are micro-sized pieces of hard carbon. Soot-related wear can be found throughout a diesel, especially in places like the timing chain or other areas with tight metal-to-metal tolerances.

"With a diesel, the soot has to be managed," explained Chamberlain. "We want to keep the soot suspended in the break-in oil. It shouldn't fall out into the component."

According to Driven Racing Oil, diesel engines can run the break-in oil longer than what is recommended for a gas engine. That's because of the lower rpm levels, and diesel engines have larger sumps for greater oil capacity.

"However, we suggest changing the filter after about 60 miles to pull any metallic particles out of circulation. Then you can go about 800 miles before draining the break-in oil, changing the filter, and switching to a conventional oil," concluded Chamberlain.

### SUPREME 7000 SYNTHETIC PLUS 20W-50 SCHAEFFER MANUFACTURING

The Supreme 7000 Synthetic Plus 20W-50 race oil is a high-zinc formula designed as

a general-purpose racing lubricant and can be used in select four-stroke motorcycle and ATV engines. The foundation is a high-quality, para-synthetic base stock that is mixed with an additive package and shear stability viscosity index improver.

"Supreme 7000 Racing Oil 20W-50 is fortified with Micron Moly and Penetro, our proprietary friction modifiers we use in all our engine oils," said Dawn Cross of Schaeffer Manufacturing, St. Louis, Missouri. "Those friction modifiers are key to protecting race engines operating in extreme driving conditions. In addition to the friction modifiers, Supreme 7000 Racing Oil 20W-50 is blended with extra zinc to further protect flat-tappet cam engines and other components.

"Each season we hear from racers who tell us how impressed they are with the condition of their engine at the end of the season," said Cross. "The results are the same: Engines are clean with little to no wear. Some racers report their oil temperatures are consistently 10 to 15 degrees cooler than with other lubricants."

### OXYCRATE RACING FUEL KLOTZ SYNTHETIC LUBRICANTS

A number of Late Model racers on both dirt and asphalt were encountering exhaust valve recession on their aluminum heads. To combat this problem, Klotz Synthetic Lubricants in Fort Wayne, Indiana, partnered with Hendren Racing Engines in

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Rutherfordton, North Carolina, to develop OxyCrate racing fuel, which is optimized for the 525, 602, 603, and 604 crate engines from GM Performance.

“Severe valve recession can impact valve lash and restrict exhaust flow,” said Jeff Streby of Klotz Synthetic Lubricants. “This reduces engine performance and increases maintenance costs over time.”

Streby said Klotz’s fuels offer measurable increases in horsepower and torque but were never designed for the unique durability requirements of modern crate engines. The company leveraged knowledge working with the Indy Racing League in the 1990s to develop a new race fuel.

Using a chassis dyno to validate the formulas, the new fuel showed an increase of 8 horsepower at 6,000 rpm over comparable fuels.

“We achieved horsepower and torque objectives early in the fuel’s development,” noted Streby. “However, several iterations were needed to achieve the desired hardware protection.”

Klotz engineers discovered a blend of its current products delivered the performance goals. Those products included its base high-octane fuel, a proprietary oxygenating additive, and Uplon, a Klotz product sold separately as a fuel lubricant that adds surface-active, anti-wear chemistry to the formula.

## SUPERCOOL RED LINE SYNTHETIC OIL

With power adders becoming more popular on both factory production cars and race cars, managing heat is always a concern. The Supercool performance coolant from Red Line Synthetic Oil was developed to serve a wide band of performance applications.

“As OEM manufacturers were offering more factory models with power adders, our customers were looking for ways to keep their engines cool and protect their investment,” said Mark Beatty of the Benicia, California-based company. “We launched Supercool to fit all makes and all models versus OEM fluids that only fit a narrow range of vehicles.”

Supercool is designed with better heat-

## BLUD LUBRICANTS



### 100% SYNTHETIC RACING ENGINE OIL

- Superior anti-wear formula reduces damaging wear and increases engine life.
- Protection at startup and low oil temperatures.
- Film strength that maintains stability at high temperatures and with fuel dilution.
- Low friction co-efficient reduce parasitic loss and increase performance.
- Increase alkalinity prevents rust and corrosion.
- Promotes cleanliness and sludge prevention/removal.
- Exception anti-foam capability.
- Made in the USA.

For more info: [bludlubricants.com](http://bludlubricants.com)

## CHAMPION BRANDS



### FULL SYNTHETIC RACING POWER STEERING FLUID

- Formulated to meet the specific performance demands of today’s high-performance racing power steering systems.
- Purpose built with higher viscosity than conventional power steering fluids, helping provide superior protection and performance.
- Exceptional anti-wear properties that help protect the system, anti-foam agents help prevent pump cavitation, and anti-oxidant properties help stop the formation of sludge.
- Stable viscosity under high-speed/high-temperature operation.
- Reduces temperature and delivers consistent steering response.

For more info: [championbrands.com](http://championbrands.com)

## DRIVEN RACING OIL



### GP-1 85W-140

- Premium Pennsylvania base oil provides natural film strength and tenacious cling that resists centrifugal fling.
- Shear resistant formulation protects high offset ring-and-pinion gears from high shock loads encountered in motorsports and off-road applications.
- Conventional formulation as recommended by leading gear manufacturers.

For more info: [drivenracingoil.com](http://drivenracingoil.com)



## HOT SHOT'S SECRET



### ADRENALINE RACING OIL

- Formulated with premium grade Group IV PAO Synthetic base oil.
- Infused with FR3 Nano Technology and high-zinc additive package for exceptional anti-wear properties.
- Improves horsepower up to 3%.
- Increased oxidation and thermal stability, deposit and sludge prevention, and reduced oil breakdown.
- Formulated for high-horsepower, high-performance racing applications.
- Available in 5W-20, 10W-30, 15W-40, 20W-50, ALKY-60W.

For more info: [hotshotsecret.com](http://hotshotsecret.com)

transfer properties compared to glycol-based antifreeze. It comes as a 50/50 ready-to-use premix and is compatible with gas or diesel engines found in tow vehicles.

“When used with supercharger heat exchangers, it helps keep the system cooler and takes longer to heat soak a water-to-air intercooler,” added Beatty. “Our formula enhances the fluid’s ability to transfer heat, reducing operating temperatures by up to 20 degrees F.”

Beatty also said Supercool will clean and lubricate water pump seals and can be used in systems with aluminum, cast iron, copper, brass, and bronze components. A formula is also available for the powersports industry.

“We are in the business of helping people protect their passion, no matter if they show it, cruise it, race it, or push it to the limit,” added Beatty.

## KLOTZ SYNTHETIC LUBRICANTS



### PURE ESTORLIN RACING TECHNOLOGY SYNTHETIC ENGINE LUBRICANT

- The core additive package is optimized to mitigate oxidation, even under extended periods of high oil temperatures.
- Contains elevated levels of zinc to protect hardware such as camshaft roller bearings and flat tappets from wear.
- Boosted with a range of friction modifying chemistry to increase horsepower, lower operating temperatures, and further reduce wear.
- Pure Estorlin Racing oil has a robust detergent package to maintain engine cleanliness and prevent high-temperature deposits such as varnish.

For more info: [klotzlube.com](http://klotzlube.com)

### PRO ATF 10, 20 & 30 HPL OIL

Fine tuning an automatic transmission and torque converter is a little easier with HPL Pro ATF transmission fluid that’s available in SAE 10, 20, and 30 weights.

“We designed them so you can mix them,” explained Erik Brock of HPL, Hebron, Indiana. “You can add a little 30 if you want to tighten up the converter, or you can mix them to achieve the reaction that you want for track conditions.”

Engineered for racers who were experiencing problems due to high-heat or high-stress conditions from boosted engines,

## LAT RACING OILS



### LAT PRO MAX ATF SYNTHETIC

- Specifically blended for use in automatic racing transmissions.
- Benefits include cooler operating temperatures, faster lock-ups, smoother shifts, and improved elapsed times.
- LFR technology reduces wear and offers longer life on all internal parts.

For more info: [latracingoils.com](http://latracingoils.com)



HPL Pro ATF transmission fluid is engineered to handle high-heat and high-stress applications. It’s available in SAE 10, 20, and 30 weights that can be mixed to alter transmission and converter characteristics.



the formulas are designed to reduce clutch slippage and provide more consistent fluid behavior with temperature swings.

“We built our Pro ATF from scratch for extremely high temperatures,” explained Brock. “Racers with turbo cars trying to spool up on the brake can build 100 degrees a second, and that can kill the trans oil. We designed the Pro ATF so it wouldn’t be such an issue.”

Formulating a new ATF often leads to compromises or tradeoffs in different areas of performance. “We knew the limitations of current chemistry and experimented with chemistries and technologies,” said Brock. “When building an oil, any oil, a change to the chemistry a tenth of a percent can affect another part of the oil. For example, a change in chemistry to improve anti-wear properties can completely wreck anti-foam or corrosion resistance. Our main goal was to build an oil that wouldn’t fall apart in a race vehicle with high temperatures.”

### LX4 LUBRICITY EXTREME HOT SHOT’S SECRET

When engineers notice problems in company-sponsored race vehicles, work on solutions tends to begin right away.

“We developed it after we found problems on our diesel race trucks,” said Fischer of Lubrication Specialties, the manufacturer of Hot Shot’s Secret’s LX4 Lubricity Extreme.

The problem was sourced to the Bosch CP4 fuel pump, which replaced the CP3 in many diesel applications, including GM, Ford, Ram, and Jeep.



Hot Shot’s Secret LX4 Lubricity Extreme is formulated to boost the lubricity of diesel fuel, making fuel pumps last longer, according to a company source.

## LEAR CHEMICAL RESEARCH CORP.



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- Extends component life.
- Prevents corrosion-induced failures.
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For more info: [learchem.com](http://learchem.com)

## NEO SYNTHETIC OIL



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- CV joint greases.
- Wheel bearing greases.
- Waterproof bushing greases.
- Anti-seize greases and more.

For more info: [neosyntheticoil.com](http://neosyntheticoil.com)

## PAKELO LUBRICANTS



### RACING TRANSMISSION DLS A

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- Maintains its starting viscosity during service even when undergoing extreme mechanical stress; effective LS (limited slip) properties.

For more info: [pakelo-usa.com](http://pakelo-usa.com)



## PENNGRADE 1



### HIGH PERFORMANCE OIL

- Enhanced levels of zinc and phosphorous.
- Superior film strength “clingability.”
- High-temperature stability/protection.
- Strong detergency, dispersants for engine cleanliness.
- Made in the USA.

For more info: [penngrade1.com](http://penngrade1.com)

“But the CP4 was developed based on Euro-spec diesel fuel, which has higher standards than our ULSD [ultra-low sulfur diesel] domestic fuel,” said Fischer. “We have a much looser standard, which allows for a drier fuel. Where this really showed its face was at the track in the diesel series. Racers were asking why they were burning up fuel pumps so fast.”

Hot Shot’s Secret reached out to industry insiders and conducted tests with a lubricity agent on both the CP3 and CP4. Basically, the process of removing sulfur also removes nitrogen and oxygen, both of which helped improve the lubricity in diesel fuel. Part of Hot Shot’s Secret’s secret was to return oxygen to the fuel, which has no effect on the environment.

“We really needed to get the lubricity levels in the fuel up. The fuel is the only thing lubricating the pump,” noted Fischer. “The trick is to bring up the lubricity without affecting the cetane. Racers still need to make power with the fuel but also protect the components in the fuel system at the same time.”

## POWERMIST RACING FUELS



### NITRO X PRODUCT LINE

- NITRO X is an alcohol or gasoline additive.
- NITRO X2 is a gasoline additive.
- NITRO XM is a methanol additive.
- NITRO XD is a diesel additive.
- NITRO XE is a new oxygenating additive formulated to safely and effectively add oxygen to any ethanol-based fuel.
- Available in single gallon or multi-pack (two- or four-gallon cases), and in five-gallon pails.

For more info: [powermist.com](http://powermist.com)

### PRO MAX ATF LAT RACING OILS

There’s no doubt automatic transmissions are bearing the full brunt of tremendous horsepower gains of the past few years, and that has sent lubrication engineers to the lab to find better ways to protect those parts.

“An ATF can fail because of high horsepower and high heat,” explained Danny Vaca of LAT Racing Oils, Orange,

## RED LINE SYNTHETIC OIL



### HEAVY SHOCKPROOF

- Film thickness greater than an SAE 75W-250, yet low-fluid friction like 75W-90.
- For heavily loaded racing differentials and transmissions, problem gearboxes.
- Most popular ShockProof product, many racing and specialty applications.
- Many performance racing applications like sprints, midgets, dirt late models, and quick-change differentials, Detroit lockers and spools, NHRA Top Fuel and Funny Car rearends.

For more info: [redlineoil.com](http://redlineoil.com)



LAT Racing Oils’ line of synthetic ATFs is available in Pro Lite, Pro ATF, and Pro Max ATF, engineered for different transmission and converter setups.



California. “With our Pro Max ATF synthetic, we built it from the ground up to be robust to fight heat issues and help the transmission live through the tortures of the turbo and supercharger cars.”

LAT offers three blends of ATF. The Pro ATF is the base formula with a viscosity index of 210, while the Pro Lite recipe has a viscosity index of 165 and is designed for reduced drag and loose torque converters. The Pro Max ATF is built for high-stress conditions that require higher shear resistance, faster lockups, and smoother shifts.

“When I tell them how much it costs, they say that’s triple what they normally pay for ATF,” said Vaca. “Then I ask how often they change transmission fluid. Sometimes the answer is after every race because the fluid has gone bad. Basically, I got them to answer their own question because our formulas will live much longer.”

### SPEED SAUCE AND SPEED SAUCE PLUS VP RACING FUELS

World War II piston aircraft used to inject a mixture of water and alcohol into the intake manifold to help control knock, and that same trick is still being used today with high-boost turbocharged engines.

“This ‘charge cooling’ fluid not only cools the hot compressed air coming into the engine but also acts as octane on demand due to the high-octane rating of alcohol,” explained Mark Walls of VP Racing Fuels, San Antonio, Texas, which markets



VP Racing Fuels’ water-injection formulas are available in two types: Speed Sauce, with a 50:50 methanol/water blend, and Speed Sauce Plus, with 80:20 ethanol/water.

## ROYAL PURPLE



### XPR EXTREME PERFORMANCE RACING MOTOR OIL

- Fortified with a high level of zinc/phosphorous anti-wear additive and a generous dose of Synerlec.
- Synerlec is Royal Purple’s proprietary additive chemistry that greatly increases the protective film strength of the oil, reducing metal to metal contact, friction, wear.
- Protection against engine wear, superior lubricity and low coefficient of friction for less parasitic loss and more power to the wheels.
- Premium synthetic base oils and Synerlec technology resist thermal degradation.
- Prevents the sludge and dilution by exotic fuels (alcohol and nitromethane).

For more info: [royalpurple.com](http://royalpurple.com)

## SCHAEFFER MANUFACTURING CO.



### MICRON MOLY RACING OIL 20W-50

- Made for race engines that burn alcohol-based racing fuels.
- Protects engines from wear and tear during high-temperature and high-rpm driving.
- Fortified with Micron Moly and Penetro to reduce friction and wear on bearings, rings, pistons, cylinders, and valvetrains.
- Enhanced with extra zinc to further protect flat tappet cam engines and other components from wear, scuffing, and abrasion.
- Advanced detergency performance to suppress high-temperature deposits from forming.
- Maintains oil thickness and pumpability during high temperatures.

For more info: [schaefferoil.com](http://schaefferoil.com)

## SUMMIT RACING EQUIPMENT



### DOT RACING BRAKE FLUID

- Full-synthetic brake fluid provides outstanding performance under racing conditions.
- Minimum dry boiling point of 572 degrees F (300 degrees C) and low compressibility.
- Helps maintain firm pedal response while avoiding brake fade and vapor lock.
- Exceeds the current US FMVS no. 116 DOT 4 specification.

For more info: [summitracing.com](http://summitracing.com)



## VP RACING FUELS



### PRO GRADE FULL SYNTHETIC RACING OIL

- Designed for high-horsepower, high-rpm, big and small block engines.
- Formulated with technologically advanced chemistry.
- Pro Grade contains multiple anti-wear chemistries, including high levels of zinc and phosphorous (ZDDP).
- Features a balance of friction and viscosity modifiers that significantly reduce fluid-to-fluid and metal-to-fluid friction, increase horsepower, and lower operating temperature.
- Available in SAE 0W-20, 5W-30, 10W-40, and 15W-50.

For more info: [vpracingfuels.com](http://vpracingfuels.com)

## ZMAX



### 10W-30 RACE OIL (NON API)

- Race only.
- High zinc/phosphate.
- Provides power and durability, which go hand in hand.
- zMax Race Products are used in the top-tier racing series and affordable for the grassroots market.
- The zMax 10W-30 race oil retails at \$11.99 a quart.

For more info: [zmax.com](http://zmax.com)

two versions of a water-injection formula. "Over time, the racing world adopted this technology, followed by a few production cars, such as the BMW M4 GTS."

Today's typical mixture is a 50:50 blend of water and either ethanol or methanol. The formula in VP's Speed Sauce is one part water, one part methanol.

"Methanol is used due to its high octane and latent heat of vaporization," explained Walls. "VP Racing started looking at other alcohols that potentially could maintain or improve upon the benefits of the water/methanol blends without some of the downfalls, such as toxicity, corrosiveness, and lower energy content."

VP then settled on an 80:20 ethanol/

water blend for its Speed Sauce Plus, using ethanol for its increased energy content, higher octane, safer handling from a toxicity standpoint, lower corrosion, and offering up to 100% renewable content.

"While choosing blends of alcohol and water, a balance of charge cooling and octane tradeoff will be realized," added Walls. "Testing at VP resulted in a mixture that gives 'enough' charge cooling and the right amount of octane on demand to deliver up to 5% more power than the water/methanol blend while using up to 30% less product. While looking at stock performance vs. alcohol injection performance, we were able to increase horsepower from 425 to 522 (turbo limited) and torque from 406 to 621 lb.-ft." **PRI**

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# SPRAY



While nitrous systems are relatively easy to install and use, improper setup and maintenance can have serious consequences. Here, experts provide insight into some of the most common mistakes engine builders and racers make with their nitrous combinations, along with best practices that can help avoid major headaches down the road.

By Bradley Iger

For more than 60 years, nitrous oxide has been one of the best bang-for-the-buck methods to add more power to an engine. But the trail of fried engine components that has been left in its wake also illustrates a path that can be fraught with peril. Fortunately, shared knowledge and experience have helped engine builders and racers zero in on increasingly dependable setups over the years. As competitors continue to push the envelope and more sophisticated technologies are introduced into the mix, today's nitrous setups are more efficient and reliable than ever before.

"One of the biggest changes I've seen in recent years is the adoption of EFI and dry nitrous setups," said Doug Flynn of Holley Performance Products, Bowling Green, Kentucky. "Ten years ago, people were saying that you couldn't do that, but now nearly all of the Pro Nitrous cars are running fuel injection. Tied to that is the more widespread use of data acquisition. A lot of racers are running eight wideband O2 sensors to monitor the air/fuel ratio in the cylinders to tune each of them individually. That allows things to be safer, and that in turn allows them to run more nitrous."



# PLAN







One area where problems tend to arise is with solenoid fitting installation, noted our sources, one of whom cited the introduction of debris as a particularly common occurrence in improperly set up nitrous systems.

Cody Sprague of Nitrous Express in Wichita Falls, Texas, said that the latest progressive controllers can provide a level of adjustment and automation that was unheard of just a few years ago. “Controllers like our Maximizer 5 have the capability to data log and set up numerous safety features to keep a vehicle making great power safely. This controller monitors throttle percentage, engine rpm, nitrous PSI, boost or pan vacuum, as well as other user-defined sensors to ensure that the engine is in the correct state to accept nitrous. If it detects any condition that is outside the safe range, the controller will shut down or pull back nitrous flow to protect the engine from any damage.”

Yet despite these advances, nitrous still has the potential to trip up newcomers and seasoned veterans alike, and the consequences can still be disastrous. “It’s the easiest way to get horsepower, but

there’s a lot of bad information floating around out there,” warned Ernie Wrenn of Compucar Nitrous Systems, North Augusta, South Carolina. “If the guy next to you has blown his motor up, you probably don’t want his tuning advice.”

Dave Vasser of Nitrous Outlet in Waco, Texas, said that bad habits can be tough to break. “A common struggle for us is the guy who believes, ‘I’ve been using nitrous for 30 years, you can’t tell me to do it this other way.’ We’ve spent a lot of time telling customers that they’re going to blow their car up. It does us no good to make that one-time sale and lose a customer for life because they didn’t listen to us and then ran into problems later.”

With that in mind, let’s take a closer look at where things tend to go wrong with nitrous combinations in racing applications, and what can be done to ensure that an engine lives to spray another day.

## SETUP AND TUNING

Vasser said many folks make the false assumption that the installation guidelines for nitrous oxide systems haven’t really changed over the years. “Back in the day, people were told to take everything to a chassis ground. But today with things like high-voltage fuel pumps, modern ignition systems, and the other electronics that are often involved, there’s no such thing as a clean chassis ground anymore. It has to go directly to the battery because all of those electronics transfer noise, and nitrous controllers are very susceptible to that noise. The battery acts like a noise filter, and it’ll keep that noise from traveling back up to the controller and causing it to malfunction.”

Another area where problems tend to crop up is with solenoid fitting installation, according to Sprague. “We send filtered fittings in all of our nitrous systems to protect the nitrous solenoids and jets from debris,” he said. “If this is done wrong, a racer could end up with leaking solenoids or clogged jets, and that’s going to have an effect on performance. Avoiding that is really just a matter of following the installation guidelines in the instructions.”

Flynn said that in nitrous-heavy combinations, racers often make the mistake of trying to run too much timing in hopes of extracting every last bit of performance on the table. While that aim is certainly understandable, it often does more harm than good.

“A lot of people are running timing well into the single digits—five, four, or even three degrees,” Flynn explained. “And I think some people have this perception that this can’t be right and that they’re losing too much power as a result, so they’ll add more and hurt the engine. More often than not, it didn’t



Nitrous is a relatively simple route to big power gains, but it demands diligent setup and maintenance. Without such attention to detail, engines can be ruined in seconds.

*“IT’S THE EASIEST WAY TO GET HORSEPOWER, BUT THERE’S A LOT OF BAD INFORMATION FLOATING AROUND OUT THERE.”*



need that additional timing in the first place because they're not leaving power on the table. Some cylinders make more cylinder pressure, and you need to take more timing out of those, otherwise you run the risk of all sorts of problems. That can lead to detonation, loss of ring seal, and then if you get oil inside the combustion chamber, you can end up with a melted piston."

He suggested that the best approach is to start off conservatively and dial it up slowly. "I always tell people that they can add it back in, but they can't take it back out after the engine is burned up. Start lower than you think you need to and sneak up on it," Flynn advised. "Guess too high the first time around and there might not be a second chance."

With a nitrous motor, "reading the spark plugs is probably the most effective tool to determine if you're on the right track," Flynn added. "Look at the ground strap and the coloration of the threads, and also look at



Leaving pressure in the system can damage nitrous pistons and solenoids, causing leakage or restricted flow. Closing the bottle and purging the system after every run can help prevent such issues.

the porcelain for a read on the air/fuel ratio. There's a science to it."

Wrenn said that tuners also need to pay close attention to jet spread. "Different manufacturers use different jet spreads because some of them use higher fuel pressure than others," he explained. "The

idea there is to get better fuel flow through the nozzle, but with nitrous spraying at 950 psi, when it comes out of the end of that nozzle, there is actually a vacuum going up through the fuel side. If you ignore how that vacuum is affecting the mixture, you can get into a situation where the fuel-to-nitrous ratio

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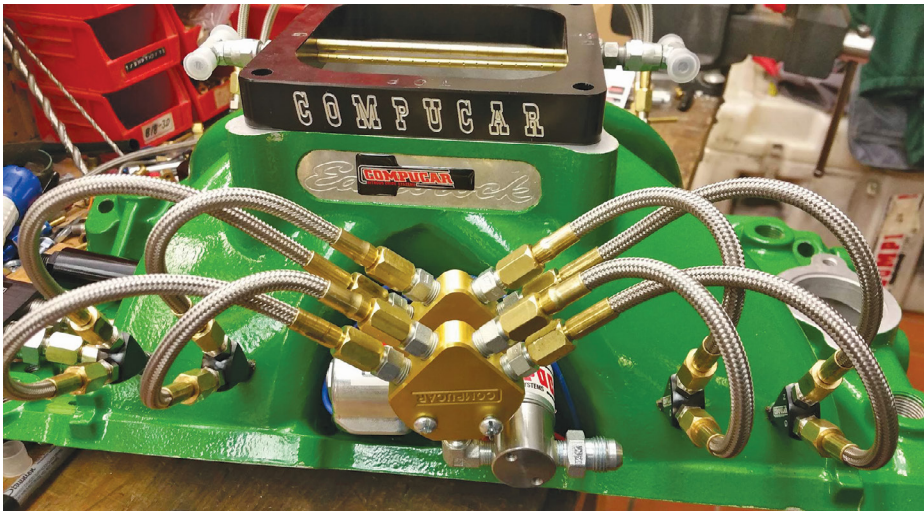
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Although nitrous systems have been in use for decades, installation and setup procedures have changed significantly over the years. Users should always follow manufacturer instructions carefully when setting up a system.

is unstable. You basically need a 5:1 ratio. Get away from that and you're not going to be able to tune accurately. You have a rich motor to begin with, and now you're trying to lean the nitrous system down to make up for it, and you could end up lifting rings.

"Very few motors are ever hurt because

***"I ALWAYS TELL PEOPLE THAT THEY CAN ADD IT BACK IN, BUT THEY CAN'T TAKE IT BACK OUT AFTER THE ENGINE IS BURNED UP."***

of lean conditions; most of them are hurt because they're too rich," Wrenn added. "Spraying 950 psi creates a vacuum behind that pressure, and that vacuum makes the carburetor draw more air and makes the jets run richer. So consider the cubic inches of the motor, the compression ratio, and what carburetor and intake the engine is running. That's going to tell us how much vacuum it's drawing, and then you can determine which jets are right for the combination. You've got to get that right first."

A general lack of understanding about how fuel pressure affects the tune in a wet system is a prevalent issue among racers running nitrous combinations, Flynn said,

but he also noted that it's a problem that's entirely avoidable today. "When running a wet system, you need to flow the fuel system to set the pressure because that has a huge impact on the tuning," he explained. "It's critical. A nitrous tune is based on a specific fuel pressure within a quarter of a PSI. If

that's far off from what the fuel pressure actually is, the correct tune is going to be completely different. So it could end up too rich, or too lean, and that could damage the engine. That's one of the nice things about dry nitrous systems: You don't have to worry about any of that because there's nothing there to put through the injectors."

### KEEPING UP ON THE UPKEEP

When it comes to maintenance issues, Sprague pointed to nitrous filters—or the potential lack thereof. "It's a mistake to think that removing the nitrous filter on the inlet fittings on the solenoid will provide more flow." A tune that starts to go rich is a good

indication that the filter is clogged and needs to be cleaned.

"It's going to be down on performance because it's restricting the nitrous flow, but the fuel flow is still there," Vasser said. "Racers will often pull fuel out over and over again before realizing that there's actually something causing a blockage. But not running a nitrous filter can lead to much bigger problems. Without a filter, that debris would be able to get underneath the solenoid and could potentially hang it open. If it leaks, what tends to happen is that it still lets nitrous by even after the system is turned off, and that's going to cause a backfire."

Even with a regularly maintained filter in the system, it's important to routinely check the pistons and solenoids. "They tend to mushroom over time, and you can end up with a leak through the piston, or the piston will actually start to restrict flow as it mushrooms out. At that point you're losing performance," Flynn said. "One of the leading causes of that damage is leaving pressure in the system. Closing the bottle and purging the pressure out after a run is the best thing to prevent that."

Improperly gapped spark plugs can also lead to problems. "A lot of racers take the spark plugs out of the box and just screw



Regular maintenance is crucial to safe, effective functioning of a nitrous system. Included in that is the solenoid inlet filter; racers sometimes ignore these filters or even remove them, often with disastrous consequences.



***“IT’S A MISTAKE TO THINK THAT REMOVING THE NITROUS FILTER ON THE INLET FITTINGS ON THE SOLENOID WILL PROVIDE MORE FLOW.”***

them into the motor, but the gap needs to be set correctly,” Wrenn said. “The gaps are set from the factory for a normal street car, not a racing application. They could be 40 thousandths, and they need to be between 22 and 25 thousandths. We have to close up that gap so the kernel will be small enough to get good ignition under high cylinder pressures. If the gap is too big, you have the potential to drop a cylinder going down the track, and that’s a good way to hydraulic a cylinder. It’s also important to have the right ignition system for the job. An MSD 6AL is great for a street car or light competition, but it’s probably not going to cut it in a purpose-

built racing application.”

When it comes to safety, Vasser said that bottle certification is something that everyone running nitrous oxide should take seriously. “Aluminum bottles are supposed to be recertified every five years, and carbon bottles are supposed to be recertified every three years,” he stated. “If someone comes to us with a bottle that’s out of certification, we won’t fill it. It’s a vessel that’s pressurized to 1,000 PSI. If that bottle explodes, it could kill you. The guys who you see at the track using torches to heat up bottles are really putting themselves in jeopardy. In cars where the bottle is mounted under glass—like in

a hatchback—sunlight can be magnified through the glass, and bottles that have been continuously heated over and over again like that can develop weak spots in the aluminum. It costs \$25 to have a bottle recertified, and I’d consider that money well spent.” **PRI**

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# TURN-BY-TURN **CONNECTIONS**



PLAYING A CRITICAL ROLE IN THE SUCCESS OF ANY RACE CAR, DRIVELINE TECHNOLOGY IS UNDER CONSTANT DEVELOPMENT, WITH INCREMENTAL IMPROVEMENTS STEADILY ADDING UP OVER TIME TO PRODUCE SPECTACULAR RESULTS.

By David Bellm



In the shadows of glory lies the stuff of success. While everyone dreams and drools at the sight of wicked V8s bristling with shiny turbos, snaky headers, and sparkly chrome, driveline components generally don't inspire that kind of lusty admiration.

They just do their job. If they do it right, no one thinks much about them. Races are won, champagne corks pop, and cars are loaded onto trailers without so much as a nod to the transmission, driveshaft, and rearend.

But on the way to the winner's circle, these unsung heroes get countless hours of attention, with some of the brightest minds in the business ruminating endlessly on how to improve them. More efficiency. Lighter weight. Lower cost. The list goes on and on.

To keep up with these developments, we called on leading driveline experts to find out what they're working on, what they see racers using, and what they predict for the future. Their input yielded 14 thought-provoking trends to watch in the year ahead.



## 1. TORQUE CONVERTER TUNING

With the increasing sophistication of modern drag cars, racers are now seeing a greater need to quickly and freely tailor torque converters for different tracks, operating conditions, and car setups. Bolt-together torque converters allow them to access the inner workings of the converter and switch out components without having to send it to the manufacturer or bring it to a specialist's shop.

Although bolt-together torque converters aren't new—they were introduced more than three decades ago—most racers have so far been reluctant to delve into the complexities of tuning them. Manufacturers are now responding to this need with improved bolt-together torque converters, along with increased tech support to help racers grapple with the finer points of choosing stators, turbines, and other pieces.

"Torque converters are like black magic," said Krista Baldwin of Wharton Automotive Group, Anaheim, California, which includes McLeod Racing, FTI Performance, and Silver Sport Transmissions. "They're a little bit more difficult than some other systems in a car. But a racer should be able to tune the converter for specific conditions. With our new Gen 3 XPM torque converter, a racer can say, 'Hey,

I need my torque converter like this, because I have this engine combination this weekend.' And we're able to help change it on the fly. Our techs are racers. They've seen different conditions themselves, so they're able to accurately say, 'Okay, this is the baseline where you need to start.'"

## 2. BETTER UNIVERSAL JOINTS

Universal joints have always been one of the most vulnerable parts in drivelines, particularly as horsepower climbs to stratospheric levels in many racing series. To combat the problem, manufacturers are working on improvements in universal-joint design and materials.

"It's crazy, because it's been more than 20 years since anyone's done anything different with U-joints," observed Mike Bennett of Dynamic Drivelines, Des Moines, Iowa. "And that's always been the weak link. So we've definitely stepped up the game on universal joints. Within the last year, we've worked with Neapco as our supplier. We have a new U-joint coming out that's one of the best I've ever seen. We changed the material in it, and we did some different stuff with the way the body was designed."

Universal joints have long been a weak link in drivelines. "It's been more than 20 years since anyone's done anything different," said our source at Dynamic Drivelines, which has teamed with Neapco to develop a stronger design.

## 3. CONSTANT-VELOCITY (CV) JOINTS FOR SPRINT CARS

Sprint cars are somewhat unique in that they use a torque-tube setup instead of an open driveline. They also endure levels of punishment that many other cars don't. In response, AL Driveline in East Berlin, Pennsylvania, has taken the bold step of introducing constant-velocity joints that replace universal joints on sprint cars.

"You cannot fake the science as to how a U-joint functions," explained Aaron Long of AL Driveline. "As soon as it sees any articulation, the output speed is varying from the input speed, so it's really beating itself to death from the first time it's used. That's why there are no universal joints in front-wheel-drive vehicles. But CV joints don't care what angle they're at.

"I feel you're looking at the future of sprint





Sprint cars use a torque-tube setup that puts unique stresses on components. AL Driveline's constant-velocity joints are designed to run smoother and last longer than universal joints in this configuration.

car drivetrain technology," continued Long. "For sure there's never been a smoother system ever created for sprint cars. I gave the first one to a customer to try in 2018, and that original CV joint is still going. It'll run this year with a 410 team here in central Pennsylvania. It's approaching 150 races."

#### 4. CARBON-FIBER DRIVESHAFTS

Steel and other materials will probably always have a place in driveshaft construction, but carbon fiber is steadily gaining popularity. Carbon-fiber driveshafts offer the advantage of light weight, along with greater safety because of their tendency to splinter into relatively harmless fragments if they fail.

For this reason, some sources say more rule makers should make carbon-fiber driveshafts mandatory. "I keep beating on this, but I'd like to see the industry do more carbon fiber, just because of the safety factor," said Dynamic Drivelines' Bennett. "I think we're getting closer. A lot of the sanctioning bodies are figuring it out. The

cost has always been an issue, too. If we can keep the cost down on them, we'll have a better shot of getting them into everything."

#### 5. BIG-DIAMETER TITANIUM SPRINT CAR DRIVESHAFTS

Titanium driveshafts are a popular way to save weight on sprint cars, and they're certainly nothing new. But now, AL Driveline has introduced a larger diameter version, which Long said reduces wear on universal joints and other components.

"The problem with titanium is that it's so flexible," he explained. "Using a small-diameter titanium driveshaft with the way these 410 engines run these days produces a significant amount of whipping effect. There have been times where we can actually see rub marks where a traditional standard-diameter driveshaft will rub the inside of the torque tube.

"When the driveshaft whips like a jump rope, it induces fatigue into not only the base flange that holds the U-joint to the engine, but also to the female drive yoke," added Long. "This is especially true at bigger race tracks, where you have a lot of chassis flex. Our driveshaft design increases the longevity of traditional universal joints by minimizing the amount of driveshaft whipping effects."

#### 6. ALUMINUM SPRINT CAR DRIVESHAFTS

Alongside more established titanium options, aluminum driveshafts appear to also be gaining popularity in sprint cars and open wheel cars in general, by offering similarly light weight at a much lower cost than titanium.

"A lot of the industry at this point has gravitated toward fabricated titanium driveshafts," explained Dave Ely of Diversified Machine, Lancaster, Pennsylvania. "But those are in the neighborhood of \$1,500 each. An aluminum

driveshaft from us with the same diameter is only \$450 to \$500, and they hold up great.

"In lower horsepower cars we're able to run standard-diameter driveshafts similar to what a steel driveshaft would be, with no issues whatsoever," continued Ely. "They are half the weight, and they can be run for a long time. We tell people to swap out after 30 races because they're relatively inexpensive. But people will run them in excess of 60 races, and they still look brand new. I could literally put them back in the wrapper and on the shelf."

#### 7. BOLT-ON-TUBE QUICK-CHANGE REAR ENDS

Quick-change rearends typically have press-fit axle tubes that are difficult and time-consuming to remove. But Diversified Machine somewhat recently introduced a quick-change rearend assembly that uses bolt-on axle tubes instead. The design is said to be stronger, more precisely aligned, and far easier to work on.

"The design is about 70% stronger than a conventional style quick-change rear," explained Ely. "That's a huge benefit. The way it's designed, it has perfect alignment. Plus, the side bells are stronger, and the tubes can be changed out much quicker. Before, even for a skilled guy to replace a tube was a six- or eight-hour project. Now, that's become a one-hour project. It's a dry process, so there's no need to drain the oil out of the rear."

As an added benefit, the components of these bolt-together units can be packed in separate boxes that can be shipped via parcel delivery services such as UPS instead of slower, more expensive, and far less convenient truck freight shipping.

#### 8. OVERDRIVE

With the popularity of Drag Week and other combination street and race events, many racers are now adding overdrive capability to their cars to handle long trips at highway speeds with gear ratios that are optimized for competition.

One of the most popular ways to add overdrive is with a Gear Vendors unit, a separate gearbox that mounts behind the existing transmission. They're robust enough

*"INCORPORATING THE OVERDRIVE RIGHT IN THE TRANSMISSION MAKES IT A LOT SIMPLER."*





Diversified Machine's bolt-on-tube quick-change rearends are designed for faster, easier servicing than those with traditional press-fit axle tubes. These units are also stronger and more precisely aligned, according to a company source.

to handle thousands of horsepower, and they can be fitted to practically any combination of car, engine, and transmission.

But our sources note that while this approach has proven effective, many racers are looking for lighter, more compact, self-contained solutions for adding overdrive to a drag car. "Incorporating the overdrive right in the transmission makes it a lot simpler," said Rusty Sampsel of TCI Automotive, Ashland, Mississippi.

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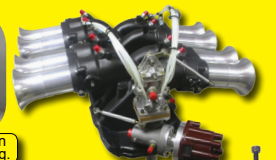
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## “THERE’S A TREND BACK TO MANUAL TRANSMISSION.”

For this, many racers are starting to look at the General Motors 4L80E transmission, which is essentially a GM Turbo 400 with overdrive and electronic control. While at this point the 4L80E isn’t capable of handling the massive power that a race-prepped Turbo 400 or Powerglide can, the 4L80E nonetheless can be fortified to take more than 1,000 horsepower, which is adequate for many dual-purpose machines.

In addition, the 4L80E has a torque-converter clutch, which allows lockup at higher speeds. “Racers want a higher-stall-speed converter to get the motor up into its power range to launch better,” noted Sampsel. “But in older transmission designs, they’re stuck with that loose converter at the

top end of the track. Electronic transmissions like the 4L80E have a clutch built into them that can actually lock up the converter like a manual transmission.”

### 9. TRANSAXLES IN STOCK CARS

To see one of the biggest changes in race-car drivelines of late, simply turn on the TV on Sunday afternoon and watch the 40-car NASCAR pack slug it out. This year, the top stock-car sanctioning body has done away with the traditional four-speed, H-shift-pattern transmission and separate rear differential configuration it has used for ages.

Now, all NASCAR Cup cars use a five-speed, sequential-shift transaxle design built by Xtrac. It’s a radical move that, along with other changes introduced this year, will significantly alter how these cars are set up and raced.

It also raises an interesting question: Will NASCAR’s introduction of a transaxle have

any effect on other stock car series? It’s hard to say for sure. While we can assume that most stock car series aren’t eager for such a drastic change, the stock car community as a whole has always kept a close eye on the decisions that flow forth from Daytona.

### 10. MANUAL TRANSMISSIONS

Although automatic transmissions are still the unrivaled standard for most all-out drag cars, manual transmissions are rapidly gaining popularity with the rise of autocross, track day, pro-touring, and dual-purpose drag events. Accordingly, manufacturers are introducing a wide range of new manual transmissions and the necessary parts to swap them into various cars.

Wharton Automotive Group’s Silver Sport Transmission brand specializes in building complete installation kits around the popular Tremec line of manual transmissions. “I definitely think there’s a trend back to manual transmission,” said Baldwin. “We’ve

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had some of our best years lately, which is a true testament that people really want to experience that feeling again. It's what people are craving."

Among the most popular manual transmissions being swapped into older vehicles now is Tremec's new TKX 5-speed. It can handle up to 600 lb.-ft. of torque and features a compact, rounded case that makes it easier to fit into existing transmission tunnels.

### 11. DUAL-DISC CLUTCHES

High-horsepower manual transmission cars traditionally have required clutches with massive spring pressure to prevent slippage. But that usually translates to herculean pedal force, making them a chore to drive on the street. Dual-disc clutches, by contrast, are designed to handle big horsepower and yet still have a relatively light pedal feel, making them increasingly popular for high-horsepower, dual-purpose cars.

"Having a 2,000-horsepower car now isn't uncommon," observed Baldwin. "But if you're going to drive it on the street, you don't want to have to push down on a super hard clutch. So we always recommend a twin-disc unit for that kind of power. When they move from single-disc to twin-disc, a lot of people say, 'There's no way this is the right clutch. It's way lighter than what my single-disc clutch was.'"

### 12. LATE-MODEL MUSCLE CARS

Although the popularity of Camaros, Challengers, Mustangs, and other late-model muscle cars certainly isn't anything new at this point, one of our sources predicts that this market is going to get even hotter. Used examples of these cars are now dropping into a price range that's affordable to average working-class racers. Many of those buyers will probably be more willing than the original owners to heavily modify them and



External overdrive units have become popular for dual-purpose drag cars, but many racers are now instead preferring to have overdrive capability in the transmission itself, noted our source at TCI Automotive.

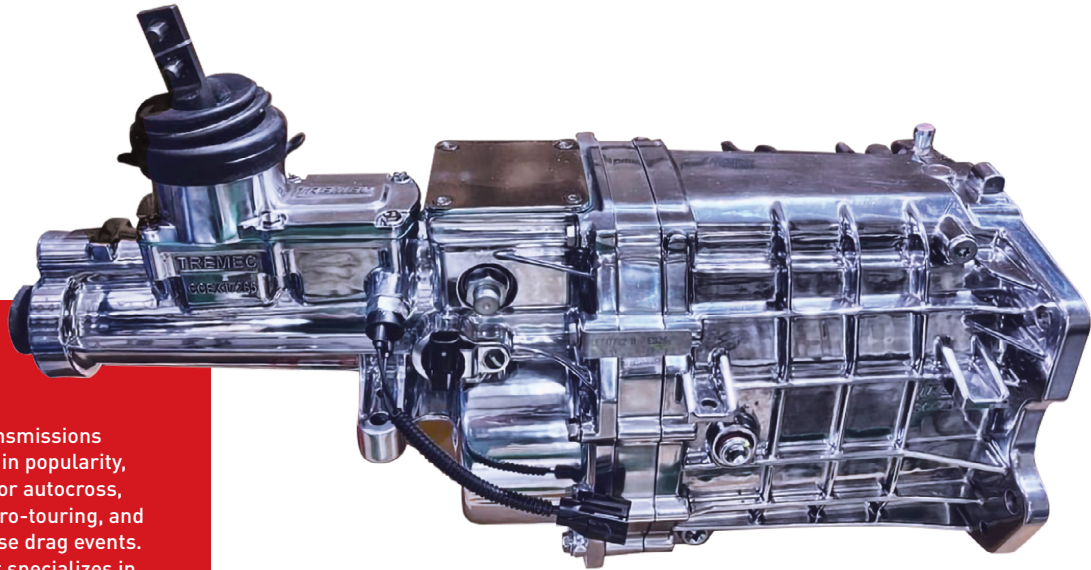
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Manual transmissions are gaining in popularity, especially for autocross, track day, pro-touring, and dual-purpose drag events. Silver Sport specializes in kits for installing Tremec transmissions, like the new TKX 5-speed shown here.

drive them hard.

"These cars are getting to the age now where they're in the hands of their second and third owner," said TCI's Sampsel. "This brings challenges for us. They're kind of stuck with whatever drivetrain is in there—they can't retrofit much. So we have to step up and try to accommodate those types of

guys. They're pushing the envelope from the engine standpoint. You have to start looking at the rest of the driveline because they'll start finding the weak spots."

### 13. EVs

Love 'em or hate 'em, EVs are here, and they're probably only going to get more

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**“YOU CAN STILL HAVE THAT THIRD-PEDAL FUN IN AN ELECTRIC VEHICLE.”**

popular in motorsports. Their smooth, silent operation leaves some racers feeling as cold as a popsicle on Pluto, but no one can dispute the huge performance potential of EVs. Easily capable of topping 1,000 horsepower, an EV's burly output is comparable to that of V8s with power adders. And, just like internal-combustion race cars, such brutal force punishes driveline components.

Many aftermarket manufacturers see exciting possibilities in the EV market for stronger components, as well as for ways to add greater satisfaction to the overall driving experience. “Last year at SEMA we sponsored an electric vehicle chassis,”

said Baldwin. “We mated it with a Tremec transmission and a McLeod clutch. We want to showcase that you can still have that third-pedal fun in an electric vehicle.”

**14. GRADUAL EVOLUTION**

While we always like to report big, dramatic breakthroughs, our sources for the most part emphasized the evolutionary nature of driveline development. The current state of driveline technology is largely the result of endless tiny improvements, one built on the other, which over time can yield radical transformations.

“Racers are always hoping there's something out there that's going to rotate the earth,” observed Ely of Diversified Machine. “At this point, though, it's a lot of very minor improvements. I'm not saying there isn't anything new out there—we're always looking. But it's a full-circle game. Most times, racers come right back to normal stuff.” **PRI**

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# MEMBER CHECK-IN

## DISORGANIZED GRIME

Understanding that entering a motorsports event can be intimidating for the uninitiated, this particular team's mission is to provide a place where "everyone knows your name."

By Jim Donnelly

**M**otorsports is competition and, frequently, much more than that. After a long tow and endless grunt work on the car, the pit area at a race offers an opportunity to socialize, trade tech tips, kick back around the grill, and just enjoy one's peers. It's a community thing, a world that John Muhr has occupied since he first strapped into a drag car more than three decades ago.

Muhr and his wife Cheryl live in Littleton, Colorado, and have an unfolding plan that they believe will make it easier for racers to find relaxation, and not just the normal blend of frustration and exhilaration that usually permeates any race meet. Their effort to help racers has recently been rebranded, whimsically calling itself Disorganized Grime, and has more recently joined the ranks of PRI as a Founding Member. What is it? Disorganized Grime is neither slapdash nor dirty, but instead presents a variety of strategies to help racers unwind, make friends, and swap ideas.

"Disorganized Grime is simply a racing team that was organized in 2012, because there were many racers who were just standing at the fence and didn't have the courage to jump into the swimming pool," Muhr explained. "We formed it so they would have a place to go, and to have a medium where they could share information about becoming branded drag racers, and the chance to join a team competition. That team has flourished like a wildfire. We don't have any services, per se. We have a team, and through that we offer free apparel with three new cars on the shirts every year, we sponsor racers, and we're branching out this year into sponsoring circle track."

As the Muhrs envision it, Disorganized Grime's team concept essentially functions as an escalator for people who are seriously interested in getting involved in motorsports as competitors, but still haven't made the all-important commitment of time or money.



"We're basically like Cheers, the bar. We're a place where anybody can go, and we'll know your name. We'll put you in our club, and then you can join our team competition, which is held at a local track, of which we've so far had three of them around Denver."

Disorganized Grime has a private Facebook page to attract interested parties, which Cheryl plans to make public for wider potential participation. Right now, its team competitions generally follow a drag racing format. "We've presented it pretty vigorously," Muhr said. "It allows anybody to become a team participant, whether they have a 22-second minivan or a 10-second hotshot street car. They're able to join the team and take part.

"Our mandate is to welcome those new racers in," Muhr continued. "Additionally, we do what are called drag-and-drive events, which started for us in Denver during Rocky Mountain Race Week. Right now we've expanded to Bradenton Motorsports Park in Florida, where we're part of Sick Week 2022."

That underscores the reality that Disorganized Grime has catered to the straight-line nation up to this point, but that's

Disorganized Grime is a low-impact social network that provides opportunities to compete in race cars that are less sophisticated—and costly—than the pro categories, and with no fees involved. It's run by sportsman racers John Muhr, seen here, and his wife Cheryl.







A typical Disorganized Grime event, which often takes place at the team's home track of Bandimere Speedway, involves elimination-style racing from mid-afternoon until the track closes for the night. After the races, the club meets for dinner and to hand out awards and apparel. Their concept has since expanded into drag-and-drive events, which usually last a week to 10 days.

currently undergoing a change. One of the team's newest sponsored drivers is a two-time Bandolero champion who's looking to step up to Legends car competition.

Racers, or prospective racers, interested in hooking up with Disorganized Grime will have the opportunity to connect with the team through the public Facebook page that Cheryl expected to be live by the time this article is published. The Muhrs promise a unique and rewarding social experience for those who get involved.

"There are a number of other such clubs and organizations," Muhr said. "Ours happens to be free, ours happens to have a medium for sharing ideas, racing theory, and racing stories. There's no membership fee. All of our apparel and dinners are free. Those are some of the enticements to join. It's a very social club. We do have competitions that have Stanley Cup-sized trophies. We have some very serious racers in our group, and they tend to foster the brand-new, more social racers."

The operation is entirely funded by the three founding partners: Muhr and his wife Cheryl, along with his brother Mike.

Among current members are Chris Vang, a Pro Stock tuner and Super Comp driver; Derek Kramer with American Ethanol; and multiple track champion Rick Schillereff. So is the Thorpe family, which has been recognized as Cornerstone racers by Bandimere Speedway outside Denver, consisting of parents Rich and Sara plus sons Cameron and Tyler. Total current membership consists of 40 drivers and

another 40 members that Muhr describes as the drivers' cheering section.

A typical event, which frequently is held at the team's home track, Bandimere, involves elimination-style racing from midafternoon until the track shuts down for the night. After the races, the club meets for dinner and to hand out awards and apparel. This happens about seven times annually. Perhaps more ambitiously, Disorganized Grime also presents drag-and-drive events, which typically last a week to 10 days. Three such gatherings have taken place to date. One recent outing went from Denver to Kearney Raceway in neighboring Nebraska, then to Great Bend, Kansas, and headed back into Colorado through Pueblo. The tour raced at five different tracks over five days. Trailers are banned: All participating drag cars have to be street legal.

Ultimately, Disorganized Grime is a low-impact social network that also provides opportunities to compete in race cars that are less sophisticated—and costly—than the pro categories will allow, with no fees involved. And it's run by sportsman racers: John Muhr, who runs a property management firm in Denver, has a 1978 Malibu running in Sportsman and Pro ET, and Cheryl has three cars, including a 1967 Impala in Pro ET.

"I love the game of chess that drag racing is," he said. "We do this to pay back for 37 years of racing that my wife and I have enjoyed. Many people have done very nice things for us, and this is our payback." **PRI**

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## PROPER STEERING SETUP FOR RACE WEEKEND

Ensure driver comfort and safety with these tips on how to properly install a steering column.

By Kelly Tuttle

When situating a steering column in a race car, driver comfort is of the utmost importance, as the driver must feel comfortable in their seat to drive effectively and safely. Correct measurements are the most important factors in a steering column installation to ensure the highest level of comfort, and below we will go through the measuring process to properly mount the steering column.

### PREPARATION

When preparing to measure the steering column setup, be sure to use the driver's seat that will be installed in the car. The seat needs to be in place to determine steering wheel, shifter, and pedal position, as these

all relate to each other and impact the driver's comfort. It is also important to have the steering wheel and adapter or quick-release steering hub that will be used on the column.

### CENTERING AND ADJUSTING

Once the seat is in place and the location of the engine, cylinder head, headers, and transmission are determined, make sure the steering wheel is centered to the seat. Installing the column offset or at an angle will make it feel awkward and uncomfortable. With the column centered, adjust the seat forward or back for optimal pedal and shifter position. Then, adjust the column (with an adapter or quick-release steering hub) and steering wheel so that the driver's arms are in a relaxed, comfortable

position. Some columns are made in a set length, while others offer extra shaft length so the driver can trim it to the proper length after determining the correct position. For these kinds of columns, it's at this point where the shaft is trimmed to the desired length and the adapter or quick-release steering hub is welded in place.

Once all the positions are determined, next is the installation of the column drop/mounts. A retrofit column made specifically for a car's year, make, and model should bolt right into place. With a universal-fit column, however, place the drop/mount onto the column and adjust the drop/mount's position to the factory mount location. The drop/mounts should fit snugly to the underside of the dash with no wobbling or vibration. The lower mounts should be stable and able to fit the angle of the firewall where the column will pass through. If the car has a floor-mounted

brake or clutch, make sure there is enough clearance for the column. Once the firewall mount is in place and secured, it's vital to make sure that this mount is sealed tightly to prevent exhaust fumes, heat, dirt, and water from entering the interior.

### MEASURING TO FIND THE RIGHT LENGTH

For those who do not have the steering wheel and adapter or quick-release steering hub but are trying to measure to find the right column length, the steering column and wheel assembly can be simulated with an aluminum pie tin or large paper plate and a three-foot wooden dowel. Add between 1 1/2 and 3 inches beyond



Steering columns are available either in a fixed shaft length, above, or extra shaft length, below, which allows the driver to trim the shaft to the proper length after determining the most comfortable position for driving the race car. Photos courtesy of IDIDIT and Stephanie Davies Bardekoff.



**WHEN PREPARING TO MEASURE THE STEERING COLUMN SETUP, BE SURE TO USE THE DRIVER'S SEAT THAT WILL BE INSTALLED IN THE CAR.**

the firewall/floor if using a steering box. If using a rack, the column can go as far as 5 inches into the engine compartment. Watch for clearance. First, tack the tin or plate to the dowel (steering wheel to column), then position the driver comfortably in the seat while holding the dowel system in place. Have someone measure and mark the essential dimensions: overall length and the distance between the center of the column and the bottom of the dash. Do not forget to mark the point where the column will pass into the engine compartment and the centerline of the driver's body and seat, as they are also important measurements. When using this method, remember that



When installing the steering column, first center it, then adjust the seat forward or backward for optimal pedal and shifter position for comfort. Next, adjust the column—with an adapter or quick-release steering hub—and steering wheel so that the driver's arms are in a relaxed, comfortable position.



Proper measuring is the most important factor to ensure driver comfort and safety when installing a complete steering column assembly. Here is an installed column with the original plastic shrouding and center ring of a quick-release steering hub attached.

the wheel and adapter or quick-release steering hub will add length to the column. Most aftermarket steering wheels will add 3–6 inches from the gripping surface of the wheel to the adapter, and most aftermarket adapters or quick-release steering hubs will add another 2–5 inches from the steering wheel to the top of the outer housing of the steering column. Make sure to allow for these additions and mark the dowel accordingly.

For safety consideration, utilize a collapsible steering column and/or shafting. But, in short, there is no right or wrong setup for a steering column assembly as long as it is installed safely and securely, and the driver is in the most comfortable position possible. After all, a happy and relaxed driver is most likely to make it to the podium! **PRI**

*Kelly Tuttle is the Marketing Manager for IDIDIT, LLC in Tecumseh, Michigan, where she oversees all aspects of the company's marketing efforts. She's been involved with marketing in the automotive industry for the past six years, but has had a passion for all things motorsports—especially those that involve speed on both two and four wheels—since she was a young girl.*

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# ADVOCACY CORNER

Tracking legal, legislative, and regulatory developments impacting the racing and performance industry.

Edited by Laura Pitts

PRI race track ambassador Tom Deery and the Washington, DC-based advocacy team work continuously to protect tracks, sanctioning bodies, and motorsports businesses around the nation. This month, we are tracking several initiatives, including PRI's new Membership headquarters in Speedway, Indiana, an update on supporters for the critical RPM Act, a lawmaker's recent visit to a motorsports retail superstore, a dedicated "Motorsports Day" in West Virginia, and more.

## PRI SET TO OPEN NEW MEMBERSHIP HQ

PRI's new Membership headquarters in Speedway, Indiana, will open its doors later this month—ahead of the 106th running of the Indy 500. PRI will celebrate the occasion with a ribbon-cutting ceremony that will see the unveiling of renovations and tours of the 42,500-square-foot facility that will serve as the home for PRI Membership.

The building is within walking distance of the famed Indianapolis Motor Speedway and also houses Bryan Herta Autosport's IMSA and SRO multi-team program, and a retail location for helmet and accessories manufacturer Bell Helmets.

"The building was formerly an IndyCar race team facility, and we wanted to keep racing in the building," said PRI General Manager Jim Liaw.

The Membership HQ includes spaces and programs dedicated to supporting motorsports businesses and track operators, such as live and virtual education opportunities that will expand world-class PRI Education programming from the PRI Trade Show into a year-round endeavor. In addition, there are plans to open a "Content Factory," a diverse multimedia facility for photo and video production with car lifts for builds and technical videos, as well as a podcast studio.

"PRI is dedicated to building, promoting, and protecting the racing community. We

want to continue to expand on the PRI Membership promise to unite the industry and remain a strong voice for motorsports. The new PRI Membership headquarters allows us to do that," Liaw said.

More details about this exciting new chapter for PRI will be announced throughout the year leading up to the 2022 PRI Trade Show in downtown Indianapolis, December 8–10.

For more information, contact [membership@performanceracing.com](mailto:membership@performanceracing.com).

## RPM ACT ADDS MORE KEY SUPPORTERS IN CONGRESS

Support for the bipartisan Recognizing the Protection of Motorsports Act (RPM Act) continues to expand as members

of Congress receive an outpouring of support for the bill from racers and the motorsports parts industry. Several members of Congress have recently agreed to co-sponsor the RPM Act, H.R. 3281 and S. 2736, including Sen. Catherine Cortez Masto (D-NV), Sen. Marco Rubio (R-FL), Rep. Sean Patrick Maloney (D-NY), and Rep. Garret Graves (R-LA). Some 150 federal lawmakers are currently co-sponsoring the RPM Act, making it one of the most bipartisan bills introduced in the 2021–2022 session of Congress.

"The racing community has sent members of Congress over 1.5 million letters in the last year, which has been a driving factor in getting lawmakers to publicly support the RPM Act by serving as co-sponsors. It is imperative that members of Congress continue to hear from their constituents about the importance of supporting the RPM Act and using their political capital to pass the bill. The future of racing and tens of thousands of motorsports parts jobs are on the line," said Eric Snyder, PRI's Director of Congressional



New RPM Act co-sponsors include, from left to right, Rep. Garret Graves (R-LA), Rep. Sean Patrick Maloney (D-NY), Sen. Marco Rubio (R-FL), and Sen. Catherine Cortez Masto (D-NV).



## *“CONGRESS MUST PASS THE RPM ACT IN 2022 TO PROTECT THIS GREAT AMERICAN TRADITION THAT CREATES ECONOMIC OPPORTUNITY AND PROVIDES ENTERTAINMENT IN COMMUNITIES ACROSS THE COUNTRY.”*

Affairs. “Congress must pass the RPM Act in 2022 to protect this great American tradition that creates economic opportunity and provides entertainment in communities across the country.”

PRI’s government affairs staff recently had a chance to catch up with Rep. Maloney to discuss the RPM Act. Congressman Maloney represents New York’s 18th district in the US House of Representatives, as his Hudson River Valley district is home to Orange County Fair Speedway in Middletown, New York, and a passionate racing community.

“Car racing is a treasured American pastime that extends from Daytona Beach down to the hundreds of local tracks where hobbyists and professionals alike work on their cars and prepare for race day,” said Rep. Maloney. “I am proud to support the RPM Act, a critical bill that will ensure well-intentioned policies to protect the planet don’t inadvertently undermine a sport beloved by so many folks here in the Hudson Valley, and all across the country.”

The RPM Act must be enacted into law to guarantee your right to modify street cars, trucks, and motorcycles into dedicated race vehicles, and ensure the industry can offer parts that enable racers to compete. It is imperative that lawmakers continue to be reminded of the importance of passing the RPM Act, as we need your help now more than ever.

Following is a list of actions you can take right now to help pass the RPM Act:

- Call or send a letter to your lawmakers at: [saveourracecars.com](http://saveourracecars.com). A letter has already been drafted. It takes less than a minute.
- Sign a letter to your lawmakers on company letterhead. Email [erics@sema.org](mailto:erics@sema.org) for a template and more information.
- Post about the RPM Act on your

company’s social-media accounts using the toolkit of digital assets, or pass out a flyer at your business or events.

- Learn more about PRI’s Political Action Committee (Performance Racing PAC) at [performanceracing.com/pac](http://performanceracing.com/pac). Performance Racing PAC allows PRI members to support the lawmakers that stand up for racing in Washington.

For more details, contact Eric Snyder at [erics@sema.org](mailto:erics@sema.org).

### **REP. ELLZEY VISITS SUMMIT RACING IN TEXAS**

US Representative Jake Ellzey (R-TX), who won a 2021 special election to represent Texas’ 6th Congressional District in Congress, recently visited Summit Racing Equipment in Arlington, Texas, for a tour of its retail superstore, order fulfillment center, and distribution center, which totals nearly one million square feet.

Organized by the PRI and SEMA advocacy team, Rep. Ellzey’s visit provided the chance to learn more about the specialty automotive aftermarket and the industry’s role in Texas’ 6th Congressional District, which is located to the south and west of Dallas and includes parts of Fort Worth and Arlington.

While touring the superstore, the Congressman spoke fondly of the ’67 Mustang he once owned, and aspirations to one day restore a vintage Ford truck that’s been in his family for over 40 years.

“The tour of Summit Racing was nothing short of remarkable,” said Rep. Ellzey. “You

all have a tremendous facility, but what was most impressive was all of the employees. The afternoon I spent there, I could tell that everyone cared about their job, each other, and the customer. I am glad that Summit Racing is in our district. It is something we can all be proud of, and I look forward to rebuilding my ’79 F-150 with a little bit of help.”

The Congressman is a graduate of the US Naval Academy, and throughout his 20-year Naval career, he flew H-60 helicopters, F-14 Tomcats, F/A-18 Hornets, and Super Hornets in defense of our nation. He currently serves as a member of the US House Committees on Veterans’ Affairs and Science, Space, and Technology.

Upon learning about the Recognizing the Protection of Motorsports Act (RPM Act), Congressman Ellzey agreed to co-sponsor the bill and is passionate about enacting the bill into law given the importance of the issue to his constituents.

“Thank you to SEMA/PRI for organizing and participating in the meeting, and to Rep. Ellzey for taking the time to visit and get to know our company, and for reinforcing his support of the RPM Act. Supporting this bill helps protect the livelihood of our company and employees, our business partners, and race tracks throughout the country,” said Dave Ritchey, Summit Racing’s manager of Phone Sales.

“One of the best ways to stand up for racing and the motorsports parts industry is to get to know your state and federal lawmakers,” noted Eric Snyder, PRI’s Director of Congressional Affairs. “The first step in developing a relationship with your lawmakers is to introduce yourself and invite them to your business. PRI staff will make this process painless, as we are ready to assist. If you’d like to host your elected officials, please email me. We will extend an invitation to lawmakers on your behalf and facilitate the visit.”

For more information on planning your

## *“ONE OF THE BEST WAYS TO STAND UP FOR RACING AND THE MOTORSPORTS PARTS INDUSTRY IS TO GET TO KNOW YOUR STATE AND FEDERAL LAWMAKERS.”*



own Congressional District site visit, please contact Snyder at erics@sema.org.

### WV HOSTS SUCCESSFUL 'MOTORSPORTS DAY' AT STATE CAPITOL

A number of area motorsports venues, manufacturers, and businesses attended a first-ever "West Virginia Motorsports Day" at Charleston's State Capitol in March. PRI and SEMA representatives participated in the event, which was created to show lawmakers the impact that motorsports has on commerce and tourism in the state. Participants also included sanctioning bodies like American All-Star Series, US Motorsports Association, and the Red Clay Series, and tracks including Beckley Motorsports Park, I-77 Speedway, Summit Motorsports Park, Pennsboro Speedway, Ona Speedway, Tri-River Dragway, and Tyler County Speedway.

A vendor display of motorsports

*THIS FIRST-OF-ITS-KIND EVENT DEMONSTRATED THE PASSION AND STRENGTH OF THE MOTORSPORTS INDUSTRY IN WEST VIRGINIA. BEING ABLE TO WORK TOGETHER TOWARD COMMON GOALS WILL PAY HUGE DIVIDENDS FOR THE INDUSTRY AS IT CONSIDERS LEGISLATIVE ISSUES IN THE FUTURE.*


manufacturers and businesses in the State Capitol's rotunda, and a show of powerful race cars—including dirt late models, modifieds, and dragsters—in front of the Capitol preceded a meeting organized by the West Virginia Motorsports Committee. Among topics covered were issues facing the industry such as noise ordinances, along with goals for the 2023 legislative session, including the reintroduction of legislation incentivizing the construction of

new race tracks.

The West Virginia Motorsports Committee was created by West Virginia Governor James Conley Justice in 2021 to promote motorsports in the state. Current members include Acting Chair Laura Bowman of Summit Point Motorsports Park in Summit Point, West Virginia; John Fekete of Hatfield McCoy Trails in Mingo County, West Virginia; Joseph Rush of the American Crate All Star Series based in the Southeast; Tim

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The first-ever West Virginia Motorsports Day was held in March and organized by the West Virginia Motorsports Committee.

in their state can contact Laura Bowman with Xator/Summit Point Motorsports Park at [laura.bowman@xatorcorp.com](mailto:laura.bowman@xatorcorp.com).

In related state news, The West Virginia legislature failed to pass PRI-supported legislation in 2022 prior to the adjournment of the session, including:

- Legislation (S.B. 467) to aid and incentivize the construction of motorsports complexes. The Senate Economic Development Committee failed to advance the bill.

- Legislation (S.B. 602) to protect motorsports venues which have been in operation for more than one year from nuisance claims. The Senate Judiciary Committee failed to advance the bill.

“Although these bills may not have passed in 2022, given the show of strength at the West Virginia Motorsports Day, there is great optimism that we will be able to get over the finish line in 2023,” Robinson said. **PRI**

Cotter of Grand National Cross Country (GNCC) based in Morgantown, West Virginia; and Chris Pierce of 304 Speedway in Princeton, West Virginia. In addition, West Virginia State Senator Mark Maynard, Edwin Pardue of Summit Point Motorsports Park, Eric Barber, and Al Harshbarger are honorable members.

the passion and strength of the motorsports industry in West Virginia. Being able to work together toward common goals will pay huge dividends for the industry as it considers legislative issues in the future,” said Christian Robinson, Director, State Government Affairs & SEMA PAC.

Racing businesses interested in more information about a motorsports committee

“This first-of-its-kind event demonstrated

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# INDUSTRY NEWS

## PRIORITY DEADLINE FOR 2022 PRI TRADE SHOW EXHIBIT SPACE APPROACHING

Applications to exhibit at the 2022 Performance Racing Industry (PRI) Trade Show are now available at [performanceracing.com/exhibit](http://performanceracing.com/exhibit). The event, taking place December 8–10, in Indianapolis, Indiana, is where winning racers, teams, and racing-related businesses go to network and discover the latest motorsports trends, products, and technology.

For three days, the Indiana Convention Center and Lucas Oil Stadium are transformed into the mecca for all things racing and performance: engine parts, transmissions, power adders, suspension components, shop machinery, trailers, and much more.

“Everyone from the racing industry attends the PRI Show each year,” said PRI President Dr. Jamie Meyer. “With industry icons, professional racers, team owners, sanctioning bodies, as well as grassroots race teams gathered under one roof, it’s a can’t-miss event for anyone in the

motorsports business.”

As the most influential business event in the motorsports industry, the 2021 PRI Show brought together more than 50,000 attendees, including buyers, media, influencers, enthusiasts, and professionals.

The deadline to submit an exhibit space rental application and deposit—and be included in the initial plotting of the 2022 PRI Show floor plan—is Friday, May 27. For more information, visit [performanceracing.com/exhibit](http://performanceracing.com/exhibit).



Submit a booth application by May 27 to be included in the initial plotting of the 2022 PRI Show floor plan.

## RJ DE VERA JOINS SEMA AS VP OF MARKETING

SEMA (Specialty Equipment Market Association)—the parent company of PRI and host of the aftermarket industry’s premier products trade event, the SEMA Show—has named RJ de Vera as its new vice president of marketing.

De Vera comes to SEMA after 12 years at 3M, a Fortune 100 company, including the last seven as the global leader of digital marketing and public relations for Meguiar’s Car Care brand.

In his new role, de Vera will be developing and implementing a modernized multi-channel marketing strategy for SEMA with a digital-first focus to expand brand awareness and build customer affinity for SEMA and its members.



RJ de Vera

## RACE WINNING BRANDS ACQUIRES PAC RACING SPRINGS

Race Winning Brands, Inc. (RWB) has announced the acquisition of PAC Racing Springs, a manufacturer of high-performance valve springs for the automotive and powersports performance and racing aftermarket.

PAC represents the ninth add-on acquisition for Mentor, Ohio-based RWB, a portfolio company of MiddleGround Capital.

With headquarters and operations out of Southfield, Michigan, PAC is focused on developing and producing precision-engineered valve springs and valvetrain components.

Its engineering, manufacturing, and in-house testing in the US aligns PAC well with the rest of RWB’s high-performance portfolio, according to a company statement. PAC’s product line is expected to further enhance RWB’s ability to serve various racing markets,

from circle track to drag racing.

PAC’s manufacturing and supporting operations will remain based out of its current Southfield, Michigan, headquarters.

## DAVE COLE SELLS ULTRA4, RETAINS KING OF THE HAMMERS

King of the Hammers (KOH) co-founder Dave Cole has sold the Ultra4 Regional Series to Jason and Gayla Robinett, owners of MidAmerica Outdoors, a riding and racing park in Jay, Oklahoma.

Cole will retain ownership of Hammering Productions, which includes King of the Hammers, Ultra4 Europe, and Great American Shortcourse.

“I am excited to see what the Robinetts and their team can bring to the series. They have incredible plans and have already built a world-class facility in Oklahoma,” Cole said.



## KAHN MEDIA ACQUIRES TREAD AGENCY

Moorpark, California-based Kahn Media has acquired the assets of TREAD Agency, which will act as a sub-brand of Kahn Media and provide digital marketing services focusing on off-road, shooting sports, fishing, and boating overland, and related market segments.

TREAD is based in Southern California, with locations in Texas, Arizona, and Florida.

## FORD ANNOUNCES FORD BLUE, FORD MODEL E DIVISIONS

Ford has announced two new businesses: Ford Blue for internal combustion engine (ICE) vehicles and Ford Model e for electric vehicles.

Ford Blue will build out the company's portfolio of ICE vehicles with a goal to lower costs, simplify operations, and improve quality with "world-class hardware engineering and manufacturing capabilities."

Ford Model e, meantime, is designed to accelerate innovation and delivery of breakthrough electric vehicles at scale and develop software and connected vehicle technologies and services.

## KEYSTONE AUTOMOTIVE OPERATIONS OPENS FLORIDA DISTRIBUTION CENTER

Keystone Automotive Operations, the wholesale distributor and marketer of automotive, marine aftermarket products, services, and more based in Exeter, Pennsylvania, has announced a new distribution center in Ocoee, Florida.

The 200,000-square-foot Orlando-area facility will service the company's automotive, RV, and marine retail customers.

## NEW OWNERS FOR NORTH FLORIDA MOTORPLEX

The North Florida Motorplex—the drag strip and dirt track in Fountain, Florida,

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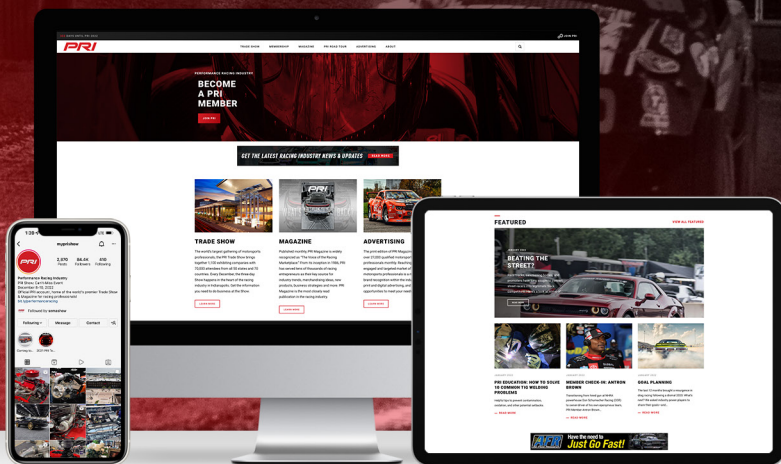
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formerly known as Powerhouse Motorsports Park—has new owners.

Kevin and Cody McDaniel—brothers that operate Piggly Wiggly grocery stores in Florida and Alabama—have taken over ownership of the facility, home to the 1/8-mile drag strip now sanctioned by the International Hot Rod Association (IHRA).

Track improvements include a new concession stand, tower, and bleachers. In addition, officials have widened the drag strip, and installed new concrete walls, lighting, and an Accutime timing system. Kurt Johnson of Total Venue Concepts oversaw track preparation.

With sponsorship from Coca-Cola, the track will offer a \$60,000 points fund, bonuses, and a vacation package to Panama City Beach.

## LAS VEGAS TO HOST F1 NIGHT RACE IN 2023

Formula 1 officials have announced a new United States race for November 2023, the Formula 1 Las Vegas Grand Prix. The event will be one of three F1 races in the US, joining Miami (Florida) and Austin (Texas).

Las Vegas previously hosted races in 1981 and 1982, but this will be the first time F1 cars will race on the iconic Las Vegas Strip, with the circuit sweeping past famous hotels and casinos. The 14-turn track will run for 3.8 miles, with top speeds expected to hit around 212 mph.

## TOYOTA GAZOO RACING ANNOUNCES NEW SINGLE-MAKE SERIES 'GR CUP'

Toyota Gazoo Racing North America has announced a new single-make series, the "GR Cup," featuring the Toyota GR86.

Based in the US, the GR Cup will feature seven race events with dates and locations to be announced later. Competitors will run identical Toyota GR86 vehicles, which will emphasize driver skill and car setup.



## SPEEDMASTER ADDS NEW NORTH AMERICAN DIRECTOR OF ENGINEERING

Rialto, California-based Speedmaster has announced the addition of Fredrick (Rick) Roberts, Ph.D., as its North American director of engineering.



**Rick Roberts**

"We are working toward being 85% made in the USA by 2025, and having a track-proven director of engineering like Rick Roberts gets us one step closer," said Speedmaster Deputy CEO Tim Kawasaki.

Roberts served 28 years as Edelbrock's director of engineering and played a key role in developing EFI, cylinder head, and intake manifold programs. In 2019, he founded Roberts Automotive Consultants.

## WILD HORSE PASS MOTORSPORTS PARK (AZ) TO CLOSE AFTER 2023 NHRA ARIZONA NATIONALS

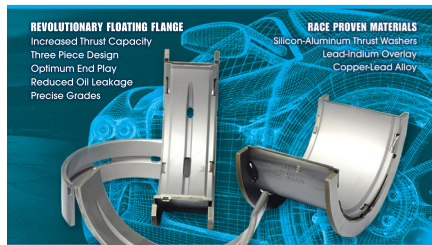
The Wild Horse Pass Motorsports Park in Chandler, Arizona, has announced that the 2023 NHRA race will serve as the final event for the facility. The park will celebrate its 40th year of NHRA racing during next year's Arizona Nationals.

The park features four race tracks: a 1/4-mile, NHRA-sanctioned drag strip; 1.6-mile road course; a 10-turn 1.25-mile road course; and a 1.1-mile road course with a 3/8 mile straightaway. It also features a 2.4-mile IHBA- and APBA-sanctioned oval lake.

A new overpass roadway for an I-10 extension will utilize the space now occupied by the track.

## NITRO RALLYCROSS TO LAUNCH GLOBAL SERIES, ANNOUNCES ALL-ELECTRIC CLASS

Nitro Rallycross (Nitro RX)—the rallycross racing series founded by Travis Pastrana in 2021—will launch its inaugural global season



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on June 18–19, at England's Lydden Hill Race Circuit for the first of 10 races staged in six countries, including Sweden, Finland, Canada, Saudi Arabia, and the US.

The 2022–23 Nitro RX season will also debut the FC1-X in the new Group E division. Created by First Corner, LLC, in collaboration with QEV Technologies and Nitro RX, the FC1-X delivers the electric equivalent of 1,070 peak horsepower and accelerates from 0–60 in 1.4 seconds.

In addition, the Supercar class and NRX Next class are set to return.

### NASCAR NAMES O'DONNELL COO, KENNEDY BACK WITH COMPETITION TEAM

NASCAR has announced two key executive leadership moves, promoting Steve O'Donnell to chief operating officer (COO) and returning Ben Kennedy to the Competition team, where he will assume a key leadership position as senior vice president, racing development & strategy.

As COO, O'Donnell will oversee all NASCAR-owned track properties, track presidents, respective events, and more. Kennedy will maintain oversight of the national series schedule development while also working with O'Donnell in managing at-track competition and racing innovation, among other duties.

### McLEOD RACING NAMES NEW DIRECTOR OF SPORT COMPACT SALES

McLeod Racing has announced sport compact driver Lisa Kubo as its new director of sport compact sales.

Kubo is a professional drag racer of 12 years and the first sport compact FWD driver to break into the seven-second zone. In her new position, she will help grow and strengthen the McLeod Tuner Series line.

"To join the team that Paul Lee has assembled is a true honor," Kubo said.

### BRETT LAUER HIRED AS PRESIDENT OF DRIVEN LIGHTING GROUP

Driven Lighting Group—the supplier of aftermarket automotive lighting products and online retailer—has named Brett E. Lauer as president of the company based in Atlanta, Georgia. He joins Matt Kossoff, Chris Nelson, Jeremie Baker, and Jiten Patel on the company's executive team.

Lauer previously served as CEO of Bestop Morris, overseeing the Morris 4x4 Center.

### NASHVILLE SUPERSPEEDWAY ADDS THREE TO KEY POSITIONS

Track officials have announced that three veteran sports executives have joined Nashville Superspeedway, Middle Tennessee's home for NASCAR Cup Series racing and live entertainment in Gladeville, Tennessee.

Matt Greci is now vice president of events and operations; Kacy Harmon has been named the track's senior director of ticket sales and operations; and Jason Lazar becomes the director of operations.

### POWER AUTOMEDIA ADDS DIRECTOR OF CONTENT, CONSUMER MARKETING

Murrieta, California-based Power Automedia has announced that Brian Havins, the editor of *LSX Magazine*, has been promoted to director of content and consumer marketing.

In his new role, Havins will lead the content of Power Automedia's publishing division and work with the chief operating officer, creative operations director, and other members of editorial leadership.

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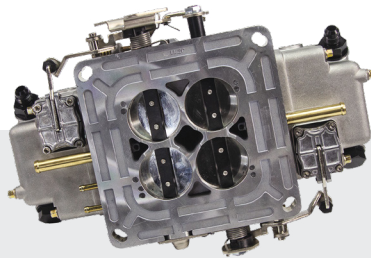
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## MAHLE MOTORSPORT [mahlemotorsports.com](http://mahlemotorsports.com)

Top Alcohol engine builders are now able to order MAHLE's PowerPak high-performance piston kit for a Top Alcohol Hemi that will come with a 1/16-, 1/16-, 3/16-inch performance ring set, and pistons forged in 2618 alloy.

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## MOROSO PERFORMANCE PRODUCTS [moroso.com](http://moroso.com)

The BBC high volume billet aluminum oil pump is engineered to fit Moroso's 10-inch deep oil pans. Benefits include 6061-T6 billet housing with three times larger mounting boss area to prevent breaking, and an increased inlet area to prevent cavitation; and, it will clear 4 3/4-inch stroke with most steel rods. It has a trust bearing assembly that increases housing and gear life due to driveshaft axial forces on the drive gear.

**Contact: 203-453-6571**



## PROCHARGER [procharger.com](http://procharger.com)

ProCharger's 2022 Camaro SS Supercharger kits range from 600–1200+ horsepower. These systems are designed to be 100% bolt-on as well as fully DIY friendly. However, ProCharger has a vast dealer network across the US to install the system.

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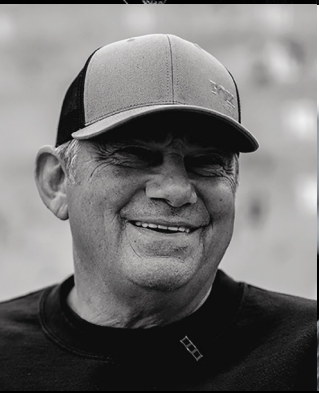
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Red Racer Books is a new children's book series that introduces kids to motorsports as well as concepts like sportsmanship, diversity, science, and technology. The first book in the series, The ABCs of Racing, teaches concepts about racing with Red Racer as the guide. It follows the alphabet with detailed explanations of racing terms and engineering concepts.

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# AD INDEX

NAME	PAGE NO.	NAME	PAGE NO.	NAME	PAGE NO.
1 WAY TECHNOLOGIES	107	DESIGN ENGINEERING INC.	45	PROFORM	67
AIRHEART SALES	115	DRIVEN RACING OIL	56	PROREP MARKETING LLC	116
ALL-MIDWEST SALES, LLC	115	DRIVESHAFT SHOP INC.	72	RACETEC PISTONS	70
ARP INC.	5	ERSON CAMS	30	RADIAL BEARING CORP.	53
ATECH MOTORSPORTS	3	EXHAUST GAS TECHNOLOGIES INC.	110	RED LINE SYNTHETIC OIL	96
ATL RACING FUEL CELLS	77	FLUIDAMP-R-VIBRATECH TVD	69	RON DAVIS RACING PRODUCTS INC.	107
B.R. MOTORSPORTS	110	FUEL INJECTOR CLINIC	67	ROSS RACING PISTONS	55
BALLARD & ALLEN MARKETING INC.	116	GANDRUD PARTS CENTER	95	ROTTLER MANUFACTURING	120
BARNES SYSTEMS INC.	104	HOT SHOT'S SECRET	49	SAMPSON	107
BEHRENT'S PERFORMANCE WAREHOUSE	34	HOWARDS CAMS/HRC	55	SCHAEFFER MANUFACTURING CO.	2
BETA TOOLS	41	IDIDIT LLC	71	SCOTT LEWIS ASSOCIATES INC.	116
BILL MITCHELL hardcore RACING PRODUCTS	71	ISKY RACING CAMS	7	SCS GEARBOX INC.	96
BLP RACING PRODUCTS LLC	99	J-TEC ASSOCIATES INC.	109	SERDI CORP.	68
BLUD LUBRICANTS	72	JAZ PRODUCTS INC.	109	SETRAB USA	95
BOB COOK SALES	116	JESEL INC.	35	SHAFTECH LTD.	104
BRASWELL CARBURETION	109	JONES RACING PRODUCTS	70	SPECIALTY PRODUCTS DESIGN	40
BRODIX INC.	110	KAM MARKETING INC.	116	SPEEDWAY MOTORS INC.	25
BUZZE RACING	105	KINSLER FUEL INJECTION INC.	93	STAINLESS HEADERS MANUFACTURING	94
CALICO TECHNOLOGIES INC.	35	KLOTZ SYNTHETIC LUBRICANTS	63	THERMO-TEC	71
CALLIES PERFORMANCE PRODUCTS INC.	42	KUNZMAN & ASSOCIATES	116	THOMAS SALES CO. INC.	115
CALVERT RACING SUSPENSIONS	77	LAT RACING OILS	69	TOP STREET PERFORMANCE	68
CENTROID CORP.	87	LEAR CHEMICAL RESEARCH CORP.	105	TOPLINE AUTOMOTIVE ENGINEERING	119
CHAMP PANS	87	LINE2LINE COATINGS	72	TRICK FLOW SPECIALTIES	53
CHE PRECISION	93	MAHLE AFTERMARKET INC.	17	TURN 2 RACING COMMUNICATIONS	76
COLEMAN MACHINE INC.	57	MAHLE MOTORSPORTS INC.	94	TURN 14	31
COMEC INC.	30	MANLEY PERFORMANCE PRODUCTS	39	UNITED ENGINE & MACHINE CO.	43
COMETIC GASKET INC.	109	MOTOR STATE DISTRIBUTING	54	VAC MOTORSPORTS	68
CONSIDINE SALES & MARKETING	116	NEO SYNTHETIC OIL CO INC.	32	VAN NORMAN MACHINE INDIA PVT. LT.	29,107,109,113
CP-CARRILLO INC.	72	PACIFIC PERFORMANCE ENGINEERING	11	VP RACING FUELS INC.	61
CROWER CAMS & EQUIPMENT CO.	9	PAKELO MOTOR OIL SRL	44	WALTON CO.	99
CRP CANTRELL RACING PRODUCTS LLC	109	PENSKER RACING SHOCKS	107	WHEELER MOTORSPORTS CONSULTING	107
DAIDO ENGINE BEARINGS	109	PERFORMANCE TUBE BENDING INC.	101	WOOLF AIRCRAFT PRODUCTS INC.	76
DARTON INTERNATIONAL INC.	109	PETERSON FLUID SYSTEMS INC.	62		
DEATSWERKS	33	POWERMIST RACING LLC	101		



# SOCIAL STATUS

A closer look at racing and performance industry members' winning strategies on TikTok, Instagram, Facebook, YouTube, and more.

Social media is ever-changing, as different platforms' algorithms adapt to users' demands. So, what's working right now—photo or video (or both)?

The insiders we recently spoke with assured us that users want video, thanks in large part to the development of TikTok. And motorsports businesses are advised to take note of—and acclimate to—these trends if they want to be successful on social.

"With the emergence of TikTok, there has been a strong transition to video across Instagram as they compete for user interest and engagement," explained Patrick Wagenbrenner, communications manager at Keystone Automotive Operations, Eastvale, California. "Instagram is a very different platform for us. We believe that their audience wants to be entertained in short, quick increments. Long-form video (IGTV) has been supplanted by quick, entertaining video clips, and we find that the platform is delivering that type of content to users more aggressively than photo images."

"The correct video will capture an audience and make them pause from endless scrolling to pay attention to what is on their screen," which is why FiTech EFI prefers video for social media, especially Instagram and TikTok, noted Media Manager Crystal Covarrubias, who works out of the

company's Riverside, California, office. "After the popularity of TikTok, most social media platforms are pushing their short video features over images, so video is put front and center for a user."

The social team at ProCharger Superchargers in Lenexa, Kansas, also favors video over static imagery. "[Video] gets more than one of the senses involved (ears as well as eyes)," said Erik Radzins, director of communications and calibrations. "We are all obviously visual people, however, us 'car people' want to know what stuff sounds like, even if it's a dyno pull we have heard 3,000 times before. So, for that reason, without a doubt, video can always deliver more than most images can. That said, we are still a sucker for some really well-done, high-quality photos with great composition."

Indeed, images are still relevant, and they do pull in social engagement. So, a balance of photos and short films is preferred, depending on the platform.

"We use a mix of video and static images on Instagram and Facebook. Short-form video has proven to garner significantly more engagement than static images," noted Krista Lamb, director of products & customer experience at DeatschWerks, Oklahoma City, Oklahoma. However, "we like to feature user-generated content whenever possible,

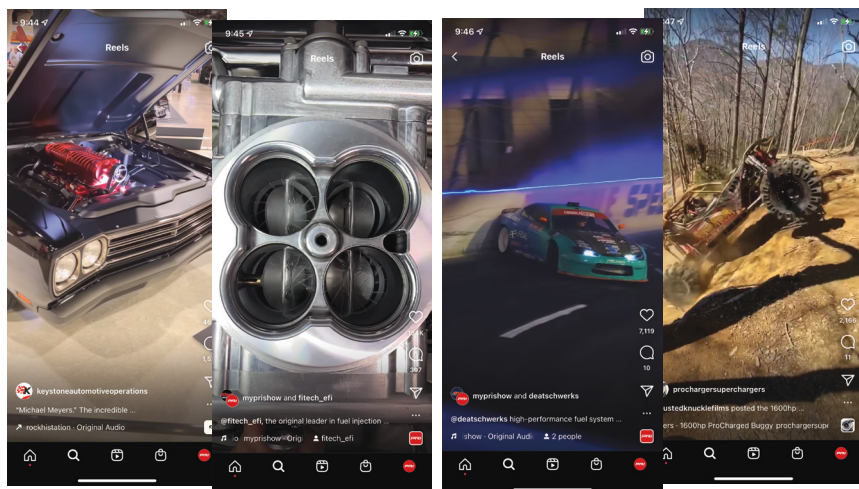
and when that content is video, both engagement and reach balloon over the most engaging static image. When we can post on [Instagram] Reels, views increase dramatically."

On Facebook, FiTech still prioritizes photos, at least for the time being. "The Reels format has just started on Facebook, and we find that our audience still resonates better with a good photo," Covarrubias explained. "We take into consideration our demographics on these platforms, and the older audience on Facebook prefers photo at the moment; it might take time for them to use the new app features."

Video, in addition to being generally more engaging than photos, also can help add followers more quickly, our sources agreed. "One of the biggest reasons we prefer video is the ability to go viral, or have a video skyrocket in views and engagement," Covarrubias said, adding that another way to enhance video content is by adding trending audio, which can include popular songs or sounds. "This can expose your video to a whole new audience with the sound alone. In an effort to keep up with other apps, social media platforms are also allowing more tools with these videos such as users stitching your existing videos, creating your own trending audio that can be utilized by anybody, and more that allows your page to be exposed to new audiences and allows us to be more creative."

Noted Wagenbrenner: "These aren't highly polished or produced video clips. They are quick, concise, entertaining, and informative videos that anyone can shoot with a little technical knowledge from their cell phones."

The takeaways? Basically, know your audience and what you want to accomplish, follow the trends, and adjust accordingly. "The reality is that we want to deliver content that our audience will respond to," Wagenbrenner summed up. "We utilize each platform differently, and have unique objectives for each." **PRI**





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