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INSIDE

PRI SHOW PREVIEW | TRUCK & TRACTOR PULLING | BRAKES
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ON THE COVER
Photo by Aaron Linkous and courtesy of Hammering Productions

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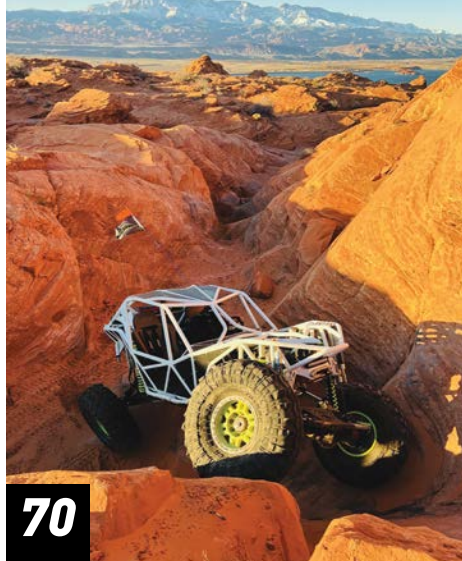
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SPEED

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FROM THE EXECUTIVE EDITOR

What do you value? And how is that value determined?

Needing to close out summer on a high note before my son returned to college and the PRI team mashes the accelerator preparing for the PRI Show, our family decided to head to the ultimate car lover's dream at Monterey Car Week. Once we arrived, we traveled to a variety of events in Monterey, Carmel-by-the-Sea, and Seaside to view absolutely amazing cars. We were surrounded by the likes of Koenigsegg, Pagani, Ferrari, Porsche, Lamborghini, Bugatti, and even some obscure hypercar brands that were new to us. We even attended the Gooding & Company Pebble Beach Auction. While many of those same brands crossed the auction block, a few other cars piqued my interest. PRI readers would want to raise their bid card and hear that glorious "Sold!" about the following vehicles: 1960 Lotus Type 18 Formula 1 car (sold for \$379,000), 1961 Chaparral Mk 1 (didn't meet the reserve), 1976 Porsche 935 (\$4,295,000), and a 1995 Ferrari 333 SP Evoluzione (\$5,120,000).

No trip to Monterey Car Week would be complete without a stop at WeatherTech Raceway Laguna Seca for the Rolex Monterey Motorsports Reunion. After entering the complex, we headed straight for the Corkscrew, found a shady spot underneath a tree, and enjoyed the sights and sounds of vintage race cars, which included historic F1 cars plus IMSA, SCCA, Trans Am, Formula Ford, and more.

To our delight, this year marked the 50th anniversary of the event, and even more rare race cars were on display. We were greeted



MEREDITH KAPLAN BURNS
meredithb@performanceracing.com

by the 1965 Shelby Cobra Daytona Coupe (chassis: CSX 2286), below, which is one of six coupes and the last constructed since it was used as a template. We were informed that the car has an eight-figure value!

So, how exactly is that value determined? Of course, it comes down to what someone is willing to pay for it. But not everything of value has a price tag. Something that I truly value are the relationships I have made in this industry over the years. I was happy to catch up with Hemmings' Evan Perkins at Laguna Seca. Another relationship I cherish is with PR phenom Dean Case.

Have you ever played the game "Six Degrees of Kevin Bacon?" For those unfamiliar, the game centers around actor Kevin Bacon and how close he is—up to just six degrees of separation—with many other people in the entertainment industry who have worked with him. In the world of motorsports, the game should be retitled the "Six Degrees of Dean Case," or actually, "Two Degrees of Dean Case." If you are not

familiar with Dean, you no doubt know someone in our industry who is. Dean is absolutely passionate about all things motorsports. His goal is to help people in our industry connect and further advance and prolong our sport. For more on how he is bettering racing, and those of us in it, turn to page 20.



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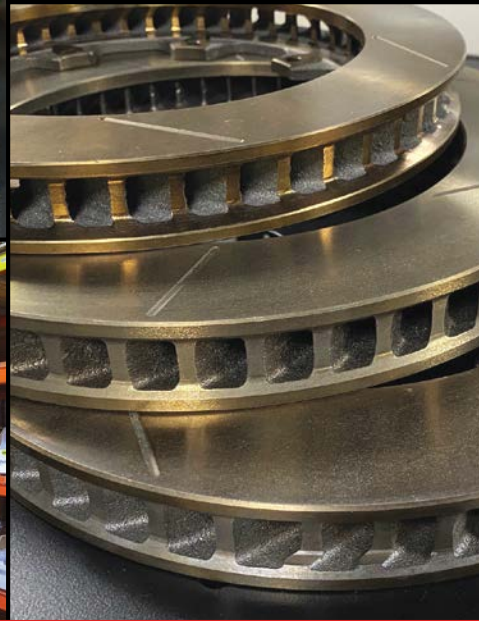
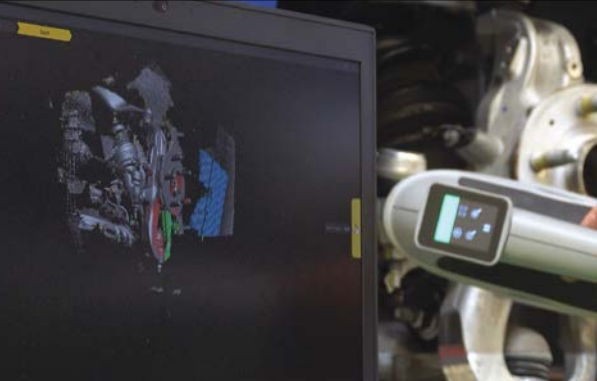
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Photo courtesy of King of the Hammers

ASK THE EXPERTS

PRI SHOW ATTENDEE FAQs

Follow this advice from the PRI Team for a smooth show experience this December in Indianapolis.

By Meredith Kaplan Burns

As the PRI Show quickly approaches, now is the time to finalize your plans. The PRI team is ready to share helpful tips that answer some of attendees' most common questions.

Offering expert advice about how attendees can have a smooth registration process, PRI Show Manager Nicole Harless offered this helpful reminder: "The big one for registration is to make sure after you renew or buy your PRI membership you must register also. It is a two-step process." Harless added, "Don't stand in line to pick up your Show credentials onsite at the Indiana Convention Center (ICC). Instead, register before November 21 and get your badge in the mail."

Many people who attend the PRI Show prefer to stay close to the ICC and Lucas Oil Stadium in downtown Indianapolis. However, those hotels are already booked. So PRI Senior Show Specialist Michelle Gallegos offered another option. "If you haven't finalized your travel and housing plans, make that a priority. While downtown hotels are already reserved, plenty of rooms are still available near the Indianapolis International Airport and in Plainfield. Plus, guests of those hotels in the PRI hotel block can take advantage of complimentary shuttle service on Show days, December 12–14."

To answer some more of these common questions, we have put together this Q&A for your reference. If you need additional information, visit bit.ly/PRI2024.

Q: I'm a race fan. Can I attend the Show?

A: The PRI Show is open to qualified PRI Members only. Those who qualify must be involved in racing businesses, such as retailers, engine builders, fabricators, sanctioning organizations, track management, warehouse distributors, manufacturers' representatives, and professional race team members.

Q: Should I register in advance or register onsite in Indianapolis?

A: It only takes a few short steps, especially if you have attended the PRI Show previously, to register online for this year's event. Visit bit.ly/PRI2024 and enter the email address used to previously register. Please note that PRI membership is required to attend the Show. The annual \$40 membership includes a host of benefits—including a digital subscription to PRI Magazine, subscription to the PRI eNewsletter, Save Our Racecars Advocacy, posting access on the PRI Jobs Board, and a variety of discounts—with PRI Show admittance just one of those benefits.

Register online by November 21, 2024, to receive your badges in the mail. Otherwise, badges will need to be picked up at Express Badge Pick Up at the Maryland Street entrance of the Indiana Convention Center.

Q: How can I get the best hotel rate?

A: PRI works closely with our 40-plus Indianapolis downtown and airport area hotel partners to guarantee the best hotel rates during Show week. A variety of hotel packages are available from affordable to upscale to suit different budgets. Downtown hotel options fill up quickly as soon as housing opens each year in June. Additional hotel options are available near the airport and in Plainfield, which include complimentary Show shuttle service, free airport courtesy shuttle, and free guest parking. Hotel reservations can be made online at bit.ly/PRIhotel or directly with Visit Indy Housing via email at prihousing@visitindy.com, or by calling 317-262-8191.

Q: Should I download the PRI Show App?

A: Yes! The app can be easily downloaded to your cell phone via the App Store or Google Play. View the floorplan, a list of exhibitors, all the events happening during the week, and customize a planner to schedule meetings with exhibitors and

attend various sessions and events you don't want to miss.

Q: What should I wear?

A: We recommend business casual when conducting business at the Show. Several downtown hotels are connected to the ICC via skywalks, but for those planning to head outside, keep in mind the average December Indianapolis temperatures range from a high of 39 degrees F to a low of 23 degrees F, so bring your warm weather gear. Rain and snow can occur during the event, so be prepared for inclement weather. A coat check is available in the Green Hall of the ICC and just inside the entrance to Lucas Oil Stadium from the adjacent parking lot.

And the most important component: wear comfortable shoes. Some PRI staff recommend changing socks during the day to avoid blisters, while others wear different shoes from one day to the next.

Q: Where do I park?

A: The Indiana Convention Center is located in downtown Indianapolis. For those driving into town for the PRI Show and staying at a downtown-area hotel, we recommend parking at your hotel and walking to the ICC. Those driving to the Show each day can park at the Lucas Oil Stadium lot or various lots near the ICC. View a list at downtownindy.org/explore/parking.

Complimentary shuttle service is available at official PRI hotels near the Indianapolis International Airport and in Plainfield. View shuttle routes and times at bit.ly/PRIshuttles.

Q: Where can I go for dinner? Is it too late to book St. Elmo Steak House?

A: For a complete list of restaurants near the ICC, view the current list at visitindy.com/restaurants/. Also, reference the Indianapolis City Guide, which will be included in the November issue of PRI Magazine.

St. Elmo Steak House fills up early with reservations. However, reservations may still be available for non-peak dinner hours.



Adjacent to St. Elmo is Harry & Izzy's, which has the same menu. So if you have a craving for St. Elmo's world-famous shrimp cocktail and can't nab a reservation, head over to Harry & Izzy's.

Q: Do I need to sign up for the Grand Opening Breakfast, PRI Happy Hour, or PRI Education sessions?

A: No. All PRI attendees and exhibitors are welcome to attend these complimentary PRI-sponsored events. The Grand Opening Breakfast will take place in the Sagamore Ballroom, which is located on the second floor of the ICC on Thursday, December 12. Doors open at 7:00 a.m., with a complimentary hot breakfast served upon seating, and the program begins at 7:30 a.m. Speed Sport's Ralph Sheheen will return to have a conversation with racing personality Travis Pastrana. Arrive early when doors open to grab your seat.

The PRI Happy Hour begins at 5 p.m., after the Show floor closes on Thursday, December 12. Head over to the lobby of Lucas Oil Stadium for free appetizers, drinks, and plenty of games and activities as you reconnect with industry friends.

PRI Education seminars are open to all who attend the PRI Show. No sign-ups are required. Topics include pricing policies, online advertising, customizing sponsorship decks, improving social media performance, tuning techniques, and more. For an Education list and schedule, visit <https://bit.ly/PRIeducation>. **PRI**

SOME QUICK TIPS OF WHAT TO DO:

- Register before 11/21/24 to receive your badges in the mail.
- Go to bit.ly/PRI2024 to purchase or renew your membership and register for the Show.
- Wear comfortable shoes.
- Pick up your lanyard at the Show.
- Download the PRI App.

AND DON'T:

- Register after 11/21/24 or you will have to wait in line onsite.
- Forget registration is a two-step process. You must renew or buy a membership and then register.
- Leave your badge at the bar.
- Hesitate to call for help at 949-373-9230.

PRI SHOW BASICS:

Indiana Convention Center,
100 S. Capitol Ave.,
Indianapolis, IN 46225

*The PRI Show will take place
Thursday, December 12, and
Friday, December 13,
from 9 a.m. – 5 p.m.,
and Saturday, December 14,
from 9 a.m. – 4 p.m.*



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CARBON TRC INTAKE MANIFOLD

PERFORMANCE DESIGN

performancedesign.com

Performance Design in Auburn Hills, Michigan, has introduced its new Carbon TRc (Tunnel Ram compact) intake manifold—an evolution of the company's Carbon TR naturally aspirated and Carbon TRic (intercooled) boosted intake manifolds. The new TRc is an under-hood, short runner intake manifold optimized for boost, but does not rule itself out of a naturally aspirated application where fitment and aesthetics are preferred over peak power.

The key goals of this new design were to maintain the carbon fiber and billet aluminum construction, manufacturability within a desired price target, fitment under the stock hood, and versatility of subcomponents to be used across a wide range of applications.

To achieve this, they utilized a modular design starting with a one-piece molded carbon fiber plenum—a strong pressure vessel without seams or bonding that's capable of handling over 50 psi of boost. It also features CNC-machined, anodized 6061-T6 aluminum runners and a 103-mm billet aluminum throttle body flange. Billet aluminum fuel rails are also available for port fuel applications or to add port fuel to direct-injected applications. This TRc intake manifold



will accept factory injectors, and features Factory MAP, PCV, and Canister Purge Solenoid connections. The intake can be reversed on the engine and includes stainless steel hardware for installation, as well as molded port and throttle seals.

Due to its modular design, the Carbon TRc is available for a wide range of applications including LT1/LT4, LS3/L92, LS7, LS1/LS2/LS6, Godzilla, Coyote, and Hemi—all using the same carbon fiber plenum.

QUALFAST CNC SERIES PORTED CYLINDER HEADS

QUALCAST

qualcast.com

QualCast in Nashville, Tennessee, introduces its aluminum QualFast CNC Series ported cylinder head product line, which are CNC-machined in the USA.

These CNC Series heads are available in small block Chevy, LS1, LS3, and LS7 castings with bronze guides and valve seats installed, as well as in the company's popular and affordable cylinder head kits. The CNC Series SBC kits include two CNC heads, various combinations of street or Black Lightning performance valves, performance valve springs, spring inserts, retainers, keepers, stem seals, rocker studs, and guide plates for one engine. LS series kits come without rocker studs or guide plates.

QualFast CNC Series heads feature ported combustion chambers, intake and exhaust runners. Flow numbers provided by the Saenz digital AD-680 flow bench result in 15–25% greater flow compared to the company's un-ported heads. QualCast also offers BBC, SBF, and BBF un-ported aluminum heads and cylinder head kits.



IN SIGHT TEAROFFS

ULTRA SHIELD RACE PRODUCTS

ultrashieldrace.com

In Sight Tearoffs from Ultra Shield Race Products in Flint, Texas, are 10-layered laminated tearoffs to allow racers to see the track throughout the harshest of dusty and dirty conditions. The White Box contains 100 tearoffs while those needing a 250 count can order the Red Box. Tearoffs fit helmets from Simpson, Bell, Impact, Stilo, Arai, and Zamp.

"In Sight Tearoffs allow drivers to see through 10 tearoffs that have the clarity of looking through one," explained Mandy Pittman. "Drivers can have multiple stacks of 10 on their shield and have clear visibility even in dusty or muddy conditions. Our bulk box packaging makes storage of the tearoffs easier and more convenient for the driver and the benefit of buying in bulk allows you a more affordable path to victory lane."

Aluminum or plastic tearoff posts can be ordered separately.



DEVIL RAY 3.0 AND DESERT DEVIL 3.0 HELMETS

SIMPSON

simpsonraceproducts.com

Simpson, a Holley Performance Brand, based in New Braunfels, Texas, has released the Devil Ray 3.0 and Desert Devil 3.0 racing and off-road helmets. The helmets are lightweight designs and include improved safety features.

The Devil Ray 3.0 helmet is for enthusiasts seeking a custom fit and enhanced comfort during long races, with increased ventilation for airflow, and is Snell certified. The Desert Devil 3.0 caters to enthusiasts venturing into off-road terrain with a top air system and neck skirt for dust protection, and enhanced interior design for desert and dirt environments.

“Helmets make up the largest segment of the global automotive safety market today. Customers are looking for best-in-class solutions for their performance and racing needs and the Simpson Devil Ray 3.0 and Desert Devil 3.0 deliver that along with great styling,” said Jordon Musser, senior vice president of safety and racing, Holley Performance Brands. “Our designers and engineers are listening to customers to create products like the improved Devil Ray line that continue to advance Simpson and push the brand to the forefront of auto performance safety for all enthusiasts.”

Both helmets are available in either carbon or composite variations



and drivers can pick from four color options, including matte black, black, white, or carbon fiber. The helmets boast improved aerodynamics, redesigned ventilation, and better accessory integration.

FASTENER KITS FOR FORD 7.3L GODZILLA ENGINE

ARP

arp-bolts.com

ARP in Ventura, California, has developed a series of fastener kits to bolster the performance potential and reliability of Ford's 7.3L "Godzilla" engine. Among them are a head stud kit (part number 258-4301), main stud and bolt kit (part number 258-6501), rod bolts (part number 258-6301), and a harmonic damper bolt (part number 258-2501). The damper bolt comes with a large diameter 1/8-inch thick washer for superior load distribution.

Manufactured in-house at ARP's Southern California facilities, the head and main studs are made of the proprietary ARP2000 alloy that is nominally rated at 220,000 psi tensile strength. They are centerless ground to assure concentricity with threads rolled (not cut) after heat-treat, delivering up to 20-times better fatigue strength than ordinary fasteners. The rod bolts are also manufactured from the same material.

Additional reliability can be obtained by using ARP's new flexplate bolt kit (part number 158-2901). Various OEM underhood fasteners can also be replaced with ARP's polished stainless steel or black oxide finished 8740 chromoly accessory bolts—20% stronger than Grade 8 hardware—which come in five-packs.



BILLET STEEL FLYWHEEL FOR LS-SWAP APPLICATIONS

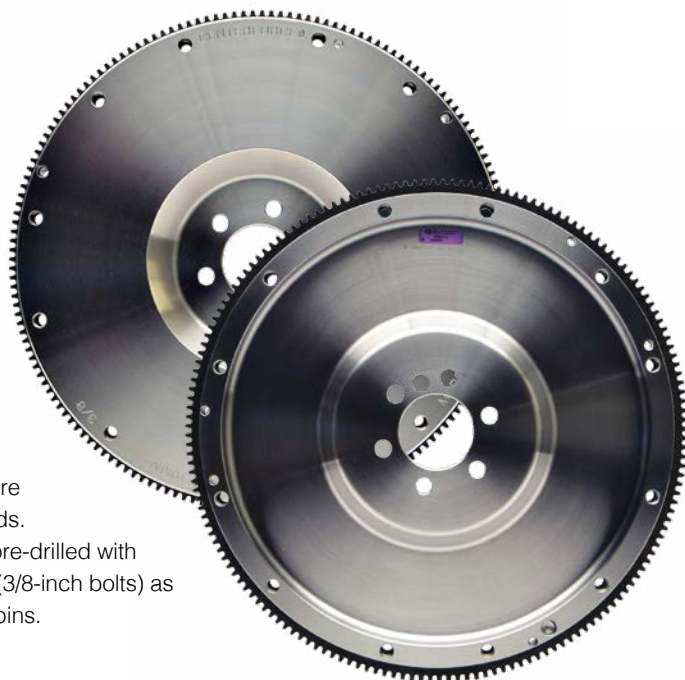
CENTERFORCE

centerforce.com

Centerforce, a division of Midway Industries that manufactures performance clutches and flywheels in Prescott, Arizona, has released a new billet steel flywheel for LS-swap applications. Designed to make pairing a Gen III or IV LS engine to a pre-LS manual transmission simple and reliable, this high-quality flywheel is made from billet steel and designed for improved performance via bolt-on installation.

This 168-tooth flywheel provides improved build quality over what the factory offers and solves a spacing issue when mating LS engines to older transmissions. It will mate to 1997 and later GM LS engines while offering the proper flywheel thickness (0.400 inches) to use in conjunction with the mechanical clutch linkage on many common early model transmissions, including Muncie SM465, GM SM420, New Venture NV3550, GM Muncie, Borg Warner T-10, and Richmond 4- and 5-speeds.

The kit (part number 704142) includes the pilot bearing and comes pre-drilled with pressure plate bolt patterns for early GM 11-inch and 12-inch patterns (3/8-inch bolts) as well as late-model metric GM 11-inch and 12-inch patterns with dowel pins.



ANTHEM PRO

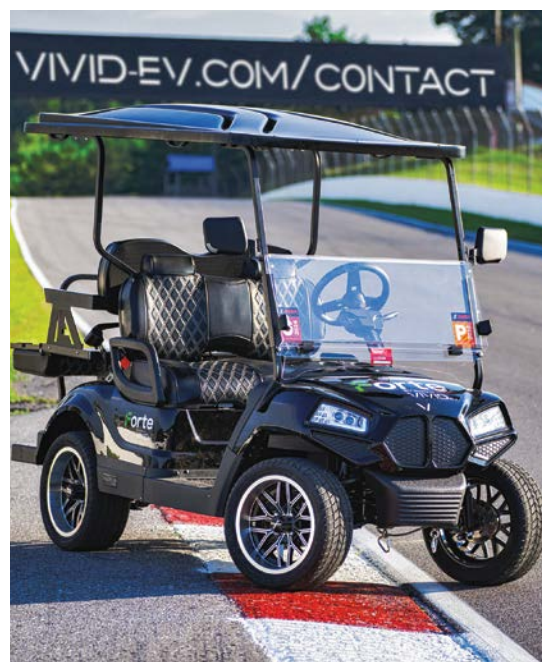
VIVID EV

vivid-ev.com/anthem-pro

Make getting around the race track easier—and more stylish—with this new golf cart from Vivid EV in Fort Myers, Florida. The Anthem Pro is a top-tier American-made golf cart designed for both luxury and performance. Powered by Eco Battery, it delivers plenty of power and smooth acceleration, enhanced by four-wheel disc brakes for improved stopping capabilities. The Anthem Pro features a robust, thermoformed body made from automotive-grade ABS plastic, ensuring a scratch-free and vibrant appearance over time. Inside it has a 10-inch touchscreen, seating with diamond stitching, and advanced LED headlights.

“At Vivid EV, we’re proud to help race teams reduce their carbon footprint by cutting down on emissions at the track,” said Joseph Wells. “Our Anthem Pro’s long-range charge ensures teams can rely on the performance they need all weekend, without compromising on sustainability. We’re excited to see how this partnership opens doors to further collaborations across the racing community.”

Vivid EV is an American manufacturer of lithium-powered golf carts, known for their durable, high-performance vehicles that combine advanced technology with customizable design.



NEWLY APPOINTED

DAVE O'NEILL

The new Juncos Hollinger Racing IndyCar team principal brings decades of open wheel racing experience to this exclusively created role.

By Jim Koscs

Dave O'Neill has been working in the world of open wheel racing since his teen years, and more recently building up Formula 1 teams Manor and Haas F1. In early 2024, he joined Juncos Hollinger Racing (JHR) as team principal, which fields two cars in the NTT INDYCAR Series and one in the INDY NXT by Firestone series. O'Neill brings four decades of race car building and management experience to JHR, which began as a Formula Renault operation in Argentina and moved to the US to join IndyCar.

After college, O'Neill's career took him to Formula 3 teams and F3 manufacturer Ralt, followed by nine years at Jordan Grand Prix, which is now Aston Martin F1. In 2009, he set up Manor Racing's F1 effort over a span of just six months.

"MY GUT INSTINCT HAS TYPICALLY BEEN THE RIGHT WAY FOR ME. I'VE FOUND THAT WHEN THERE'S TOO MUCH WORRYING ABOUT THINGS AND TOO MUCH DELIBERATING, YOU DIG MORE INTO SOMETHING THAT DOESN'T REALLY MATTER."

Five years later, Haas F1 hired O'Neill to do the same as sporting director and team manager for its Kannapolis, North Carolina-based team. Haas F1 placed 8th in the Manufacturer's Championship

two years in a row, an admirable achievement for a new team. Tired of the globetrotting F1 requires and wanting to be closer to home in Austin, Texas, O'Neill left Haas at the end of 2018 and became a partner in Esses Racing in Austin, which services GT3 race teams.

A call from Romain Grosjean, who had driven for Haas F1 and was now driving for JHR, brought O'Neill to visit JHR to consider a new role there. O'Neill then became team principal in early 2024.

PRI: You've been involved in racing for 40 years. How did that start?

O'Neill: When I was 14, I used to ride my bicycle past a race team in a village called Faygate in West Sussex, England. One day I stopped in and asked, "Do you mind if I have a look at the race cars?" The

cars turned out to be Ray Racing Formula Fords. They let me clean the bodywork, and I started doing that in the evenings and on weekends. They invited me to Brands Hatch for Formula Ford Racing and Snetterton,



DAVE O'NEILL

TITLE:

Team Principal

ORGANIZATION:

Juncos Hollinger Racing

HOMETOWN:

Austin, Texas

FAST FACT:

When not traveling to races, O'Neill spends his time with his wife, who he married in 2015, in Austin. There, he also hones his skills at smoking brisket and, when he can, getting out for fresh air on one of his bicycles, an enduro, mountain bike, or road racing bike.

Oulton Park, and a few other tracks.

PRI: At JHR, do you have any top priority plans in place?

O'Neill: The main project is to stabilize what we have. We compete against the likes of Penske, Andretti, McLaren, and Ganassi. Those teams do the same thing time and time again, which breeds consistency. So, my main target is to get the budget into the correct place, put a structure in place, and get the SOPs running properly to achieve that consistency.

PRI: What are some key differences in doing that for IndyCar versus Formula 1?

O'Neill: The technology is more advanced in Formula 1, and there are lots more moving parts. Typically, if you're on a smaller F1 team, you'd have 300 to 400 people. On a larger team, you'd have 1,000 to 1,200. At JHR, there are 47 people on the books. There are not as many components on an Indy car that need servicing, and the parts are made a little bit stronger, so you don't need as many people or as many parts. The IndyCar parts are not life'd-out as quickly. For example, a Formula 1 wheel has a life of four or five races, while an IndyCar wheel will do a couple of seasons. The crack checking and other procedures to get it to that point are far less compared to Formula 1.

PRI: The team's media materials talk about doing things differently. Can you explain what that means?

O'Neill: It means we basically do



Dave O'Neill, left, joined Juncos Hollinger Racing (JHR) as team principal this season, bringing decades of motorsports experience, including F1. Photos courtesy of Action Sports Photography, Inc.

things with what we've got. For example, the same people that work on the car at the factory also work on it in testing and put it back together for the race. The bigger teams have more of an advantage, because they have more people and resources to draw on.

PRI: Is there something you've learned in your varied career that you still rely on every day?

O'Neill: Every day is a school day in my book.

But I guess the quick answer would be to go with your gut sooner. My gut instinct has typically been the right way for me. I've found that when there's too much worrying about things and too much deliberating, you dig more into something that doesn't really matter.

PRI: You've crossed paths with a lot of top people in racing. Are there a few people that you would point to as having a strong influence on you?

O'Neill: For non-technical people, there's a couple. I never had a father, he died when I was one. So, I have listened to people that I thought talked sense. One was Stuart Bennett. He has sadly passed. The other is Roy Baker. They offered me good advice and were solid people from the motor racing industry. When it comes to a technical guy, it's probably Gary Anderson, who designed the Jordan F1 car. He was very solid and true to his words. He explained everything and made sense. He was also fun. Learning should be fun. **PRI**



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INDUSTRY INSIGHTS

DEAN CASE

Although he studied to be an engineer, Dean Case's passion for motorsports led him down a different road to spread the message about motorsports, and some worthy causes along the way.

By Jeff Zurschmeide

There's very little that Dean Case hasn't seen in his long career as the voice of racing for Mazda and Nissan, and his influence has been felt far beyond the race tracks where he does his work. One of the secrets of success is to bring your whole self to the job, and Case brings his passion for including young people and for benefitting shelter animals to the racing world.

In addition to his support for Nissan and formerly Mazda, Case is known for his advocacy for Formula SAE, which trains college students in practical, hands-on, competitive engineering of racing vehicles, and for the many connections he has made in the racing world to bring attention to charitable causes. Case has improved countless lives, both human and animal, over the course of his career. We caught up with him to ask how and why he does it.

"THERE'S A LOT OF DRIVERS WHO HAVE TALENT BEHIND THE WHEEL, BUT THEY HAVE TO BE MORE THAN THAT."

PRI: You have one of the best jobs in motorsports, right? You get to help tell the story of racing and why people should care about it. How did you get to where you are in your career?

Case: Growing up, no exaggeration, not once did we ever watch a basketball, football, hockey, or any stick-and-ball sport on TV, ever. As I grew up, my dad was a Los Angeles city firefighter. We'd go to Ontario Motor Speedway, Riverside Raceway, Ascot Lions drag strip, and all the tracks. That was our sport, and so I knew from an early age I wanted to be in motorsports. I chose engineering as a degree because I thought that would be the best way to get in. That's how I started my career. Since then, a lot of my stuff has been just fortunate timing to be at the right place at the right time.

My first job out of college was at Mazda R&D in Irvine, where the Miata was being developed. I worked on the original Miata program, and I tried to get involved in Mazda racing. There wasn't really an opportunity to do so at that time. Then I went to Ford and did electric vehicle engineering.

It was interesting because at Ford, you get your annual performance review like every company, but they do a coaching session and they ask, "What are you trying to do?" If you give them an answer like, "I want to do design release, then get my MBA and move into product planning," there's a path for that. But if you tell them you want to be transferred to Ford Australia or Ford Motorsports, they look at you like you're crazy! So I got no response for several years until I had a boss who called up the head of Ford Racing and asked what it would take to get a position there. The

answer was that junior program managers are on loan to the Motorsports department. If my boss was willing to pay my salary for the next year, I could go work for Motorsports. That's how I got into racing at Ford. I had an electric vehicle manager who supported me going over there to become the Trans Am program manager in 1997, which was the year Tommy Kendall won 11 straight races!

After that I went to Nissan because I couldn't hack the Michigan winters. I did a career change at Nissan from engineering to communications. I did PR at Nissan including the launch of the 350Z and the launch of NISMO in the US. I had a good run at Nissan before I went freelance and ended up with Mazda. I got reconnected with Nissan this year and I'm doing their GT4 program.

PRI: What is an automaker looking for when it chooses a racing series to showcase its products?

Case: A lot of it is figuring out what your mission is. Are you trying to sell products, or are you just trying to create brand awareness or brand loyalty? I cringe every time I hear someone say, "Win on Sunday, sell on Monday," because I don't believe it. No one is making a \$40,000 decision based on what you saw at the track. But there is loyalty. A lot of what built NASCAR was the rivalry between Ford and Chevy and Dodge. Currently Nissan has a stable

global GT4 platform it can sell to racers. That form of customer racing was very attractive to Nissan. So Nissan is in GT4 for different reasons than the company is in Formula E.

Every company has to look at their reasons, and they are constantly evaluating what makes sense, and where they think they can compete fairly. What is the budget like? There's a lot of complexities to sort out, and I think some companies try to go too high up the food chain, if you will. You can't go up against powerhouses like Porsche unless you've got resources like Porsche. Should you be building the ultimate Hypercar, or should you be going for something in the GT realm or Touring Cars? It depends on what you're looking for. But it also changes constantly, and car companies are not always consistently involved in motorsports.

PRI: Let's turn that around and ask, what can a racing series do to attract automaker participation?

Case: I think that rules stability is important. GT4 is a great example. You have to have rules stability because the racer just spent a quarter-of-a-million dollars buying that Porsche GT4 car. It can't become obsolete because BMW comes out with something that's three seconds faster. That would just destroy the series. Everyone hates Balance of Performance, but it is a necessary mechanism to make it affordable for people to race, because they're not at risk of buying

"PROJECTS LIKE BAJA SAE AND FORMULA SAE TEACH STUDENTS THAT DEADLINES ARE REAL, AND YOU HAVE TO COPE WITH THAT."



To Dean Case, seen here second from left, students who take a hands-on approach to learning all aspects of racing “are the next generation carrying the sport forward.” That makes them valuable prospects for hiring into the performance industry.

a car that could become obsolete.

It also helps to have all your races televised on one network. If some of the races are on NBC, some are on Peacock, some are on USA, then customers can't watch every race unless they've got an abundance of subscriptions. I think that when the American Le Mans Series did live streaming, it was a disaster because no one had the bandwidth, and there were massive complaints about not being able to follow the race. Now it seems like everybody can easily watch the live stream of a race on YouTube. So it's massively more affordable to have your races live on a screen that's easily accessible to anybody.

There are some other things automakers

Dean Case said the SAE's Baja SAE and Formula SAE programs are purposely below the radar. They “exist to serve the needs of students and industry. That's the magic of it. There's never any intention to make them public spectator events.”

have to look at. Are you looking for people to engage in person? Are you just looking to generate a win? For example, you could argue that nothing's more difficult and challenging for drivers and teams than off-road racing, but off-road racing, in a PR sense, there's just no spectators. It's not viable for that. But if you do succeed there, in something that's production-based, that's pretty cool. But it's very challenging to justify spending a lot of money and oh, if we win, then we have to spend more



money to help promote it.

PRI: When an automaker decides to go racing, they typically go to an established, successful team. Is there anything in particular that they're looking to see in a driver, in a crew chief, or in a team?

Case: Elliott Forbes-Robinson had a great quote about how he was never paid to race a car. He was paid to go to sign autographs and go to sales meetings and go to dealerships and a whole bunch of other work. But he was rewarded by getting to race the car on Sundays. I think a lot of drivers have to understand that they are not just there to race the car. There's a lot of drivers who have talent behind the wheel, but they have to be more than that. They have to be a spokesperson for that brand. There may be a few companies that like a little bit of a rough-edge driver, but others want someone who's a little more polished. It's great if you've got a driver who speaks multiple languages, that's always a huge opportunity. Obviously here in the US, any driver who is also fluent in Spanish opens up a lot of opportunities.

You want drivers who are going to be on your message. You never have an engine failure. You never have a tire failure because everyone had the same equipment. Most of all, you don't want to do or say something that's detrimental to your career. I think we've all seen examples of drivers who've not been good. They were struggling in a race for whatever reason, and then they blamed the results on their car. They may be right, but is this really

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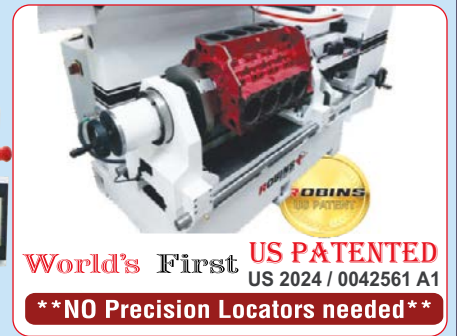
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Among Dean Case's varied PR postings was a stint at Nissan 20-some years ago, where he, far left, was involved with the launch of the 350Z and NISMO in the US. He recently returned to Nissan and is working on the maker's GT4 program.

someone we want on our team?

PRI: Let's talk about Formula SAE. It's kind of an obscure college program. A lot of people in racing have never heard of it. Why do you love it?

Case: Just for the record, Baja SAE predates Formula SAE. That was due to the generosity of Briggs & Stratton teaming up with SAE to give students a real-world project that you had to work on as a team. One of the great things about motorsports is that there are no deadline extensions. The green flag is going to drop, ready or not. With a lot of projects in corporate life, you get delays. Well, in motorsports, there are no delays. The race is going on with or without you. So projects like Baja SAE and Formula SAE teach students that deadlines are real, and you have to

cope with that. The reason they're below the radar is that there's never any intention to make them public spectator events. They exist to serve the needs of students and industry, predominantly the car companies and the motorsports companies.

If you're an automaker looking to hire engineers, do you have the bandwidth to

visit 50 or 100 schools? No way. You just wouldn't have the time or money. But if you can go to one event where you've got 50 to 100 schools with teams of 10 to 30 people each, you can meet 1,000 students over the course of three days and find exactly the talent you're looking for. It's that formula of providing a service to the industry and serving the needs of students at the same time. That's the magic of it. Also, the best teams are the ones who recruit non-engineering majors as well.

The teams used to be seniors who are

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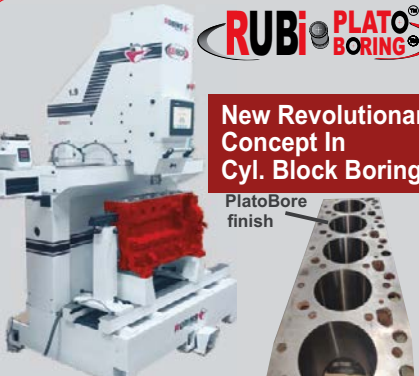
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mechanical engineering students. Okay, you got a car that's mechanically sound, but you probably didn't do anything creative on the electronics. The car may not be the most attractive thing in the world because you had no one from industrial design look at it. Also, the business proposal is probably pretty weak. The teams that really develop that other talent are the ones that really do well. Then if they successfully complete the project, they've proven they can produce a project on time, on budget, as a team. That's three critical skills that industry wants.

A lot of performance companies specifically now call out Formula SAE and Baja SAE. So if you didn't do it, it's almost like you're four years behind. I think most companies would rather hire a B student who was a vital team member than an A student who never did it.

PRI: To close out on Formula SAE, can you give me a one paragraph pitch of why a Formula SAE student is somebody that a motorsports business should want to hire?

Case: Because they've got the passion for the sport, and the joke is, they've spent four years learning great skills while lowering their GPA. The reality is these are the ones who are the next generation carrying the sport forward. We could all make the joke that certain sanctioning bodies could merge

with AARP, and no one would know the difference. This is the solution to that, because anybody who tells you young people are not interested in racing is not hanging out with the right young people.

PRI: Your other great passion is helping shelter animals. You've done more than anyone to link motorsports with the cause of animal care. Tell us how that benefits motorsports as well as benefiting the animals.

Case: This started out when I was working with a lot of young drivers on the lower rungs of the sport. If you're a young driver, it doesn't matter what series you're in, you can't go to Coca-Cola for a sponsorship. What I've been telling drivers all along is that a blank race car is a wasted opportunity. If you cannot sell it to a corporate sponsor, then tie it to a nonprofit and don't ask the nonprofit for money, just provide value to them. That opens doors that you never would've expected. I wanted to do a demonstration program to show how I could generate positive coverage. So as my pet project, pun intended, I chose shelter animals because that meant something to me. I was just so gratified with how well it took off. The reality is, there's a lot of people who care about racing, but there's a lot more people

who care about dogs and cats. So it got us coverage in areas that we wouldn't have otherwise. We were able to get coverage not on the front page of the sports section; we got on the front page of the whole paper. It works because the shelter knows different people at the TV station, for example, than we know.

There are similar examples like IMSA driver Kenton Koch. I don't think he would mind me mentioning that his mom had a heart transplant. His car carries livery for organ donor awareness. How compelling is it when your mom's alive because of this? So he's a great spokesperson for that. MX-5 Cup and Le Mans driver Marc Miller did autism awareness because he has an autistic son. I remember when I forwarded his press release, two journalists reached out to me and said, "I have an autistic son, too. This gives me an excuse to write about this in my column."

When you do some of these things, I like to say, don't do it thinking that some charity's going to write you a check, but you then start going to events. You bring your race car and put it on display at that charity function, and then you're going to meet the executive from some company who writes a big check to that charity; someone you never would've met otherwise. It gets you in new circles, but it also gets the sport coverage in areas where they just do not care about the sport. I think that people can find something, whether it's your local art museum, Habitat for Humanity, or there's so many great causes out there. This is a way to do some good in the community and hopefully generate additional coverage for the sport and your team, and hopefully find additional business partners who want to invest in your team for purely business reasons. **PRI**

To learn more about SAE and how both motorsports companies and students can mutually benefit from its programs, Dean Case will present "SAE: Finding Tomorrow's Talent Today," part of the PRI Education program, from 12:00 p.m. – 1:00 p.m. on Saturday, December 14, in Meeting Rooms 231–233 of the Indiana Convention Center.

"I knew from an early age I wanted to be in motorsports," Dean Case said, though as a young engineering student he probably didn't foresee moments like this, which he tongue-firmly-in-cheek described as "the glamour of the 24-hour race."



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If you want to understand how to relate to Generation Z, there's a quick answer.

"They want to know that it's real. They want to know what's true. It needs to be believable," said Brandon Scarpelli, the founder and CEO of The BMS Brand, a social media management, content creation, and advertising firm based in Austin, Texas, that specializes in the automotive and motorsports industry.

Real. True. Believable. In short, that's the starting place for relating to Generation Z—the population bloc of nearly 70 million Americans born between 1997 and 2012.

This generation has a new mentality, and it starts with authenticity. While pessimists insist kids can't unglue from their phone screens long enough to bother looking through a windscreen, Gen Z is coming of age, and our collective success depends on them. With millions already in the workforce and more joining every day, the automotive industry needs to move quickly to capture Gen Z's attention and steer them into car culture—from the track to the street—before it's too late.

BEREAL

Launched in 2020, BeReal is a new social media app that became popular with younger demographics due to its unfiltered, authentic content. Users receive a notification at a random time each day and then have two minutes to post a real-time photo of themselves—no filters, no editing, no ads. The appeal is the authenticity it provides.

A digitally native generation that has grown up with unlimited content at their fingertips is not one you'll reach through traditional advertising strategies. Instead, connecting with them requires coming from an authentic and genuine place. You need to "BeReal."

We can find an example of this in motorsports sponsorships, where Gen Z has forced a reckoning in the status quo.

SPECIAL REPORT

Z

FACTOR

By Jack Haworth

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Formula DRIFT star Matt Field lights the tires in Long Beach, California. Field and his team at The BMS Brand have leaned into the power of collaborative partnerships that are more authentic and “resonate best with Gen Z.” Photo courtesy of Larry Chen.

“Gen Z sees right through it, they are not part of the sponsorship world,” said Scarpelli. “So what we try to do is build partnerships.”

The two words may sound similar, but there are significant differences between sponsorships and partnerships. A traditional monetary sponsorship usually involves a company cutting a check and a team placing its logo on the car, but a partnership requires continual collaboration between both parties.

“The partnership is something that is a day-in, day-out collaborative effort to make sure both us and the partner maximize their ROI,” said Scarpelli. “When the effort comes from both sides, a lot more authenticity comes out of it, and that’s what resonates best with Gen Z.”

The rise of partnerships creates better opportunities for companies to work with drivers or teams that actually use their products. Scarpelli has found success deploying this partnership strategy for Matt Field, a top-ranked Formula DRIFT driver that the BMS Brand manages.

“The way we approach building out [Matt’s] program starts with all the companies and products that he would use even if there wasn’t a check there,” explained Scarpelli. “There’s a natural integration there, and that’s where you’re able to start signing multi-year contracts. The one-and-done [sponsors] are usually the ones we have to force.”

For companies nowadays, obtaining third-party validation is more important than ever. That’s why an active partnership, rather than a static sponsorship, is a much more valuable marketing tool for companies trying to reach younger demographics.

“You need to be touting how great your

“WE’VE SEEN A LOT MORE PICKUP OF FEMALE CAR ENTHUSIASM, AND THAT LARGELY STARTS IN THE YOUTH MARKET.”

products are and how much different they are from your competitors,” said Scarpelli. “But it’s having that third party validation coming from a trusted source that seals the deal. When the other person starts saying positive things about your company, it just reinforces everything that you’re doing.”

When looking at segments of motorsports finding the most success with Gen Z, drifting is arguably at the top of the class. With two decades under its belt, Formula DRIFT is largely responsible for bringing drifting into the forefront of American motorsports, yielding consistent yearly growth both online and at the track. Smoking tires, quick runs, and a lively environment help fuel the success, but Scarpelli believes the biggest key is a relatable on-track product.

“Formula D has restricted the rules in certain areas so that for the most part, every car [on-track] and the parts that are on them, you can go buy and build,” he explained.

The Formula DRIFT paddock includes a wide array of cars, many featuring unique powerplant swaps and “Frankenstein-type” builds that give the sport an authentic, grassroots feel. The cars on track are the same cars you’ll see on the road.

“It makes that instant connection a lot easier for people because it’s no longer where [fans] are just rooting for the driver, they’re also rooting for the car,” continued Scarpelli.

Additionally, thanks to reasonable costs and a manageable licensing system, there’s a realistic path to getting on-track for anyone who puts in the effort, Scarpelli noted. “It’s somewhere in the three- to four-year range that you could literally go from making the decision to [be a pro Formula DRIFT driver] to being at the highest level of competition in the world. What other racing series can you do that?”

EVOLUTION OF THE EXPERIENCE

If drifting offers a quintessential example of how to attract a new generation demanding authenticity, NASCAR is facing a challenge that may sound familiar to many in our industry.

“There’s no issue with awareness or understanding what we do,” explained Pete Jung, chief marketing officer of NASCAR, Daytona Beach, Florida. “It’s just evolving so you’re relevant for the next generation of fans and sponsors.”

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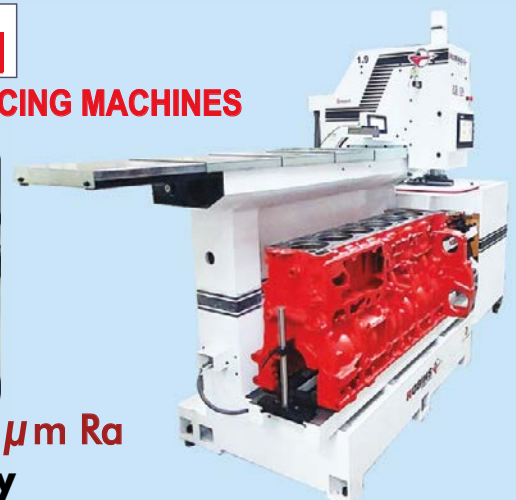
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using highly specialized parts. While the racing is compelling, many people struggle to relate to stock cars built without many stock components.

"There's been a perceived relevance gap in the past," said Jung. "One of the areas that we've worked hard at is just making it more relevant and common in pop culture."

This relevance gap has forced NASCAR to start thinking outside the track. "How Gen Z defines the NASCAR experience is much broader," said Jung. "I think the biggest thing is not being so focused on the racing, but rather the community and the broader experience."

NASCAR still puts lots of energy into the on-track action. In fact, the sanction overhauled its Next Gen Cup car for the 2022 season, integrating more relevant technology ranging from an independent rear suspension to a new transaxle. Nevertheless, NASCAR recognizes racing alone won't be enough to sustain the sport in the future. It requires a multi-faceted and different approach.

"The biggest challenge is getting people to understand that it takes time, and how we present ourselves to younger audiences needs to be really authentic," said Jung.

To better understand what younger audiences will be receptive to, Jung's team partnered with Knit, an on-demand insights platform that provides NASCAR with valuable feedback, surveys, and focus groups from a community of thousands of Gen Z members. "This community guides a lot of what we do."

Jung is pleased with the progress the sport is making. A self-described "culture of try and measure," NASCAR is working to expand its reach off-track by leaning into fashion-focused merchandising deals, online sports betting, and sim racing. In fact, 2024 Daytona 500 winner William Byron got his start on iRacing, a leading sim racing platform that partners with NASCAR.

NASCAR is also making strides in the content creation department. It partners with social media influencers on various platforms including TikTok, several drivers and industry personalities now have weekly podcasts, it launched a five-episode Netflix series, and opened a new state-of-the-art production and content headquarters in Concord, North



From virtual sim racing competitor to 2024 Daytona 500 champion, William Byron's path to NASCAR stardom is very different from the previous era of drivers. But embracing new ideas, career paths, and generations—that will be the key to our industry's future success.

Carolina. The goal is to create "way more output of original content."

This evolution will take time, and while Jung admitted "there is no one silver bullet," he believes NASCAR's diversified approach to growing interest among younger demographics is working. "[NASCAR] is integrated in pop culture more than it was maybe 10 or 15 years ago."

The most significant motorsports pop culture phenomenon belongs to Formula 1 and its smash-hit Netflix series, "Drive to Survive." On a scale of relatability, the elite world of F1 would seemingly rank near the bottom. Nevertheless, there's no denying that "Drive to Survive" struck a chord with younger demographics.

"'Drive to Survive' is giving people the access they've never had," said Scarpelli. "They found the right stories to tell and then took the filters off and let these guys come to life."

Good storytelling brings out the authentic personalities behind the drivers and teams

of this otherwise ultra-exclusive motorsport. It's worked for the sport by creating legions of new fans, dropping the average age of F1 viewers to 32, and nearly doubling female interest, according to a recent global study of more than 167,000 fans commissioned by Motorsport Network.

Gen Z's growing interest in legacy motorsports like NASCAR and F1 is a good sign for the overall automotive aftermarket industry. However, it also suggests that success will require an evolution in how our companies create content, engage in partnerships, and ultimately, tell brand stories.

EMBRACING CHANGE

The "win on Sunday, sell on Monday" mantra is mostly considered a relic of the past. However, motorsports remains a critical testing ground for everything from performance parts to marketing tactics.

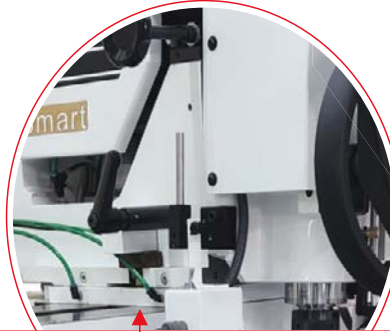
The factors that drive interest in the racing sector offer valuable lessons and insight that all automotive-related businesses can utilize to their advantage. One of the key takeaways is that to gain Gen Z's attention and business, companies will need to meet them at their interest points and car platforms.

"When you think about our industry across the board, especially at the shop level, it's really about being open to what platforms these young kids can get into," said Gavin Knapp, director of market research at SEMA,

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Twenty-four-year-old Jack Davis grew up playing with an RC drift car, now he's working his way up to the top level of motorsports. He cites educational content as an effective way to "show these younger people that it is possible to build a cheap car and have fun." Photo courtesy of Chris Story.

Diamond Bar, California. "The [cars] are likely going to be from the 1990s or 2000s, not from the 1950s or 1960s. Our industry needs to remember that and be looking to foster that growth into these other platforms."

Since car prices are skyrocketing in recent years, and most classic cars are well out of the price range of younger generations, Gen Z is much more likely to be accessorizing a Civic rather than a Camaro. However, the most important factor is that they are still accessorizing.

In that regard, a recent SEMA Market Research report on youth interest in accessorizing cars found good news. Nearly one-third of young drivers (ages 16–24) accessorize their cars—one of the highest rates of any age group—resulting in \$7.2 billion in annual spending. Expensive new cars may be out of reach, but accessorizing provides young tuners with the opportunity to personalize and improve their first rides.

"Our data says they still like cars, they like to personalize, and young people spend a huge amount in the industry," said Knapp. "Young people are doing the most ambitious builds and buying those kinds of parts. That to me says our industry isn't drying up."

Beyond the typical bolt-on parts—wheels, tires, suspension, exterior mods—that have been staples of our industry forever, there are certain trends popular among youth. Jack Davis, a 24-year-old Formula DRIFT PROSPEC driver, has found "common modifications for younger tuners span a wide range, but one common practice is lowering the car's suspension to achieve a sleeker, more aggressive stance." Davis also touted the popularity of aftermarket wheels and tires as a means for "enhancing both the appearance and handling of the vehicle."

Additionally, there's another valuable data point moving in the right direction that deserves attention. Women make up a growing part of the market share, creating one of the biggest opportunities for growth. According to the SEMA report, women now make up nearly one-third of all young people who accessorize their cars.

"We've seen a lot more pickup of female car enthusiasm, and that largely starts in the youth market," said Knapp. "If we can encourage that, it brings in a lot bigger opportunity than probably anything else we could do."



A team of high school students tear down and rebuild an engine at the Hot Rodders of Tomorrow national championship at the 2023 PRI Show. Each team is sponsored by an aftermarket company, fostering new opportunities for youth to get involved in the motorsports industry.

INVESTING IN THE FUTURE

The 70 million members of Gen Z now range from 11 to 26 years old. They are both the future and the present of our market.

"The reality is, even if more kids are slow at getting their own cars, the accessorization industry is still a young person's game," said Knapp. "When we look at the numbers, over half of what's spent on accessories every year is done by people under 40."

"GEN Z IN PARTICULAR IS BIG ON EDUCATION, HOW-TO, AND COMPARISONS."

Most kids won't start accessorizing until they reach their early 20s. Not necessarily due to a lack of interest, but rather a lack of funds. But even though it'll be a decade until the youngest Gen Z members reach accessorizing age, millions of this generation have already reached that point. As for the youngest ones, now is a critical time to draw them into the automotive world and spark that interest.

"They see everything online, but they probably don't have enough expendable money to start doing things to their car," said Scarpelli. "You're meeting them in that interest space."

One company using motorsports and education to spark youth interest in the automotive sector is QA1, a Lakeville, Minnesota-based company that specializes in high-performance suspension and driveline products.

In 2018, QA1 approached a local school district to apply for SEMA's Elementary Educator's Grant, an initiative to help encourage students to get excited about the automotive customization hobby. After collaborating with teachers, they developed Engineered for Speed, a program team-taught by an elementary STEM teacher and QA1 engineer to 5th grade students at all eight elementary schools in the Lakeville Area School District.



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"We've seen a lot more pickup in female car enthusiasm and I think that largely starts in the youth market," said Gavin Knapp, SEMA director of market research. Accessibility and authenticity, as is found here in the Formula DRIFT paddock, will go a long way toward furthering that trend.

QA1 provides a pinewood derby-style car kit to students, while their engineers use lessons from motorsports and the hands-on experience of building the car to teach students about complex subjects including aerodynamics, momentum, and friction.

"Kids at this age are very eager to learn, and they are always very excited about building and racing the cars," said Chuck Olson, VP of engineering at QA1. "We can effectively use the fun of motorsports to teach topics that could otherwise seem boring."

Using principles of motorsports, the students build cars to compete in a culminating event—The Race for Speed and Distance—for which winning carries major bragging rights on the playground.

"Many of my students chose to come in my room to work more on their cars, even during recess," said Dawn Coats, a teacher at Lake Marion Elementary. "I think the more we can share with students about what possibilities are out there and teach the foundation for these possibilities, the more we will see motivation and excitement toward industries like motorsports."

The program has now reached more than 2,500 students, with the first class of students now in 9th grade. It's a great example of how automotive companies can invest in education and plant the seeds of inspiration for the next generation.

"Essentially, all 9th grade students in Lakeville know about QA1, have met their engineers, and experienced the passion

behind the automotive industry," said Cindy Nolan, a Lakeville Area teacher who helped coordinate the program. "Next year, the majority of these students will enter the workforce."

Tapping into education is one of the best marketing tools a company can use to attract younger demographics. In fact, education is high on the list of Gen Z's interests.

"Gen Z in particular is big on education, how-to, and comparisons," said Scarpelli. "I think it's how you go about doing those things to educate that fan base, keep them excited, and keep them buying."

Davis agreed, citing education as one of the most effective ways to appeal to his generation. Even more important, he explained that education also serves as motivation and inspiration for getting young people involved in racing or tuning.

"Providing accessible resources can empower enthusiasts to become more involved and knowledgeable," said Davis. "Show these younger people that it is possible to build a cheap car and have fun. Show them you don't have to be super wealthy or the best mechanic. I think anything is possible if you're willing to learn and willing to fail."

That last piece of advice is something we can all take stock in, especially when it comes to appealing to a younger generation. Gen Z is authentic, experience-driven, eager to learn, and most importantly, the future.

The passing of the torch is underway. It's time our industry embraces it or gets left behind. **PRI**

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George Poteet

1948 - 2024

24

Land Speed
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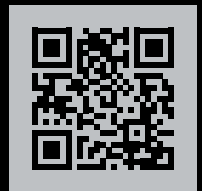
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PRI SHOW PREVIEW: OFFSEASON SUCCESS STARTS IN INDY

Retool your race program, refresh your knowledge, and reinvest in your business at the PRI Show, December 12–14, in Indianapolis, Indiana.



By Jack Haworth

As the 2024 race season approaches its white flag lap, the offseason is around the final corner. While we'll miss the bustling race tracks and roaring engines, the winter months offer a time of renewal for our entire industry. From drag racers to drifters, engine builders to track promoters, offseason success will pay dividends throughout 2025. As any industry member can attest, all roads to offseason success go through the PRI Show on December 12–14, held at the Indiana Convention Center (ICC) and Lucas Oil Stadium in downtown Indianapolis, Indiana.

"The PRI Show features a cross pollination of disciplines and a pure business racing environment," said Jim Liaw, general manager of PRI. "You don't get this any other time of year or anywhere else. It's important to be there."

The most influential business event in motorsports, the PRI Show unites all disciplines of motorsports under one roof. In addition to educational programming and engaging activations, the Show floor will be buzzing for three high-octane days of dealmaking and networking.

With thousands of racing entrepreneurs in attendance from more than 70 countries, the 2024 PRI Show will include more than 1,000 companies and well over 3,500 booths exhibiting across 750,000 gross square feet of space. Buyers will have access to the newest race products, services, machinery, simulation and testing technologies, trailer exhibits, and much more.

For any motorsports-related business, there's a good chance the PRI Show is already an annual tradition. If not, you're



missing out on the offseason's best opportunity to retool your motorsports program, refresh your knowledge, and reinvest in your business.

MUST-SEE SHOW EXHIBITS

Introducing new disciplines or ideas to our industry will always be important—more on those later—but our most popular features and exhibits simply can't be missed.

For race teams, engine builders, and fabricators, Machinery Row is the place to be. Located in the Yellow Hall, this popular exhibit will feature more than 100 manufacturers, each demonstrating the capabilities of their latest precision automotive machining equipment. Buyers will be able to talk to company representatives, watch machines perform live demonstrations on actual race parts, and hopefully score a "show deal" on a new machine.

For racers looking to find a competitive

edge, the Featured Products Showcase (FPS) is a smart place to start. Located in the ICC Capitol Connector near the Yellow Hall and Georgia Street entrance, the FPS is a great opportunity for buyers to learn about dozens of new race products and companies before even hitting the Show floor. Additionally, products included in the FPS will be considered for Featured Product Awards, which are determined by a panel of top racing industry professionals.

Lucas Oil Stadium is the place to see our newly expanded trailer exhibit. The perfect opportunity to comparison shop, the entire field area will be transformed into a massive display of state-of-the-art trailers, motorhomes, toterhomes, and more. The PRI Show is the best place to solve your race team's transportation needs.

On your way back from Lucas Oil Stadium, swing by the PRI Paddock, located by the Hanging Race Car. Upgraded for 2024, the

PRI Paddock will provide helpful information about the Show, while an adjacent live studio features a full schedule of popular motorsports podcasts.

Our popular opening day festivities—the Grand Opening Breakfast and the PRI Happy Hour—will both return in 2024. The Grand Opening Breakfast will officially open the PRI Show on Thursday, December 12, featuring a talk-show style interview between Ralph Sheheen and special guest Travis Pastrana. Meanwhile, the PRI Happy Hour will close out opening day of the Show with complimentary beer, appetizers, and live music in Lucas Oil Stadium.

(SIM) RACING INTO THE FUTURE

Sim racing has exploded in popularity in recent years, with everyone from amateurs to professionals embracing the possibilities of virtual racing. In 2023, sim racing made its



If the PRI Show is not already an annual tradition for your racing business team, make plans today to view the newest in race parts and services in Indianapolis, December 12–14.

debut at the PRI Show and was an instant hit.

"Anybody who walked into Lucas Oil Stadium last year to see the sim racing area could see that the energy, the traffic, and even the demographic was different," said Liaw. "We had new exhibitors that came in, and it definitely proved that we need to continue to pay attention to, reinvest in, and focus on that area."

Drafting off that success, the 2024 PRI Show will expand the sim racing area to accommodate more exhibitors, more booths, and yes, more sim sleds that will be available to demo throughout all three days of the Show.

Beyond the exhibit area, attendees will also see a return of the PRI SIM Racing Arena presented by SRO Motorsports Group America. The Arena will feature daily

invitational sim races on Assetto Corsa Competizione, the official simulator for Fanatec GT World Challenge powered by AWS, for sim racers and professional drivers. The feature races will provide 28 invitational slots in two sanctioned classes—Sim Pros and Real World Pros—with races streamed live to SRO and PRI's livestream platforms.

It's all part of our effort to introduce the broader industry to one of the fastest growing disciplines in motorsports. The racing may be virtual, but the competition and economic potential are very real.

"Sim racing is an area where we are seeing growth," said Michael Good, president of PRI. "I'm personally excited about that, as I think it's a great catalyst to bring the younger generations into the sport and give them a glimpse of what it's like to

be on a track."

Beyond welcoming newcomers into motorsports, PRI also believes sim racing provides an exciting opportunity for traditional motorsports brands to engage in this emerging space.

"Sim racing provides an opportunity for brands at the PRI Show," said Liaw. "Maybe not all, but a number of brands can get involved in the sim space because the more elaborate the software is, the more opportunity there is for brands to be involved from both a technical and branding standpoint. Once again, it's about that cross pollination of disciplines."

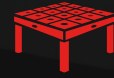
The PRI Show presents an ideal opportunity to talk with representatives from leading sim racing companies. Not only can this help traditional racers better understand

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what sim racing is about, but also if sim can help grow their business.

“Ultimately, the PRI Show is about trying to grow and elevate the industry as a whole,” said Liaw. “If there’s this discipline that provides benefits by building future motorsports customers, while also providing a medium for motorsports brands to promote their products, they should absolutely be incorporated as part of the Show.”

LEARNING OPPORTUNITIES

If discovering new products and making valuable connections are two key pillars of the PRI Show, education is the third. To ensure attendees leave Indianapolis equipped with knowledge to go faster and grow their business, we’re offering 13 curated education sessions free of charge for attendees.

Several of last year’s most popular sessions will be returning but with new content, including Online Advertising Lessons from Bryan Robb of Digital Throttle, a Women in Motorsports panel moderated by Jeanette DesJardins of CarChix, and Sponsorship 101 from industry veteran Alex Striler. Other PRI Education sessions will cover topics ranging from simulators to social media, tuning techniques to torsional harmonics. A complete list of education sessions, times, and speakers can be found on PRI’s Map Your Show or visit online at bit.ly/PRIeducation.

Beyond these PRI Education sessions, a variety of motorsports-related conferences will also be held in Indy in conjunction with the PRI Show. Notable conferences include the Race Track Business Conference (RTBC), the NHRA Member Track National

Conference, the International Council of Motorsport Sciences (ICMS) Annual Congress, SFI Foundation Motorsports Forum, AERA EPIC Conference, and Women with Drive Summit IV presented by Women in Motorsports North America (WIMNA).

The Women with Drive IV Summit is an exciting addition for 2024, with hundreds of motorsports industry representatives expected to attend. The summit will take place Monday, Tuesday, and Wednesday, December 9–11, and feature three days of speakers, sessions, and networking. The goal is to provide resources, mentorship, coaching, and career connections for women across all disciplines of motorsports.

“We’re excited to have WIMNA and their team here for their big event,” said Good. “Executive Director Cindy Sisson is driving positive change and having such



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Travis Pastrana will join Speed Sport's Ralph Sheheen at the Grand Opening Breakfast on Thursday, December 12. Doors to the Sagamore Ballroom will open at 7 a.m. and the program will begin at 7:30 a.m. Arrive early to get your seat and a complimentary hot breakfast.



an impact across all of motorsports with WIMNA's initiatives."

The RTBC, which will take place on Wednesday, December 11, features a full day of eight panel discussions with leaders covering all aspects of the industry. Both the NHRA and ICMS conferences will take place on Wednesday and Thursday, December 11 and 12. ICMS will also hold a Racetrack Safety Program on Friday, December 13—a hands-on training session open to anyone working in track fire and safety. AERA's event will take place on December 11. Meanwhile, the SFI Foundation will host a

detailed presentation on trends, learnings, and processes in SFI motorsports safety on Friday, December 13, in Room 210. It will be open to all sanctioning body leadership.

"These conferences also carry over to all the Show programming, workshops, seminars, Show floor, and feature areas," said Liaw. "So if someone has the time, now they can come in on Monday, leave on Sunday, and have multiple days of programming that are beneficial to them."

More conferences and registration details can be found at <https://bit.ly/PRIevents>.

MAKE YOUR PLANS NOW

The Show is fast approaching, and making a plan is the best way to maximize your time and resources in Indy.

Downloading the PRI Show App is the easiest way to ensure you can successfully navigate around the Show. Attendees can use the app to search exhibitors and products, navigate the floor plan, review conference and seminar schedules, obtain details on special events, and create a personalized Show agenda. Additionally, they'll be able to reach out to exhibitors and request appointments—a great way to

Continued on Page 48

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T.O.P.S.

If race tracks are the thumping heartbeat of our industry, the promoters, track operators, and sanctioning bodies are the glue that keeps us charging forward.

To recognize their value and contributions to our industry, PRI ensures this essential group has their own “home” during the PRI Show, December 12–14, in the T.O.P.S. (track operators, promoters, and sanctions) Headquarters presented by MyRacePass.com.

Located in Rooms 130–136 in the 7000 hallway of the Indiana Convention Center, entry is free with a valid Show badge with race track or sanction affiliation.

“We understand the importance of track operators, sanctioning bodies, and promoters to PRI,” said Tom Deery, PRI track ambassador. “As their trade organization, PRI wants to make sure we’re there to service them.”

“On the Show floor, we’re talking about a lot of parts,

technology, and hardware that’s involved,” said Jim Liaw, general manager of PRI. “But the other side of it is, where do those cars go racing? Tracks and promoters are part of our larger racing ecosystem, and their health is vital.”

The T.O.P.S. HQ was first introduced at the PRI Show in 2021. Deery explained it was a relatively simple idea to provide a “getaway space to get out of the hustle and bustle of the trade show floor.” However, the T.O.P.S. HQ education sessions and programming have grown quickly.

“We started out the first year with a couple sessions, and last year we had 18 or 19,” said Deery. “This year we’ll have probably 25 different meeting groups that will take place.”

The sessions will cover a wide range of topics including roundtable discussions about paved oval tracks, pulling groups, go-kart racing, dirt track, drag racing, road racing, and more. Beyond the roundtables, there will be various education sessions dedicated to website and social media marketing strategies, technology updates for ticketing and event management, updates about race tires and fuel, and more. A full schedule of T.O.P.S. sessions will be available online at performanceracing.com after

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“One session will include the SCCA President Mike Cobb and IMSA President John Doonan,” said Deery. “They’re going to do a roundtable sit-down discussion about the nuts and bolts of road racing. They’ll be looking to really explore, share, learn, and meet the people who make road racing happen.”

Beyond the education and discussions, T.O.P.S. HQ will once again host BS and Brews Happy Hour on Friday night, December 13. “BS and Brews is becoming a bit legendary and is a great opportunity to kick back a little bit,” explained Deery. The event will offer complimentary beer, snacks, and plenty of networking opportunities for track operators and peers.

BS and Brews may be a fun highlight, but it also encapsulates the overall goal of the T.O.P.S. HQ: bringing race promoters



together to learn, connect, and succeed.

“At one table we might have people from a drag strip, a go-kart facility, and a tractor puller,” said Deery. “But they’ll be talking and probably realizing they all have many of the same challenges or opportunities.” —*Jack Haworth*



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Continued from Page 44



Bryan Robb of Digital Throttle will present an updated version of Online Advertising Lessons, part of the 13 PRI Education sessions at the Show.

maximize your time in Indy.

“The fact that the PRI App is at your fingertips, and you don’t have to worry about pulling out a big map, is nice,” said Karin Davidson, PRI Show director. “The app has all the current information, anything that you need to know about the Show—events, booths, exhibitors, sessions, and more.”

Finally, make sure to book hotel and restaurant reservations well in advance of coming to Indy. We’ve partnered with the Visit Indy Housing Bureau to ensure racers get the best possible deals on rooms during their visit to the Show. Further information regarding lodging and travel can be found at performanceracing.com/trade-show/hotel-travel.

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NEW PRODUCTS AND EQUIPMENT ARE THE HALLMARK OF THE PRI SHOW, AND THESE FIRST-TIME EXHIBITORS WILL DISPLAY A VAST SELECTION TO CONSIDER ADDING TO YOUR INVENTORY OR IMPROVING YOUR RACING PROGRAM.

By Meredith Kaplan Burns

Seeking advanced technology and innovative, cutting-edge products are what drive the motorsports industry to the annual PRI Show, and this year the Show has added approximately 100 new exhibiting companies to debut products and services that currently may be unfamiliar to showgoers.

These new companies offer products and services that will be displayed throughout the Indiana Convention Center (ICC) and Lucas Oil Stadium, so make a plan to walk the aisles and look at companies that may not normally be on your radar. You never know what new product, piece of equipment, or service will enhance your business and make 2025 the most profitable year yet.

LIGHT IT UP

As a veteran exhibitor of AAPEX and SEMA, STKR Concepts in Troutman, North Carolina, decided to exhibit at the PRI Show because, according to Amy Westerberg, the company “heard great things about PRI from industry colleagues and decided it was time we got on board.

“This industry is a perfect fit for our line of innovative automotive work lights, shop lights, and garage accessories,” she continued. “Our goal is to meet face-to-face with buyers as well as industry professionals to not only introduce them to our product line, but also to learn more about their current needs. Being part of the industry is important to us, and events such as these are a great way to bring us all together.”

The line of STKR Lighting isn’t contained to just one segment of the motorsports industry, reported Westerberg. “From race teams to weekend warriors, all motorsports enthusiasts and professionals need good lighting by their side. STKR has them covered with lighting for the garage, task lighting, work lights, pit lights, etc.”

STKR continuously adds new products to its lineup. Expected to be at booth no. 2613 is the STKR FLEXIT Underhood Light, which is a fully flexible, easy-to-store, underhood LED light band that can expand up to 6 feet to light a full engine bay. It boasts 1,000 lumens of brightness, four light settings, and magnetic capability.

EXPANDING MARKET

Those involved in kart racing are likely already familiar with FHS Supply Co., based in Clover, South Carolina. The company has served the motorsports industry since 1969, with a focus on karting with its line of two- and four-stroke synthetic racing oils. The company recently expanded its full-synthetic oil offerings to include high-performance racing motor oil, smokeless motor oil, and gear oil.

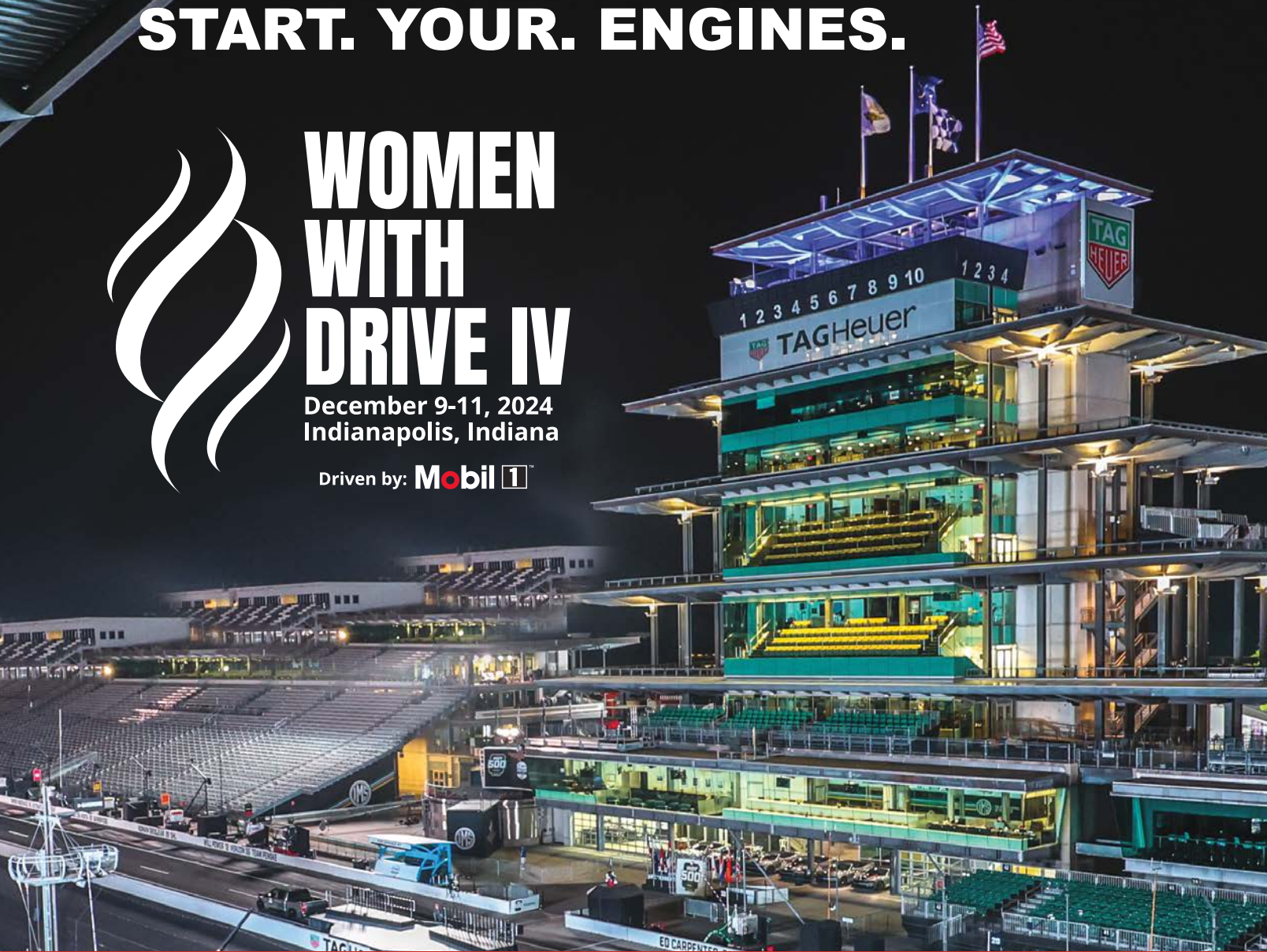
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After hearing about the success other companies experienced by exhibiting in the PRI Show, Amy Westerberg of STKR Concepts explained, "This industry is a perfect fit for our line of innovative automotive work lights, shop lights, and garage accessories." The company's goal is to meet personally with buyers and introduce them to the company's product line and learn more about their current needs.

According to Daniel Cordova, exhibiting in booth no. 2032 of the PRI Show "is the logical next step for us as we work to grow our footprint in the performance racing industry. Besides promoting our lines of synthetic motor oil and gear oil, one of our main goals at the PRI Show is to strengthen our existing relationships and establish new ones across the motorsports industry."

In fact, FHS will display its newest addition



to its product line, which is FHS full-synthetic high-performance racing motor oil. "With a distinctive blue color, it includes a special anti-wear additive to protect high-performance racing engines. It is available in SAE grades from 5W-20 to 20W-60," which are available in quart and gallon cases, said Cordova.

TRACK CLEANUP

Cyclone Motorsport in Wellesley Island, New York, is exhibiting at the 2024 PRI Show in booth no. 6117 to educate race track owners and operators about the technologies available to improve their racing events, according to Kurt Pearson. "We offer high- and ultra-high-pressure full recovery hot water cleaning for racing surfaces that can solve

FHS is a well-known name in the karting community and the company has expanded its full-synthetic oil offerings to include high-performance racing motor oil, smokeless motor oil, and gear oil.

many challenges for track operators. Cyclone Technology can remove wet spills in one pass, deep clean tracks to enhance racing lines, and improve friction.

"Cyclone Technology has been trusted with some of the world's premier open wheel racing circuits to clean and prepare tracks in Las Vegas, CoTA, and Miami," Pearson added. "We would like to share those results and open new relationships to help track owners and operators. Cyclone equipment is available for rent or purchase; or Cyclone Clean can provide full services for track preparation that includes Skidabrader texturing services, marking removal and placement, FOD RAZOR, and Buffalo Blower services."

Cyclone Technology will introduce to the motorsports world its full recovery, 180-degree water, high-pressure cleaning systems to improve racing surfaces and facility aesthetics, recover wet spills, and remove stripes and rubber. The Cyclone Clean line of water-based non-caustic treatments for oil, rubber, paint, and stain removal offers economical solutions to clean hard surfaces in racing facilities, enhancing the racing experience on and off the track.

THAT'S NOT ALL

These aren't the only companies to consider visiting as the entire ICC and Lucas Oil Stadium are filled with more than 1,000 overall exhibitors. New to the PRI experience this year are race track Coles County Speedway, race event promoters Indy Pro Street Invasion and Nopi, sanction WDRA, manufacturers Lemons Headers, Webco Industries, FERTAN, BOOST Products USA, Freedom Race Lifts, Counteract, and many more.

When searching for new products to add to inventory or equipment to use, stop by the Featured Products Showcase, which is located at the Capitol Street entrance of the ICC. Hundreds of items submitted by PRI Show exhibitors will be displayed, allowing attendees to get a preview of what is on the Show floor. Each product has a detailed description next to it along with the exhibitor's name and booth number for easy reference.

With the tens of thousands of products and equipment on display at the PRI Show, you are guaranteed to find something new to improve your race program or business. **PRI**



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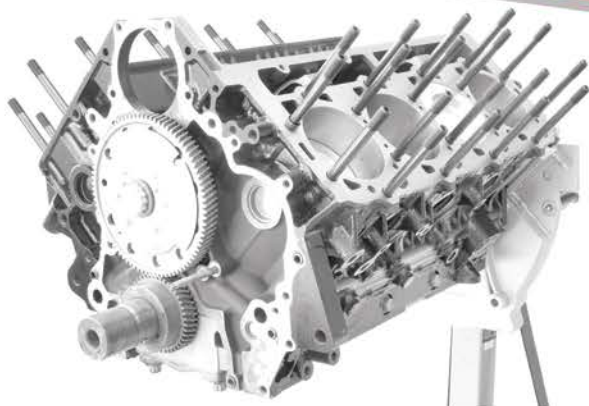
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By Drew Hardin

While UTVs were developed originally as working machines—the “U” stands for “utility” after all—these days UTVs have found a huge following in off-road recreation. Industry trackers estimate 2023 UTV sales at some \$6 billion and expect the category to grow by 5% annually between now and 2032, driven largely by demand in the recreational segment.

“Powersports continues to expand simply because it’s a tremendous form of outdoor entertainment,” said Michael Mathis of Atturo Tire Corporation, Waukegan, Illinois. “UTVs allow you to go off-roading without having to expose your regular daily-driver street vehicle to damage. There are more places that are accessible to UTV use than there are to street vehicles going off-roading. And that translates over into motorsports.”

Photo courtesy of SCORE International

We spoke to several off-road race sanctioning organizations for this story, and all of them talked about the growth they see in UTV racing. Matt Martelli of UNLTD Off-Road Racing of Vista, California, said UTVs “make up our biggest class, and it continues to grow.”

Bryan Folks of the Best in the Desert (BITD) racing series, based in Las Vegas, Nevada, agreed that UTV racing “continues to grow” within the off-road race industry as a whole.

Dave Cole of Hammerking Productions in Temecula, California, said UTVs are his “biggest area of growth.”

The UTVs racing at King of the Hammers are “game changing in their essence,” said Dave Cole, approaching the performance of the unlimited Class 4400 cars.

“THE OPPORTUNITIES TO GET INTO A STOCK CLASS WITH RELATIVELY LITTLE MODIFICATION TO THAT FACTORY MACHINE ARE FAR SUPERIOR TO ANYTHING YOU COULD DO WITH A STREET VEHICLE TO GO OFF-ROAD RACING.”

And Jim Ryan of SCORE International in Reno, Nevada, said SCORE’s UTV entries “have accelerated dramatically in the last three to four years.” They have also become the “go-to vehicle for pre-running,” he said. “Even the Trophy Truck teams are using them.”

There are several reasons for the growing number of UTVs in off-road racing, and a lot of them have to do with how remarkably low the barrier of entry is to race a UTV, making it a form of motorsports that nearly anyone can do. In fact, “the barrier to entry has been reduced to almost nothing,” said Cole. “For

someone sitting at home and thinking, ‘I want to try that,’ it’s easier to get into a UTV and race than getting in a roundy-round car or a Miata. UTVs have really changed that.”

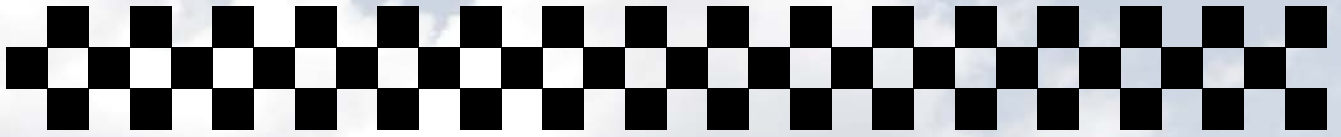
OFF THE SHOWROOM FLOOR

One of the biggest drivers of UTV popularity is the wide selection of models available from the OEMs, and how well equipped they are from the factory.

“You can get into racing one of these, almost off the showroom floor, without having to spend a lot more money on it,”



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Some sanctioning bodies allow kids as young as five to race in UTVs. Eleven-year-old Brian Fulcher won the UTV Youth 1000 class at Best in the Desert's 2024 Vegas to Reno race.

said Mathis. For some sanctioning bodies, the only additions required, depending on class, are seats, harnesses, and other safety equipment. "The opportunities to get into a stock class with relatively little modification to that factory machine are far superior to anything you could do with a street vehicle to go off-road racing. Then with a race UTV, unlike a race truck, you could drive it on off-road trails or at an off-road park. There's some dual use to it as well."

UTV racing "can't get more accessible,"

said Folks. "Any Tom, Dick, or Harry can go to a Polaris dealer, a Can-Am dealer, a Honda dealer, or a Kawasaki dealer and have a pretty state-of-the-art vehicle they can race the next day."

At SCORE, "our factory wars now are the UTVs," said Ryan. "It's not Ford, Chevy, Dodge, Toyota anymore. It's Polaris, Can-Am, Honda, Kawasaki, Robby Gordon's Speed, and Arctic Cat. We now have five UTV classes as the vehicle manufacturers have evolved their products. We've had to move their classes up on the starting line order in terms of when we stage their starts because they're getting faster and more reliable. They're quite capable vehicles and keep moving up through other classes on their overall finishes in our races."

The upper tier of the market, which

includes the Polaris RZR Pro R and Can-Am's new Maverick R, "are almost race-ready in the Pro class," Ryan said. "All they need is safety equipment, then go race." The OEMs have "embraced new technology, and they use our races as a testing ground for what they call 'Baja-proven technology.'"

"Twenty years ago, when UTVs started racing in Best in the Desert, they were little more than a golf cart with some suspension," said Folks. "Now, it's not an understatement to say that the technology has gone bonkers with UTVs. The OEMs looked at racing and said, 'This is where we need to be.' A UTV has won the Silver State 300 two years in a row. Think about it: Going from what was almost a golf cart to winning a big race two years in a row, that's a pretty major step."

The morning we spoke with Cole, he had spent a few hours in a new Maverick R. "It has a sequential gearbox. It has better steering than any Porsche or Mercedes you've ever driven. I was out in the desert doing 100 mph through 2-foot whoops in a \$35,000 car out of the box." Can-Am, he said, is gunning to win the top 4400 class in Hammerking's prestigious King of the Hammers event,

"THERE ARE MORE PLACES THAT ARE ACCESSIBLE TO UTV USE THAN THERE ARE TO STREET VEHICLES GOING OFF-ROADING. AND THAT TRANSLATES OVER INTO MOTORSPORTS."

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“and if they do that, they’ve proven they’ve built the best car.”

ECONOMIC FEASIBILITY

Some people are probably reading this and thinking \$35,000 is a lot of money compared to the cost of Spec Miatas, shifter karts, and other affordable forms of grassroots racing. “If you put the cost of a new UTV into a Volkswagen or a Miata, you’d have a really competitive autocross car,” Mathis pointed out.

Keep in mind that the \$35,000–\$45,000 R models from Polaris and Can-Am represent the high end of the new UTV market. There are less expensive models on the dealer’s floor, and those tend to make up the bulk of the entry lists in the desert.

And while your local Mazda dealer can’t sell you a Spec Miata, your local UTV dealer will be happy to put you in the side-by-side of your dreams and finance the purchase as well. Martelli said Polaris “has moved into self-financing, and Can-Am will finance you for 1%. So with financing, people are willing to spend \$30,000 or \$40,000.

SCORE moved its UTV classes up in the starting order “because they’re getting faster and more reliable,” said Jim Ryan. Here, Phil Blurton celebrates his class win at the 2024 Baja 500.

“THEY’RE QUITE CAPABLE VEHICLES AND KEEP MOVING UP THROUGH OTHER CLASSES ON THEIR OVERALL FINISHES IN OUR RACES.”

“Never before have we had a race car that you can finance,” he added. “Financing just completely changed the demographic of who is racing with us. And you only need to put about five grand worth of safety equipment into a UTV to race it. If you have halfway decent credit and a credit card, you can literally come racing with no out-of-pocket costs.”

As Folks pointed out, even if a racer spent \$100,000 to build “a top-of-the-line UTV to race against the very best in the country,” in the off-road racing world that pales in comparison to “the half-million dollars to build a good Class 6100 truck or well over a million for a Trick [or Trophy] Truck.” Add in the fact that if you called any of the major builders, “it could be a year or two years before you get your truck built. You can’t argue the economic feasibility of the machine.”

YOUTH AND LONGEVITY

For some of the off-road racing sanctioning bodies, the growth in UTV racing is driven by their youth classes. BITD allows kids as young as five to race. “If you want to start your kid out young, start them in a UTV,” Folks said.

Hammerking’s “biggest area of growth is youth now,” Cole said, noting that those numbers may be skewed because “it’s a new market segment for us, so of course it’s growth. But there certainly tends to be younger people in UTVs.” These vehicles represent “30–40% of our business, and it’s edging up now because the youth is all UTV-based racing.”

At SCORE, UTVs have “enabled a younger generation of racers,” Ryan said. “We’ve also had veteran racers from other classes move down into that. We’ve seen a huge influx of women entering those classes. The competition levels are extremely good and very competitive.”

“UTV racing is very appealing to youth,” Mathis said. “We see a lot of under-16-year-old drivers out there on the race courses.” Those younger drivers will tend to “stick with it, whether it’s from a competitive or hobby standpoint, for another 30–40 years. Unlike motorcycles, it doesn’t beat up your body as bad. So you can have a much longer career racing. You see all these motorcycle guys—Brian Deegan, Travis Pastrana, and all those guys—who went from two wheels to four in a cage in order to prolong their careers. So it’s got longevity to it.”

This brings up an interesting point: For the most part, UTVs are not a feeder into higher echelons in off-road racing. According to Folks, at BITD “80% of the racers who start in UTV stay there, and 20% eventually feel like they’ve outgrown it, or they have the financial support to move from a UTV to a car or truck.”

“They don’t jump up,” Cole agreed. “Most of the stud UTV guys are staying in UTV.”

“There’s not a huge movement out of the UTV classes to go up into other classes, because the category itself keeps evolving,” Ryan said. “A lot of the teams in a pro class now used to run stock. They’ve moved through the system over the years.”

“They’re staying because they like it,”



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"Once people realize how good the vehicles are, it's a no-brainer," said Matt Martelli of UNLTD Off Road Racing. "They're just dominating off-road."

"I've heard through the grapevine that Yamaha is getting real serious and doing a lot of R&D right now to build a new unit," Folks said. "Yamaha is competitive in short course, but they're not very competitive in desert off-road, and they know that. Some pretty good sources there have told me they're doing some heavy work to change

Folks said, "and because it's economically viable. That means you have bigger turnouts and more competition, and the competition is stiff, especially up in the two top classes, Pro Open and Pro Turbo. You have OEM support there."

That support goes beyond producing new nearly-race-ready models. "Kawasaki, Can-Am, and Polaris have huge contingency payouts for Best in the Desert events," Folks explained. "They're substantial enough to make the average racer say, 'Hey, we need to go race here and give it all we can. If we think we have a shot at winning, we need to come here, because the payout is pretty darn good.'"

At SCORE, factory support also includes driver contracts, Ryan said, "which don't exist in other classes. So there's a lot of really talented guys there."

EXCITED ABOUT THE FUTURE

Big as the UTV segment is, it's only going to get bigger.



that. We could see something here in the next year or so. Any time you have OEMs supporting your sport it's a big, big deal."

"The OEMs and aftermarket are always working on something," Ryan said. "There's a whole category devoted to suspension, there are specialized wheels, drivetrain, and there are exclusive manufacturers for UTV tires in that category. Everything else is being built for these vehicles: seats, safety equipment, communications gear, all these products specially built for UTVs."

Among those products in development is a new version of Atturo Tire's Trail Blade X/T. The current X/T "is a hybrid tire that is a good choice for open desert, hard pack, and short course," Mathis said. "It is also studdable for winter events." The new X/T will be an "aramid reinforced version that will further enhance the durability for competition use." It joins the Trail Blade BOSS, which is "better suited for rocks and mud with a deeper tread, a higher void ratio, and better sidewall protection." Both the X/T and BOSS "utilize a

UTVs race in five classes at King of the Hammers. Here, Steven Carter's Pro Stock Turbo Can-Am chases Tony Palarie's Pro Mod Can-Am in the Can-Am UTV Hammers Championship.



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“ANY TIME YOU HAVE OEMS SUPPORTING YOUR SPORT IT’S A BIG, BIG DEAL.”

Segway? “Yes, they have a hybrid car,” Martelli replied. Called the Super Villain SX20, the gas/electric version reportedly puts out 330 horsepower and has a 150-mph top speed.

“Once people realize how good the vehicles are, it’s a no-brainer,” said Martelli. “They’re just dominating off-road.”

To him, it doesn’t need to stop there. “When you look at the versatility of these UTVs, this platform can race on dirt, on pavement, off-road, really everywhere. I’m a little surprised that other race disciplines haven’t adapted it yet. I think the pavement guys and the dirt track guys need to get aggressive with fostering more creativity for their racers and tap into this. Just to get more people in. It would be a great entry point.” **PRI**

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ROCK RACING



Competing in rocks, whether crawling or bouncing, puts huge demands on components. Here's how these rigs are built for maximum performance and durability.

By Drew Hardin

Unlike any other segment in motorsports, racing in the rocks can mean very different things and require radically different approaches to winning. Rock crawling is literally that: precisely driving through a set course, with the help of a spotter, to score as few points as possible for things like missing gates or having to back up. Rock bouncers, on the other hand, use all the momentum they can muster to tackle impossibly steep terrain that's sometimes so slippery it has earned the nickname 'owl snot.'



Photo courtesy of Falken Tires

"In rock crawling, everything is done really slow and meticulously, because you have traction," explained Jake Burkey of Busted Knuckle Off Road, Cullman, Alabama. "But when you're on the slick stuff, you can't choose your line. You have to bounce up through and over the obstacle."

"A lot of people would consider [rock bouncing] a car wreck from start to finish," added Clyde Bynum of the National Rock Racing Association (NRRRA), Horn Lake, Mississippi. "It's hard to fathom the abuse these rigs are taking and the courses they are climbing."

These polar opposite disciplines have traveled very different vehicle development paths. Yet they do have some needs in common.

THE MIGHT OF LIGHT

One trait the rock crawlers and bouncers share is recent movement away from overbuilding their rigs. Or, as Brandon



The King of the Hammers race in Southern California combines elements of rock crawling and bouncing with high-speed desert running. To survive that kind of punishment, the cars competing in the event use driveline, suspension, and tire technology from both disciplines.

Haynes of Branik Motorsports in Fort Wayne, Indiana, put it, "With light, there's might."

In rock crawling, "everybody's trying to build strong but light," said Big Rich Klein of the World Extreme Rock Crawling Championship Series (WE Rock), based in

Kansas City, Kansas. "The whole idea is to push or pull as little weight as possible over the rock formation."

The adoption of portal axles (see sidebar on page 80) has enabled builders to "go to a super lightweight, small axle

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assembly," Klein said. Many put Toyota center sections in custom Ford 9-inch housings; others have gone even smaller, to Suzuki Samurai axles and diffs.

A lighter rock crawler means "very few people run big motors," Klein added. "The Ecotec is one of the favorite motors because they can supercharge or turbocharge them. They're real lightweight, and they're an easy package to work around because they're small."

Likewise, rock bouncers have learned that "a lighter weight vehicle with good suspension actually prevails much better than a lot of horsepower in a heavier vehicle," Burkey said. "Now we're seeing people going from what was 1,600 or 1,500 hp down to 900 hp and at the same time reducing vehicle mass by 1,000 pounds. That seems to be a better ticket."

How does one shave half a ton off a rock buggy? Switching from the Dana 80 or Rockwell axles that were commonly used



Busted Knuckle Off Road developed a rock racing chassis that is both light and strong. "All of these chassis have a triangulated rollcage in them," said Jake Burkey, and "that triangulation made it to where we can lighten up the vehicles a lot."

to Ford 9-inch differentials with chromoly housings and 10-inch ring-and-pinion "reduces the weight by almost 300 pounds per axle, so there's 600 pounds," Burkey said. Grooving material out of the tires can take "almost 20 pounds off per tire," and switching from an iron to aluminum engine

block cuts another 100 pounds. "Then take out the passenger seat, get a smaller fuel cell, do a few things here and there, and you got 1,000 pounds off the vehicle."

For those who are building a brand-new rock rig, Busted Knuckle put much effort into designing its tube chassis to be light



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and strong. "All of these chassis have a triangulated roll cage in them," Burkey said. "Because of that, we were able to put bars in locations that were in compression or tensile, and we weren't having to rely solely on the flexural strength of the material, but the compressive nature of it. That triangulation made it to where we can lighten up the vehicles a lot."

FINDING THE BALANCE

Haynes acknowledged that "there's a balance, for sure," when building components for lightness but also strength and durability. It's a balance that applies across the board. "We use the same materials, whether it's for high speed or rock crawling, because there's still a lot of strength required for the slow stuff."

"Stuffing a front tire into a crevice or an undercut and expecting it to climb something that's taller than the tire puts extreme forces and loads on the axles,



"Some of these guys just don't quit," said Clyde Bynum of the competitors in the NRRR. "They want to race all the time. I get it. They're spending a quarter-million dollars on some of these race cars these days. It's a big sport."

U-joints, and stub axles," said Klein. To stand up to those forces, crawlers are using "more exotic materials than just standard alloy steel axles, from chromoly to 300M. We've also increased spline count. We're running 40-spline axles in a Dana 60 that might have only come with 28 splines from

the factory. Plus, the size of the axle goes up from 1 inch to almost 2 inches in diameter. That means the axle tubes are bigger. The U-joints go bigger. A 1310 U-joint is typical in a pickup truck on the street. We're using 1450s or even 1550s on some of the axle assemblies."

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Branik Motorsports has developed its own 1550 U-joints. It manufactures components using 300M alloy “because the way those materials are manufactured and milled, they’re set to a higher standard, and we’re able to manufacture parts that are made not to break,” Haynes said.

Because of what Haynes described as the “point-and-shoot” nature of rock bouncing, where “they use their throttle like a light switch, and it’s all or nothing,” driveline components have to be extremely durable. Not just made of high-strength steel alloy, but big, too. Branik Motorsports turns out axle shafts with spline counts ranging from 40 to 47.

Some of the rock bouncers at the NRRRA are using axle shafts from RCV Performance that are 47-spline “and are 2 inches around,” Bynum said. “That’s the same diameter as a Coke can.”

Busted Knuckle uses 300M for its top-tier axle shafts not just for strength but because of “the material’s elasticity,” Burkey said. “It



“In rock crawling, everything is done really slow and meticulously, because you have traction,” said Jake Burkey of Busted Knuckle Off Road. Yet that traction puts extreme forces on driveline components, requiring them to be built with many of the same high-strength materials as those used for rock bouncers.

is extremely good for allowing a whole bunch of torsional cycles where you’re getting loaded and unloaded, loaded and unloaded, before any type of cracks start to form.”

Additionally, “we use a lot of high-end aluminum in our designs,” Burkey continued. “The 7075 alloy is one of our favorites. It is extremely strong, flexible, and light weight. We use it on a lot of components that were previously made from steel, allowing us to cut weight in multiple locations on the buggy.”

In terms of axle size, Busted Knuckle makes axle shafts with 40-plus spline counts, though Burkey pointed out that “spline count is not relative to size. It’s relative to the aggressiveness of the spline itself. For instance, our inner axle shafts are 40-spline, 1.75 inches, while our outer axle shafts are 32-spline, but they’re 2 3/8ths inches in diameter. So it doesn’t necessarily correlate. You have to talk diameter, not necessarily spline count.”

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WHAT'S THE DIFF

Variations on Ford's 9-inch rearend are common on rock racers of all kinds. Among crawlers, the 9-inch is "really popular because if you blow a ring-and-pinion, you can pull the axle shafts out a little ways and drop in a new center section," said Klein.

The versatility of the 9-inch's drop-in center section is a "huge factor in how it became so popular," said Haynes. "You can also build really strong axle housings or aftermarket formed axle housings for the 9-inch, and they're easy to fabricate off of. You can weld right to the axle housing wherever you need." Plus, he said, new technology, such as 10-inch gear sets and better race materials, "has put the 9-inch up there as equally strong as the 14-bolt."

Next to the 9-inch, GM's 14-bolt and the Dana 60, which were used by the OEs in one-ton trucks, are the most common housings Branik Motorsports deals with, Haynes said.

At the NRRRA, "outside of your custom, one-off housings, the most popular are the 14-bolt and the Dana 80," Bynum said. "A lot of people went to the Dana 80 because of its bigger pinion, but just as many people are running the 14-bolts front and rear because the pinion support in the 14-bolt helps it hold up to what we do a lot more." The 14-bolt, in OE form, was a rear axle only, but "we're building them into steer axles front and rear," Bynum said, as most NRRRA racers "are front and rear steer these days to be competitive."

Rear steer has been popular among crawlers almost since the beginning of the sport, Klein said. "They would take a front steer axle, flip it over, and run it as a rear steer axle so they could get a sharper turning radius. Chassis got narrower so you could turn 40- or 42-inch tires in the rear to an extreme angle. Most pickup trucks or Jeeps you can buy off the showroom floor have a steering angle radius of probably 30 degrees in the front,

where our crawlers are getting anywhere from 56 to 60 degrees of angle and making them survive in most situations."

WHERE THE RUBBER MEETS THE ROCKS

Klein credited BFGoodrich with developing the first tire specific for rock crawling. The BFG Krawler T/A is "what we call a sticky tire, which means it has a durometer rating lower than a standard DOT tire." Other companies have followed, including Maxxis, Interco, and Mickey Thompson.

"We don't care how many miles they get, and we're not driving that fast," Klein said. "If you see a wheel spinning, and it looks like they're burning rubber, the guys are heating up the tires to get more stickiness out of the compound."

Tires are one area where the rock crawler push for lightness doesn't apply. "The lower the center of gravity you have on the

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vehicle the better when you're off-camber or climbing because you get more traction the closer your weight is to the rocks," Klein explained. "So unsprung weight is okay. Axles, wheels, tires, those items can be heavier because they're below that center of gravity line, or most of it." Some crawlers add water, or steel shot, or both to their tires to "create more weight in the wheel assembly to hold the vehicle onto the ground."

Falken Tires in Rancho Cucamonga, California, is currently testing a race compound, 40-inch version of its Wildpeak M/T01 with select rock crawling teams. "We're two years out from releasing it in a DOT version. Right now, this is exclusive to motorsports," said Doug Fletcher. "It has tremendous grip, and they're doing really well with it." In addition to the new tread compound, the 40-inch M/T01 is made with Falken's Duraspec construction technology, in which the tire's "turn-up plies come up way further than most of the rest



"We manufacture heavy-duty drivelines for the industry, and all the components to put those heavy-duty drivelines together," Busted Knuckle Off Road's Jake Burkey said. Axle shafts and driveshafts are not only larger in diameter, but they are made of premium materials "to keep them from breaking."

of the industry's products, which gives us additional strength in our sidewall," Fletcher said. "That means the tire is going to be a little heavier than one that doesn't have as high a turn-up ply.

"Plus, our tire comes with one of the thickest tread depths in the industry. Depending on size, we go up to 21/32s of rubber," Fletcher continued. "Again, when we're talking durability and strength of the tire versus weight, if I have more traction with more tread depth, I'll sacrifice a little bit of weight to do that."

On the rock bouncing side, "Mickey Thompson was one of those companies that developed a tire for our market, the Baja Pro X," Bynum said. Like the BFG Krawler, it's a non-DOT, sticky-compound tire. Most NRRR racers use the 43-inch-tall version with a 17-inch wheel.

"These guys are hitting, say, a 2-foot rock ledge that's at a 90-degree angle at 40, 50, 60 miles an hour," said Bynum.

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“So the tire has to be very tough for what we do.”

“The invention of the sticky tire allowed us to have the same amount of traction at a higher psi level in the tire,” Burkey pointed out. Conventional off-roading tires are run on the rocks at super low pressures—2–3 psi—for the tires to essentially wrap around the rocks for traction. “But we can run 8 or 9 psi with the sticky tires, which provides the same traction and is enough to keep the tire from compressing when we hit an obstacle at speed and bending the wheel.” Most competitors use beadlocks on their wheels, which bolt the tires to the wheels to secure them at low air pressures.

Burkey said most wheels are 17 or 20 inches in diameter to fit large brake packages and beefed-up steering knuckles and axle shafts. “We’re running huge steering knuckles. It’s kind of hard to fathom just how much bigger these are from even five years ago.”

HAMMER TIME

Hammerking Productions’ Ultra4 race series and its marquee event, the King of the Hammers in Johnson Valley, California, combine elements of rock crawling and bouncing with high-speed desert running. As such, the cars competing in the unlimited Ultra4 class look like a cross between crawlers and desert racers, and they share some tech with the rock racers.

“Nowadays we’re using portal boxes,” said Dave Cole, “which give you higher ground clearance, the ability to fit bigger tires, better gear reduction, and you can run bigger tires without adding load to your drivetrain. We also get a lot of flexibility out of our differentials, whether they’re selectable or automatic [locking].”

The high speeds put demands on the engines that are unmatched in crawling or bouncing, making “temperature control and oiling a really big deal,” Cole said. “Engine management systems have really exploded. We’re capturing telemetry and managing it at a much higher technological level than you would expect to find in off-road. Ten years ago, you might have found 10 people running a MoTeC system. Now there’s 300. Some people run the old stock ECUs, but you cannot be competitive unless you’re massively changing your entire data management system on your car.” —Drew Hardin

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RACING EQUIPMENT

PORTAL AXLES

Whenever portal axles came up in interviews for this story, everyone credited Jesse Haines of Jesse Haines Fabrication (JHF), in Dayton, Nevada, for his pioneering work adapting the system used on military Hummers to the requirements of off-road racing. "It's old technology, proven in the military for 40 years or so, but a lot of guys are using them. They're very strong and robust," said Brandon Haynes of Branik Motorsports, Fort Wayne, Indiana, which worked closely with Haines to develop a Dana 60-sized axle shaft that fits in the JHF portal box.

Portal axles are geared axle hubs mounted on each wheel. Adding gear reduction at the wheels carries some of the driveline torque, "which makes your axle shafts and ring-and-pinion twice as strong," said Haynes. The portals also increase ground clearance by lowering the wheel's mount surface relative to the axle and differential.

"A lot of the guys in rock crawling are using smaller, lighter-weight center sections, like Toyota center sections," Haynes noted. Even when they're sending 250 to 350 hp to 40-or 42-inch tires, "the differentials hold up well with a portal setup." —*Drew Hardin*

DESERT RACE SUSPENSIONS

Tuned suspension systems "have become a number-one thing" among rock bouncers over the past three to five years, Burkey said. "We've realized that you can make it over an obstacle with less horsepower if your suspension absorbs the impact properly than if your suspension doesn't. If you combine that with a sticky tire, you have a recipe to conquer all the terrains."

Rock bouncers have been looking west and borrowing ideas from desert racers, he added, such as trailing arm systems and coilovers with bypass shocks. Desert race shock specialists like King and Fox are in the mix, but many bouncers use Radflo bypass shocks, a company Burkey calls "the industry leader." Busted Knuckle "tunes the shocks based on the terrain and the vehicle characteristics that we have. Once that's done, we order the shocks pre-valved from Radflo ready to bolt on the vehicle."

Bynum agreed that Radflo "is one of the

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big companies that supports the sport," and most of the NRRR competitors are using triple- or quadruple-bypass shocks. Trailing arm systems are popular with his bouncers, too, as "that way they get a lot more travel, as much as 24 to 30 inches of travel."

Branik Motorsports has developed sway bars for bouncers that "keep your vehicle stable and improve the handling going around corners," Haynes said. "The seat-of-the-pants feel is a whole lot more stable with sway bars front and rear."

Rock crawlers also turned to desert racers for ideas about shock packages, coilovers, and link suspensions, but Klein said they soon found "all of those items react differently when you're trying to go slow and gain traction, as opposed to carrying the vehicle as fast as you can over rough terrain." Crawlers were able to use some of the components, "but the suspension design changed, and the shock valving and setups changed, even though they look identical to

what a Trophy Truck or Class 1 car has."

One innovation that has come to American crawlers from Australia is a shock absorber with the ability to push a tire down into a hole for more traction, Klein said. "It's a shock with a hydraulic system over the top of the regular shock system. It acts like a regular shock, then at the push of a button it hydraulically pushes the ram to put the wheel where you want it to go. When you release it, it returns to normal ride height."

Other than components like those hydraulic ram shock absorbers, or tires aired down to single-digit pressures, the vehicles built for rock crawling and rock bouncing "are really no different than any other race car," Bynum said. "It's just our sport. I would say it's probably hardest on parts, but there have been a lot of companies that have stepped up and built custom parts for our industry." Rock bouncing, he said, "is a sprint of the hardest courses you'll ever find." **PRI**

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- 2:00 PM **BUSINESS** Customizing Sponsorship Decks: Dialing In the Perfect Pitch to Find Sponsors
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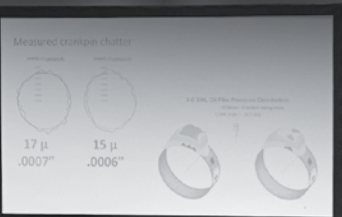
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BUSINESS PROFILE

BRANIK MOTORSPORTS

Offering brand-name and custom-crafted components for rock crawling, rock bouncing, desert racing, and more, Branik Motorsports has built a reputation for customer service and rock-solid reliability.

By John F. Katz

The father-and-son team of Stan and Brandon Haynes didn't set out to build an off-road racing business—but maybe it was inevitable that they did.

"We opened our doors in 2003 as a mold and die shop," said Brandon Haynes, "making and repairing permanent molds, primarily for steering and suspension components for the Big Three automakers." Stan Haynes named the company Branik, for Brandon and his sister Nicole.

Stan had previously operated an off-road shop, building roll cages and custom lift kits. "He was



Photo courtesy of Haulin' Yash Racing

also into drag racing and circle track racing,” said Brandon. “I spent a lot of time as a child watching him race on weekends.” For a racer, owning a mold and die business presented new opportunities. “Having CNC and fabrication equipment, we started making parts for our own vehicles.” By 2007, Branik was offering racing and off-road components for sale.

Then came the crash of 2008–2009, and a precipitous drop in demand for new cars and light trucks. “We started making more off-road products, and off-road products were what kept us in business,” said Haynes. Branik, Inc. became Branik Motorsports. “Today our sales are 95% or more motorsports and off-road, and only 5% or less mold-making for industrial foundries.”

Branik customers drive rock crawlers, rock bouncers, rock racers, Class 1 buggies, Baja buggies, Trophy Trucks, monster trucks, and even pulling trucks; in WE Rock, XRock, Best in the Desert, and Ultra4, including the climactic King of the Hammers (KOH) race week. Branik maintains sponsorships with most of these sanctions and is involved, in some way, with “almost all of the dirt-type, off-road motorsports.”

The versatile manufacturing capabilities of the company’s 10,000-square-foot facility in Fort Wayne, Indiana, range from volume production to one-off customs. “The largest



The versatile manufacturing capabilities of Branik Motorsports’ 10,000-square-foot facility range from volume production to one-off customs. “The largest part of our off-road business is driveline: axle shafts, drive flanges, U-joints, and similar parts,” said Brandon Haynes.

“PARTICIPANTS AND SPECTATORS SEE THAT WE ARE SUPPORTING THE COMMUNITY, AND THAT HAS DRIVEN CUSTOMERS TOWARD US.”

part of our off-road business is driveline: axle shafts, drive flanges, U-joints, and similar parts,” Haynes explained. Products also include Branik’s own Legacy brand brakes, steel and aluminum sway bar components, and steering components. Additionally, Branik sells parts from Wilwood, Reid Racing, and Yukon Gear & Axle.

SPECIALTY SUSPENSION

Leading and trailing suspension arms, custom-machined from 7075 aluminum billet, are another specialty. “All of our suspension

arms have been one-off parts,” said Haynes. “We start with a sample of an existing arm, or a customer sketch or drawing with mounting locations, and then I design the arm on Solidworks. Once that’s done, we send the proof to the customer for approval—mostly on how it looks, but also to make sure it has all the features the customer wants. Then we

order the material, write the programs for our CNC machines, and schedule production.” Start to finish, the entire process “usually takes three or four days, depending on the design, how complex it is, and the size.”

Demand for custom suspension arms and other custom parts is driven by the innovation that’s still allowed in off-road competition. “In Ultra4,” for example, “most of the vehicles are somewhat unique, especially in the 4400 class, which is unlimited. You run what you bring, and while some vehicles are similar, there are many different designs, from a lot of

different shops that are all trying to build the better mousetrap.

“A lot of these racers will start by fabricating a steel arm—cutting pieces out of plate and welding them together—and after they bend or break it several times, they start looking for a stronger solution,” continued Haynes. “A lot of them don’t believe that an aluminum part can be stronger than steel,” but with the right design it can be. Further, “aluminum will flex some. It is forgiving. The 7075 alloy we use is like a memory material; it will flex and then straighten out and not break.”

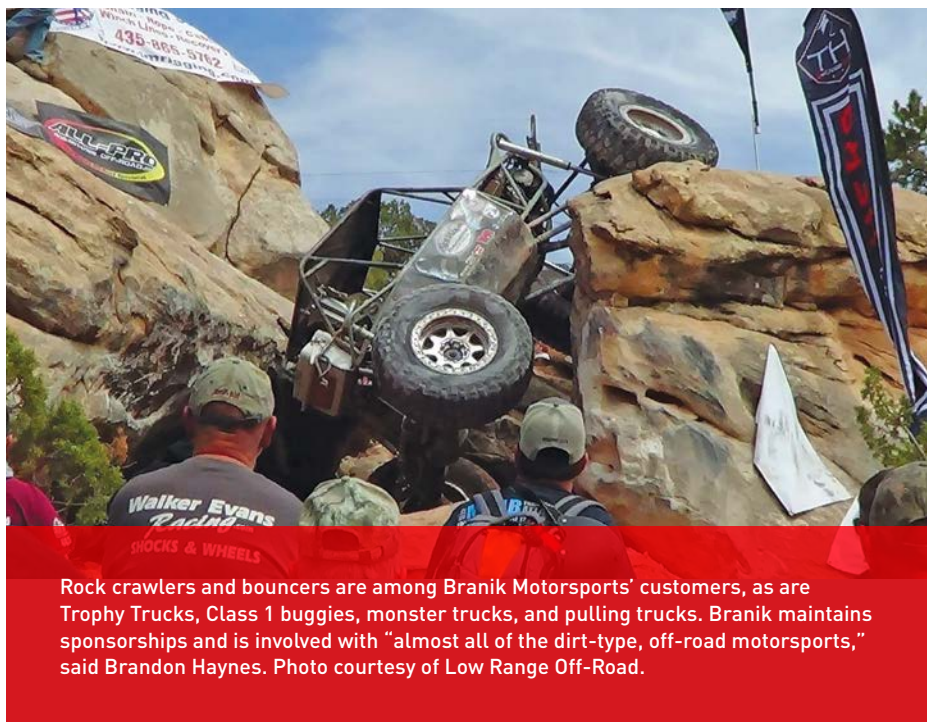
“I started racing off-road back in 2010, at the Badlands Off-Road Park, and I kept breaking axle shafts,” recalled Chad Hundt, a racer based in Plymouth, Indiana. “So I Googled ‘shops that make racing and off-road stuff,’ drove to Fort Wayne and said, ‘Can you guys help?’ I found an amazing group of people to work with. Brandon and his father Stan go above and beyond.”

Today Hundt runs Ultra4 4400 with axle shafts, Heim joints, knuckles, and sway bars supplied by Branik. “It’s good to put in a product that will last through the race and not leave you high and dry. If I do have a problem, they get a replacement

out to me right away—and we race all over the US, as far away as the King of the Hammers in California.”

“I won’t buy axle shafts from anyone else,” added Cam Beasley of Locust Grove, Virginia. “My team competes in WE Rock, XRock, Trail Breaker, Trail Hero—all the big, hardcore rock-crawling events. I had heard of Branik through a couple of my buddies who run their products but didn’t think I needed them. Then four years ago, I bought a new Unlimited car, and it had off-the-shelf chromoly axle shafts—and I quickly broke a few stub shafts.

“I sell machinery for a living, and Branik is in my territory, so I stopped by and saw them. When I saw what they were all about, I ordered a set of their axle shafts. Now I am sponsored by Branik, and I run everything they make—brake hats and rotors, U-joints, and axle shafts—but the reason I go back to them is I just can’t break their stuff. And I am pretty hard on things: I have 40-inch tires, a



Rock crawlers and bouncers are among Branik Motorsports’ customers, as are Trophy Trucks, Class 1 buggies, monster trucks, and pulling trucks. Branik maintains sponsorships and is involved with “almost all of the dirt-type, off-road motorsports,” said Brandon Haynes. Photo courtesy of Low Range Off-Road.

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crawl box, air lockers, the whole deal. I just won the last Put Up or Shut Up, and we were just hammering on the cars. If Branik makes it, I get it from them.”

MADE IN THE USA

We asked Haynes how Branik chooses suppliers, not only for materials like 7075, but also for machine tools and other manufacturing equipment. In either case, he answered, “a lot of it is driven by customer service, by having a relationship with the vendors. It’s important that they care about what they are selling.” That kind of relationship isn’t easy to find, however, as too many large suppliers show little interest in smaller-scale customers. “A lot of these vendors are commission-based,” he explained, “and they’ve got these huge companies as clients, and they are riding on Easy Street, making big bucks off of them. So it’s warming to have a sales rep who cares.”

“MOST OF OUR SALES AND OUR GROWTH HAVE BEEN THROUGH WORD-OF-MOUTH, THROUGH BEING PRESENT AND BEING INVOLVED.”

Important as relationships are, however, Branik considers other factors as well. “We are still shopping price, quality, and where stuff is made,” said Haynes. “We do our best to source most of our materials domestically. We care about being made in the USA.” Partly—maybe primarily—that’s based on Branik’s “foundation of patriotism,” but there are practical advantages also. “The quality of materials, for sure, is more consistent with domestic products. The US mills hold quality control to a higher standard.”

Price, absolutely, has become an issue. Material costs “got real bad right after COVID-19,” and although some prices

have “somewhat stabilized” over the last six months to a year, Haynes reminded us that “materials are commodities. It’s like buying gasoline—the prices are constantly going up and down, and our suppliers have gotten to a point where their quotes are good for only 48 hours. That makes it difficult for us to quote jobs.” He also reported “shortages and difficulties getting materials from some companies. So we’ve had to dig a little deeper and do our best to find new suppliers.”

The situation depends on the material and is worse for “higher-end” alloys such as 300M, the aerospace-grade, high-silicon nickel-steel alloy that Branik uses primarily

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in axle shafts. "There are a limited number of mills that produce 300M. We get it from one or two suppliers. It has actually gone up a lot in the last year," even while costs for more common materials have stabilized. For Branik, the high price of 300M, as well as other materials, presents a quandary. "We can't absorb all of it—obviously—so we have to adjust our prices, while we have to remain competitive and not price ourselves out of business. We keep an eye on what other companies are doing. We watch their websites. Our margins are floating, but we do our best to stay competitive."

Haynes feels less "tied" to domestic products when buying machinery, but he still favors a few proven manufacturers. "We have Haas machines, and Hardinge machines, but we have also been buying a lot from Okuma. They really strive for quality and tight tolerances. Their controllers are phenomenal, and their capabilities are awesome."



Brandon Haynes and his father Stan are racers as well as fabricators. "Having CNC and fabrication equipment, we started making parts for our own vehicles," Brandon explained. That led to Branik selling racing and off-road components starting in 2007.

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BEING THERE

Like so many other motorsports businesses, Branik has found that performance and participation are the most effective promotion. "We have been involved in off-road racing since 2007," said Haynes. "We've been present in the off-road community, in several genres of the sport; we've supported the racers, and we've driven and participated ourselves. Participants and spectators see that we are supporting the community, and that has driven customers toward us." Additionally, "We pride ourselves on having the best customer service we can possibly deliver.

"We do advertise in several sanctioning bodies," continued Haynes. "We sponsor and support Ultra4, and we've sponsored several rock crawling and rock bouncing sanctions," including WE Rock, XRock, and SRRS. "We have been the title sponsor for the 4800 Legends in King of the Hammers for the past five years. That goes a long way.



"We have Haas machines, and Hardinge machines, but we've also been buying a lot from Okuma," Brandon Haynes said. "They really strive for quality and tight tolerances. Their controllers are phenomenal, and their capabilities are awesome."

Honestly, most of our sales and our growth have been through word-of-mouth, through being present and being involved. We haven't had to do a lot of knocking on doors to promote sales."

With that success in mind, Haynes plans to develop Branik's event support even further. "Last year at KOH we had a vendor

booth, and racers came to ask questions, or because they needed parts. We saw that as positive, and so we are going to expand by doing that at some other events next year, having people there who can answer questions." Up until now, he added, "we haven't done a lot of parts sales at events, but that is another potential area for growth,

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for producing more sales.”

Finding good employees has frankly been harder than finding customers. Especially since the Pandemic, “seeking employees has been a struggle,” making it difficult to “keep things rolling smooth and keep producing.” Branik has found some success with online recruiting services and even social media; the company has posted job openings on its Facebook page. One recent hire who was not on social media heard about the job opening from a friend who was, “and the friend suggested to him, ‘Hey, these guys are looking for people.’” As this is written, Branik employs seven people.

Training is mostly the on-the-job variety. “We have our own way of doing things,” said Haynes, “and our machinery is not the same as everyone else’s.” Branik has also taken advantage of CAD/CAM training offered by supplier Mastercam.

Retaining employees, said Haynes, “takes caring about them, paying them well, and

doing our best to keep shop morale up and make work an enjoyable, fun place to be. We want employees who want to come to work.” He believes that Branik’s nominal four-day workweek, with 10 hours in a workday, contributes to that goal. “We get our main 40 hours in Monday through Thursday,” he explained. “We typically work five hours overtime on Friday as well, but we haven’t worked a Saturday or Sunday—as far as shop production—in seven or eight years.”

Haynes also understands that work culture is “driven by the owners. We’ve worked hard to build a good name. My dad and I are there every day, putting in our blood, sweat, and tears.”

Not surprisingly, most of the people who have come to work for Branik were already off-road enthusiasts, “or they’ve been converted in some form or fashion. A couple of guys who weren’t really into it ended up buying side-by-sides and coming out wheeling with us. I have an off-road vehicle,

my dad has an off-road vehicle, probably 75% of the guys at the shop have something they can go out and recreate with.”

When asked about plans for the future, Haynes stressed manufacturing efficiency. “We are streamlining all of our processes. We are looking at better machinery and in the near future, robotics.” While Haynes didn’t share details, he mentioned new products also. “We’ve been continuing to expand the number of products we offer in the driveline segment, and we have immediate plans for growth in that market. We are always looking at different products, at making our existing products better, and growing with the market.

“The technology is constantly advancing, and so are the vehicles and the drivers. It’s crazy how in no-prep racing people are making 2,500 horsepower out of an LS motor. It’s constantly changing—and challenging us to make better products.” **PRI**

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POWER HUNGRY

AS THE LOADS ON ENGINE ROTATING ASSEMBLIES INCREASE WITH BOOST AND HIGHER-RPM CAPABILITIES, CRANKSHAFT MANUFACTURERS ARE RESPONDING WITH STRONGER PRODUCTS.

By Mike Magda

Crankshafts, especially custom units, are more robust these days, and there's a simple explanation. "One-thousand horsepower used to be a lot. Now, we are hearing 2,000 horsepower more and more," said Alan Davis of Eagle Specialty Products, Southaven, Mississippi. "Customers need crankshafts that can be the backbone of that kind of powerhouse. Center counterweights play a big role in crankshaft stability and strength at extreme power levels. We are developing more crankshafts with center counterweight designs."

"Mostly we're reacting to the needs of the market, and specifically our customers," added Trip Manley of Manley Performance Products, Lakewood, New Jersey.

Demand for performance parts has yet to soften following the surge in engine building during the pandemic. Manufacturers are now looking at making changes in their manufacturing operations to keep up with customer orders.

"It's been a lengthy project of making the manufacturing side more efficient," said Nick Norris of Callies Performance Products, Fostoria, Ohio. "As part of that move, we've backed away from some new introductions at the moment."

Other companies are developing new product. They just can't talk about it.

"We're looking at doing some exotic material Duramax cranks," said Kirk Peters of Howards Cams, Oshkosh, Wisconsin. "What does that mean at this point? It's hard to say. I can say it will be billet, not forged."



Part of the final crankshaft inspection at Manley Performance Products includes an air gauge to double-check journal sizing.

"We're expanding our billet line," concurred Tom Molnar of Molnar Technologies, Kentwood, Michigan, adding that the demand for center-counterweight cranks is driving the development. "There are a lot of people who think you need an eight-counterweight crank. In some cases you do. In some cases you don't."

Over at Crower, which is based in San Diego, California, there have been some supply problems with acquiring US-made raw forgings. Officials also say heat-treating is taking longer due to labor issues where the process is sourced, and utility prices are challenging. But the dirt late model market is keeping the company busy.

"The small block, 4,500-inch bore center applications—we can't seem to make enough of those," said Peter Harris, noting that there were no engineering challenges to designing a crank for the wider bore centers. "Just understanding what the customer wants. They always want the ultimate strength and also light weight. We don't make them in different weights. We make only one crank for the

application. It's a lightweight billet, center counterweight. But they have to be very strong because of the number of laps on them."

The number of racers ordering custom crankshafts continues to grow. The debate over which is stronger—billet or forged—will always be spirited. The main reasons that billet is often preferred is flexibility in design. Counterweights can be shaped and located as desired, whereas a forging has limitations in the machining and finishing stages.

"The ratio of billet versus forged has gone higher," said Norris. "Part of it, I would say, is there are certain forgings that haven't been updated to eight counterweights. Behind that is the unreasonable cost of changing a forging die to that level. We're talking six figures to update. At this point, it's easier to make the billet cranks."

COMPUTER SIMULATIONS

Crankshafts are a specialty at Pankl, which is based in Austria. The company offers clean-sheet design and simulation

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The popularity of cylinder blocks with 4.500-inch bore centers has led to the development of custom crankshafts for this particular application. Here's a 4340 billet steel model from Crower Cams & Equipment Co.

analysis. "For NASCAR, it would be a cast-iron block. In other race cars, it would usually be aluminum. So you take into account the deformation of the whole engine and then do an EHD [elastohydrodynamic bearing calculation], where you look into the main and rod bearings. This is assuming that you know the boundaries for the oil viscosities, speeds, and pressures."

With all the relevant parameters in play, the computer simulation programs can calculate main bearing and rod bearing wear, oil-film thickness, and shear forces. "That's a quite complex dynamics calculation that is also costly. You easily end up with \$150,000 to \$200,000 of just crankshaft simulation on the design side," said Wachmann.

Friction calculations are becoming more important in crankshaft design. For example, a NASCAR superspeedway engine has a very low gradient of rpm change. The driver basically keeps the engine at WOT in high gear around a 2.5-mile track.

capabilities for high-end projects and can include connecting rod and piston development in the same program. The customer first sets down the basic requirements including target weight, loads, and packaging considerations. "We probably start with \$10,000 worth

of design work just based on experience," said Christoph Wachmann. "First, you do a fatigue simulation to look into the safety factors in critical positions of the crankshaft, and you do this with a dynamic calculation." Wachmann said that anticipated cylinder-block flex must also be included in the

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“So weight is not the most important factor, but friction is. How can you reduce the friction losses in this engine? In most cases, that has to do with stiffness,” said Wachmann. “You already have a stiff cast-iron block. We learned about 15 years ago in NASCAR that you can’t squeeze all the weight out of a crankshaft because it will start wobbling more, and you’ll have more frictional losses in the bearings.”

Extreme lightweight crankshafts are starting to lose favor with engine builders. There are some race classes where total engine weight may be more important than losing a couple horsepower to friction. Lightweight designs cannot compromise on durability, and many more race classes are demanding that engines live longer to reduce overall program costs.

“It comes down to choosing the material and nitriding depths,” said Wachmann. “In Formula 1, where you have a 10-million cycle requirement, or Le Mans endurance racing, people have started to go with very high

nitriding depths. I’ve seen crankshafts going close to 1 mm of nitriding depth. That means, depending on the material, that the crankshaft would stay in the nitriding oven for 200 hours.”

CREATIVE APPROACHES

As noted earlier, the manufacturing side is seeing changes. Callies is revamping the early stages of the production line that includes bringing in new equipment.

“We’ve taken a whole different approach to how we’re making parts from start to finish,” said Norris. “We’ve been making crankshafts for a long time, and we’ve made them the same way. We have some younger, different-thinking people in the production department. They’re changing some things, and some of them are showing improvement. Some aren’t, and that’s okay. If we don’t try, we don’t figure it out.”

With the increasing popularity of eight-counterweight crankshafts, sometimes the manufacturing department has to get a little creative when producing a forged crankshaft. There are two ways to



Noting that “the big block Chevy guys are going in a lot of different directions,” Howards Cams offers a variety of crankshafts to meet their needs. Here’s its Reaper billet crankshaft with a 4.750-inch stroke for a big block Chevy.

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This 4-inch-stroke LS billet crankshaft from Eagle Specialty Products is machined from 4340 steel and features eight counterweights.

the dies will accomplish what's needed."

ENGINE DRIVEN

Recent engine platforms are driving new crankshafts. Molnar Technologies is developing both billet and forged crankshafts for the LT series, but one application the company is shying away from is very large displacements.

"One of the things that helps reduce the bending of the crank, besides the placement of the counterweights, is the overlap of the rod and main journals on the crank," said Molnar. "When you go longer with a stroke, you are reducing the overlap, and the cranks are bending. There's not that much you can do to help that."

"I've seen guys build these big motors, and they're running eight-plus-thousandths of main bearing clearance," continued Molnar. "They almost have to, because it's going to bend, and they're just trying to help protect the bearings by running thicker oil and lots of clearance."

manufacture a forged crankshaft. First is the twist method, where the rod journals and counterweights are forged flat in the dies, then the forging is reheated and twisted to position the rod journals and counterweights.

The other method uses the two forging dies that are designed to shape the part in a single operation. These presses required a great deal of power to produce a forging.

"With eight-counterweight forgings, we need what we call a pre-roughing situation where we have to clear out some material

similar to what we would have to do on a billet just to get them to the point where they can start running them through our normal production line," explained Norris.

With some raw forgings, the counterweights can't be located exactly where the engineers prefer. That's because the dies are designed with a draft angle so the part can be released.

"When the dies come apart, instead of the part easily coming out of the die, it can get stuck in them," said Norris. "Probably the best example is our Top Fuel forging. We have the counterweights pretty much where we want them. However, in order to do that we have to put in extra material just so that

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Big block Chevys are drawing attention at Manley right now. Some crankshafts under development include forged BBC 4.500-inch-stroke with center counterweights, profiled for a 6.385-inch rod and 2,250-gram bobweight; forged BBC 4.875-inch-stroke with center counterweights, profiled for a 6.700-inch rod length and 2,300-gram bobweight; and billet

Chevy LT1/LT4 4.000-inch-stroke with center counterweights.

"The two new big block cranks will round out an already outstanding lineup of center-counterweighted cranks we offer for these applications," noted Manley. "The billet Chevy LT crank should enjoy similar success as our billet Chevy LS crank, which has become a staple for many of the top LS engine builders producing 2,000 hp and thus requiring superior internals that can survive in this environment."

Manley is also working on a new billet 88-mm-stroke crankshaft for the Mitsubishi 4G63/4G64 engine. "The new billet Mitsu

is something we are working on to fix a common problem with all Mitsu 4G63/4G64 crankshafts: eventual cracking in the number-four rod journal," said Manley. "We've made some really nice improvements and added necessary cross-sectional thickness in critical areas. This should allow the Mitsu fraternity to gain more confidence when making big power and deliver an engine package that will have longevity. More details coming."

Rat motors are also a hit with Howards Cams customers. "The big block Chevy guys are going in a lot of different directions. We've got ones building Outlaw 632-type motors with either a lot of boost or nitrous," said Peters. "And then on the LS side, you've got a lot of turbocharged applications where guys are pushing the limits. That's kind of where the marketplace is now with so many people gravitating toward the billet line for the big drag racing horsepower, and it's getting crazy."

For circle track racers, Howards has



Pankl offers clean-sheet design and simulation capabilities for high-end projects, including this custom lightweight crankshaft developed for a Porsche 911R engine.

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Molnar Technologies manufactures this eight-counterweight LS crankshaft that's machined from billet steel.

the Track Smart line made from 4340 steel forgings. They feature a larger, 0.125-inch radius on all journals, and the nitriding is a little deeper than normal.

"Since the pandemic, our camshaft business in circle track is really good. In turn, the Track Smart cranks have been increasing in sales," added Peters.

Over at Eagle, new applications coming include the Ford 7.3L Godzilla engine, the

Chevy LT, and Nissan VQ.

"Along with strength, builders want consistency and predictability. We are well into the changeover to fully automated CNC-controlled journal grinding for unparalleled sizing consistency and accuracy," said Davis. "In an inflation-riddled economy, Eagle has been working hard to keep costs, and prices, down. Eagle has not had a price increase in over two years."

Finally, any discussion of crankshafts cannot be complete without mentioning flat-plane crankshafts. Recent factory performance engines from Ford and Chevy with flat-plane cranks have energized engine builders into considering such a move for a future project.

"We get asked about flat-plane cranks quite often. We always ask if they are aware of everything else in the engine that has to change as well," cautioned Davis. "Usually, people don't understand that it's not just the crank that's different. A flat-plane crank also affects ignition phasing and cam phasing, among other things. As much as people

think they want to see it, it will not happen until builders have a firm grasp on everything else that goes along with it." **PRI**

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By Jim Donnelly

**RAW HORSEPOWER DRAWS FANS AND MANUFACTURERS TO
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GAINING GROUND



At its most basic, the sport of pulling reflects the conflicts of physics at their most elemental and earsplitting level. It's almost a colosseum-type experience, the action unfolding on a few hundred feet of groomed dirt in front of grandstands whose spectators can nearly reach out and touch the vehicles. The competition is pure grunt work, getting tonnage to budge from a dead stop as the effort to move all that weight gets progressively more difficult.

It's a ritual of performance that can trace its origins back to when tractors first replaced horses, as the nation's farmers labored to till their acreage around the turn of the 20th century. Pulling, to use its shorthand name, is now a vibrant genre of American motorsports, practiced in venues that vary from county fairgrounds to indoor sports arenas. It has parallels to drag racing, except that pulling is contested on a compact dirt surface in front of even more closely gathered spectators. And it's indeed

a spectacle. With the possible exception of nitro-fueled drag racing, no other brand of North American motorsports provides the sort of thunderous, torque-crazed competition that pulling—it's not just "tractor pulling" anymore—delivers to its fans all over the United States.

It's also a buzzy phenomenon in the world of modern automotive competition. Combine enthusiastic participants with equally amped spectators and enough raw power to seemingly bump the Earth off its axis,



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PULLING

and it becomes clear that pulling represents unique opportunities for both technological advancement and grabbing the public's attention. Pulling's gone big today. It's still a rural pastime at its most elemental, but this struggle between machine and ground now enjoys markedly broadened appeal in locales that aren't necessarily out in the countryside. And again, a lot like drag racing, even street-legal vehicles can credibly participate.

PULLING BASICS

To help explain its booming appeal, PRI reached out to a key presence in the pulling world, because he's been organizing events for years. Richard Love is the proprietor of Pennsylvania-based Full Pull Productions, which now sanctions some 100 pulling events annually. They take place largely in the eastern United States, including in New York, which is a surprisingly strong hotbed for the sport today.

"STARTING THE FIRST WEEK OF JUNE TO THE END OF AUGUST, YOU CAN FIND SLED PULLING AT LOCAL, STATE, AND COUNTY FAIRS PRACTICALLY SIX DAYS OUT OF THE WEEK, EVERY NIGHT, IN EACH STATE, FROM KANSAS ALL THE WAY TO NEW YORK."

"Pulling in its early history started with tractors. It was a farmer-based motorsport, and over the years, trucks got involved," Love said. "People who are into pulling basically fall into three classes: The farmer type who's familiar with tractors is the first. Then there's the 18- to 30-year-olds, the young kids in the diesel world just starting to get involved, and now the big rigs, appealing to truckers who are into grassroots

motorsports. It's still largely a rural sport, but it's not necessarily about farming anymore."

Love is well qualified to give an overview of pulling and its processes. Full Pull Productions presents pulling from an even dozen classes, running from moderately modified, street-legal diesel pickups to modified tractors powered by performance automotive V8s to Limited Pro Tractors, the kind that might have originally plowed a field, only now fitted with turbocharged diesel engines and running at a weight of up to 9,000 pounds. All of them take part in the action of moving the weighted sled from one end of the track to the other, an achievement that's celebrated as a "full pull." There's also a highly popular Full Pull class for big rigs, matching beefed-up Class 8 highway trucks in competition.

What is pulling? It's a motorized contest that takes place over a manicured dirt surface that's at least 30 feet wide and 320 feet long, but often larger.

Love is also versed in what happens next, because Full Pull also designs and builds the pulling sleds that are integral to the sport. A sled essentially attaches to the drawbar of a pulling vehicle. When the start flag is waved, the pulling vehicle moves out on the groomed dirt pulling course, and the weight box atop the sled—the weight varies by class—begins moving forward, driven by gears that pull the weight box up and forward along the sled's frame rails. An electronic trip mechanism then lets the sled's hydraulically controlled weight pan drop toward the ground, where bars at the bottom of the pan will dig into the track surface. The amount of resistance increases with distance. The physical weight on the sled is 25,000 pounds, and as Love explained, the sled transfers 500% of that weight forward during the pull. The competitor whose rig pulls the sled the farthest is declared the winner of the pull.

PARTS IN DEMAND

This kind of action occurs hundreds of times per year across multiple classes and sanctioning bodies. Pulling's popularity has led to a universe of specialty products aimed at maximizing this exercise in pure torque and horsepower. This new audience



With the possible exception of nitro-fueled drag racing, no other brand of North American motorsports provides the sort of thunderous, torque-crazed competition that pulling delivers to its fans.

provides extensive marketing opportunities to not only promote products, but to engage the attention of the sport's growing spectator

base. One of the most prominent suppliers in the pulling world is Pacific Performance Engineering (PPE) of North Las Vegas, Nevada, which has a strong working relationship with another pull organizer, the National Association of Diesel Motorsports (NADM) in Kansas City, Missouri.

PPE's business, and NADM's contests, revolve primarily around modified diesel pickups. As PPE's Eric Sempson explained, "Pulling is probably 30 to 40% of our

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"At these pulls, people will see our products as the best of the best," said John Benschopf of Fleece Performance Engineering. "We sold more engines this year for the pulling market than we ever have in the past."

Larger and heavier pulling vehicles can find a performance partner at Hart's Diesel and Machine in Fayette, Missouri. Roger Conley said much of Hart's work involves turbochargers and fuel systems for larger diesel pullers, such as Pro Stock tractors. "That class is the big one now," Conley said. "We supply premium turbo and fuel systems for all tractors in the diesel environment. We supply complete injectors, pumps, lines, all dyno'd for the application. It's a very dynamic range. Our smallest turbo on the dyno might make 1,500 hp, whereas the Pro Stock turbo might make 5,000. What makes Hart's unique is that in this R&D process, we machine every single component of each turbo right in our building, including the manufacturing of compressor wheels. The same applies to our fuel systems, which are custom high end with billet pumps. We had to build a giant pump dyno with electric power to test them, the only one in the world. You can't have a good turbo without a good fuel system because you'll just burn the engine up."

What about marketing? In Conley's view, "We do it the old-fashioned way. We just go out there and run." He noted that a recent major indoor pull at Shipshewana, Michigan, drew 420 pulling tractors, and 372 of them were Hart's-equipped. "We do some social media, and go to the PRI Show, but the pulling world is one of the tightest communities I've ever encountered in my 40 years in the aftermarket industry. Pulling is continuing to advance, in terms of using software, firmware, scanners, and 3D printers in product development. We're using

business. Our equipment is going to be for a Chevrolet or GMC Duramax 6.6-liter turbocharged diesel." A key component in PPE's inventory is its Dual Fueler pumping system, for Duramax and other diesels, which Sempson said "provides redundancy for the factory fuel pump, allows improved fuel flow, and also allows the fuel pressure to be consistent." It's a bolt-on component, available for 15 years now, that does not require dyno tuning. Available horsepower for a Duramax can range from 500 to 2,000 hp, depending on equipment. PPE also produces transmission coolers, transmission pumps, transmission pans, and differential covers, with these components aimed at all three major diesel engines for light trucks: Duramax, Navistar, and Cummins.

PPE markets extensively, starting with its sponsorship of NADM, where its Dual Fueler is the group's official fueling system for pulling-class pickups. "In terms of marketing, we do Instagram, Tik Tok, we advertise in Diesel Power magazine, we have banners at the track, and we do YouTube videos. Different media come to us, and we do hands-on videos, like installations, and cover all the bases we can. We're also a National Hot Rod Diesel Association participant, primarily with diesel trucks."

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that technology to move pulling forward.”

In terms of direct sales, the market for pulling engines and components is a small element of overall business for Fleece Performance Engineering in Pittsboro, Indiana, which produces custom engines, engine kits, and hardened components, largely for wholesalers and diesel repair shops. Pulling, however, is an integral part of Fleece’s test lab for creating new products that aren’t necessarily pulling-related.

“We sell a stock Cummins cylinder head, but a lot of the technology in that stock head is derived from trying to make the head live in a pulling truck,” said John Benshoof. “Although it’s got a different valve size or spring rate, we’re able to take those concepts and apply them backward to our everyday products, and in turn put the best product we can on the market.”

Fleece’s “bread and butter,” as Benshoof described it, is components for pulling trucks running in classes that mandate maximum turbocharger inlets of 2.6 and 3.0 inches. Fleece specializes in both parts and complete engines for both of those pulling categories.

“Our customers are looking for high-quality products that solve problems, and we try to do that as elegantly as we can,” Benshoof continued. “Pulling is just a sliver of our overall business, but we look at all motorsports as a way to market our brand, and at these pulls, people will see our



PPE’s Dual Fueler pumping system, for Duramax and other diesels, “provides redundancy for the factory fuel pump, allows improved fuel flow, and also allows the fuel pressure to be consistent,” said Eric Sempson.

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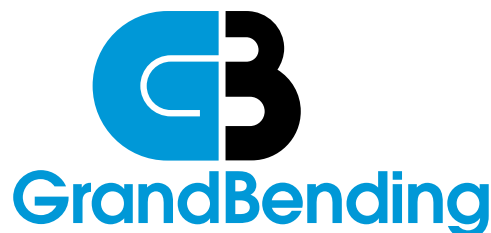
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Hot Shot's Secret addresses the unique lubrication needs of the pulling world with its Adrenaline line of severe-service oil and fuel additives. "It's cost efficient, and you get the power and protection you need to keep things running a long time," said Josh Steinmetz.

failure, or else a blower belt or turbo comes apart from heat and pressure. There's a lot of shock loading, as well, so you also have a lot of driveline issues. So the Adrenaline line also includes gear additives, as well. We do see sometimes where it's really tough because you're applying such a shock load all at once.

"As you increase the engine's power, the lubricity's effect is usually the exact opposite," he said. "If you're running a lot of fuel at extreme pressure, the fuel is acting as a lubricant for the pump and injectors. Having [Adrenaline additives] is a really nice option, because it's cost efficient, and you get the power and protection you need to keep things running a long time."

BUILDING THE SPORT

Today, pulling presents similar opportunities to those of drag racing when it comes to audience participation, or simply finding new competitor interest. The NADM now does eight major regional events a year, but Ron Knoch said the sport's appeal is far more extensive than that.

"It's big. Starting the first week of June to the end of August, you can find sled pulling at local, state, and county fairs practically six days out of the week, every night, in each state, from Kansas all the way to New York. That's how big it is," he explained. "We concentrate on the farm belt for our events because that's where the trucks are. We are mainly 3/4-ton and 1-ton pickups, so that

products as the best of the best. We sold more engines this year for the pulling market than we ever have in the past. In my opinion, it is interesting to see how much more refined the sport has gotten just in the past 10 years."

The insane output of an all-out pulling engine means that proper lubrication is absolutely critical to avoiding a part-spewing disaster. Hot Shot's Secret in Mount Gilead, Ohio, is in the business of providing specially formulated additives for extreme-service powerplants. Josh Steinmetz came to the firm with a strong working knowledge of pulling requirements, having spent a dozen years with the National Tractor Pulling Association (NTPA). Hot Shot's takes on the world of pulling with its Adrenaline line of severe-service oil and fuel additives. As Steinmetz explained, Hot Shot's additives are exclusively formulated using Group 4 poly-alpha-olefin, which are full-synthetic oils using a non-polar polymer as their basis.

"A Pro Stock tractor has a maximum of 3,800 to 4,000 hp from an engine that originally made 130 hp," Steinmetz explained. "You usually see a lot of valvetrain

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means we're looking for street trucks, with a few tractor classes."

Knoch said he and the association are fully committed to attracting new participants to pulling, and the NADM has been successful at sponsor relations for its entire existence. "The reason is that the competitors use our sponsors' products. If you want to build the sport, you have to attract the local people with street trucks who are interested in pulling. Once you do, they want to increase the truck's output and go to one of the bigger classes. But first, you have to get them started, and the only way to get them started is in street truck.

"You know what? A stock truck can be a puller," Knoch said. "You can set the sled where's it's a 5,000-pound pull, which is the normal pulling tongue weight of the trailer. So if you can pull a 5,000-pound trailer, you can go sled pulling. Our categories today go from factory stock to highly modified. All of our sponsors are major manufacturers: ARP, MAHLE Motorsport, Callies, Total Seal, AutoMeter, PPE, Amsoil, Thermo-Tec. All the sponsors produce performance replacement parts that are all CARB approved for 50 states and have EPA numbers, so they're legal for use on street vehicles. At the events, we have a sponsor tent full of equipment and literature, so the fans and competitors can learn what's new and how they can benefit from purchasing the products." **PRI**

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TEAMS AND MANUFACTURERS WAGE A CONSTANT BATTLE AGAINST BRAKE HEAT. HERE'S EXPERT ADVICE ABOUT HOW TO CONTROL THAT HEAT AND COMPLETE THE RACE TO THE CHECKERED FLAG.

By Steve Statham



Excess brake heat in a racing environment is something that's hard to ignore. Fans can't help but notice the glowing brake rotors of the cars on track, shining like molten donuts and throwing off heat you can practically feel in the grandstands. Drivers know that sinking feeling in the pit of their stomach when, late in a race when brakes have been pushed to the limits, a brake pedal no longer responds to commands.

Parts manufacturers are well aware of the detrimental effects of out-of-control brake heat and offer an impressive selection of rotors, calipers, pads, and fluid to keep racers on track. The demands of different forms of racing offer constant challenges, but manufacturers often work directly with teams to solve problems and develop new products.

"No matter what brake system you're running, heat is the killer," said Dave Brzozowski of Wilwood, Camarillo, California. "Fluid is very important because heat will immediately attack fluid and its ability to take it. Then you have things that are all caliper related, so you have the heat dissipation, seals, pads. Pads, when they get extended heat periods or high heat, certain ones can become more compliant. They might look good, but they get a mushy feeling or soft, and lose some of their density."

High levels of heat will become noticeable to a racer in a variety of ways. "There's pretty much two kinds of fade. There's either pad fade or fluid fade," said Mitch Bloom of Hawk Performance, Medina, Ohio. "If the fluid starts to oxidize and get bubbles in it, that will result in a spongy pedal. That's what most associate fade with. Pad fade is more of, the brake pedal feels fine, but the car is not slowing down. Or the characteristics of the pad are deteriorating and maybe its bite isn't strong, or maybe the friction isn't as linear with the pressure you're applying."

High heat can then create a cascading effect throughout the braking system. "When the friction material starts to overheat and go over its maximum temperature range, pad wear will accelerate really quick," said Edwin Mangune, also with Hawk Performance. "You'll also get glazing on the pad surface and on the rotors, which will affect stopping power. You'll get excessive pad transfer onto the rotor. You'll see a heavy build-up of the pad material on the rotor, which will cause an uneven surface, so you'll get feedback from the pads to the brake pedal. Which can definitely annoy the driver and break his concentration."

TEAMWORK

When it comes to addressing brake heat, there's no better strategy than getting in the trenches with race teams

"THE THICKER BRAKE PADS ALLOWED THE HEAT TO DISSIPATE BEFORE IT TRANSFERRED TO THE ROTOR AND THE CALIPERS AND THE REST OF THE BRAKE SYSTEM."

and working through the problems. Our sources were hands-on when it came to interacting directly with racers.

"New Smyrna Speedway is a pretty hard-braking place. This year in particular, brakes are glowing around there for 100 laps. It's not uncommon to see front brake rotors glowing," Brzozowski said. "I ran three different pad compounds at New Smyrna with teams back in February clear up until May and June. We used all that to come to a conclusion that 'This pad is something we want to move forward with,' and we instigate it. That's how we go about it."

Halo by Orthene in Harrow, Middlesex, United Kingdom, specializes in brake fluid. The company's flagship racing product is Halo P1. "Halo P1 was formulated after over 18 months of research and discussion with a number of top-tier race teams and performance OEMs," said Daniel Stafford. "It has taken Orthene's near 50 years' experience specializing in brake fluid to create the best racing brake fluid we've ever produced. It's formulated for track-only usage, which means that we've been able to focus on achieving the best performance, rather than needing to adhere to some of the requirements for road usage that limit what's possible from a performance perspective."

When developing P1, specific challenges from different racing series had to be considered. "Closed-wheel teams were using unsuitable fluids for ABS-equipped systems, which was causing poor performance and costly damage to ABS systems. P1 is fully compatible with ABS, as are most glycol or glycol ether-based brake fluids, as opposed to mineral, silicone or silicate ester-based fluids," Stafford said.

"In rallying, an issue was teams using fluids with high viscosity. Certain brake fluids are highly viscous at low temperatures, which make them unsuitable for cold weather environments," he continued. Another focus of P1's development was heat soak during pit stops, which causes the pedal to be almost completely lost for the lap coming out of the stop, he said.



"No matter what brake system you're running, heat is the killer," said Dave Brzozowski of Wilwood. Parts manufacturers, well aware of the detrimental effects of out-of-control brake heat, offer an impressive selection of rotors, calipers, pads, and fluid to keep racers on track.

Sometimes working directly with race teams takes manufacturers in unexpected directions. "I was approached by a Trophy Truck team for the Baja 1000," Mangune recalled. "The Trophy Truck guys several years ago would have to do one brake pad and rotor change to finish the race. Cooling was not an issue, and they couldn't run any brake ducts because all they were going to get was foreign object debris being forced into the brake system. I went out to Barstow [California] with the teams and did some testing, and I brought a few pad materials I thought would work. One in particular was DTC-70. Back then, it was our highest torque pad with the highest temperature range," he said.

"It solved the problem at Barstow in testing, so when it came to the real scenario at the Baja 1000, there were four or five cars that were on that pad. We weren't really known in off-road back then, but after those trucks finished the race on one set of pads and rotors and said they had the best brakes ever, we became instantly popular."

In a different corner of the racing universe, Mangune worked with a team in vintage racing to tackle overheating brakes. "It was a 1969 Camaro in SVRA Group 6. No matter how big the cooling vents were that the team put on the car front and rear, it couldn't keep the brakes cool enough," he said. "Because it was a vintage racer, they

"Advancements in brake fluid technology have largely followed the new requirements of innovation within motorsport," said Daniel Stafford of Halo by Orthene. "These advancements require new formulations with new properties achieved through innovation in the production process, base materials, and additive packs."

had to use the brakes spec'd for that class, which were the stock brakes basically. What the team did, and I was working with them very closely on this, was utilize a bigger rotor, a bigger heat sink.

"It was the same diameter because that was the call-out. But they didn't say anything about the width, so he added more mass by going with a wider rotor, which gave us wider cooling vanes between the rotor plates. To do that, he made a spacer on the caliper to accept the wider rotor. While we did that, we made thicker brake pads for him. The thicker brake pads allowed the heat to dissipate before it transferred to the rotor and the calipers and the rest of the brake system.

"Everything we did was working better, but still not good enough, especially at tracks like Road America. So what he did was, on the intake ducts—which were huge, 3 or 4 inches, trying to maximize the airflow through there—he added bilge pumps from boats, used to evacuate water from the bow, which moved a lot more air than the vents did aerodynamically. That really helped manage the heat to keep the brake temperatures down. The stopping power was maximized as opposed to running hot and degrading," Mangune said.

CHANGING DEMANDS

Nothing stays static in racing for very long, and brake development is no exception. Manufacturers are constantly developing



“THERE’S STILL A LOT THAT WE CAN DO WITH BRAKE FLUID, AND NEW AVENUES TO EXPLORE.”

new products and solutions that will keep heat at bay. “There’s a lot of work that goes into the pad side of things. It’s a never-ending battle. You never can just sit there on your laurels and think you have the cat by the tail, and not think of the future,” Brzozowski said.

“Advancements in brake fluid technology have largely followed the new requirements of innovation within motorsport, be that the cars, parts, design, or regulations e.g., increasing grip-to-power ratio. These advancements on track require new formulations with new properties and are generally achieved through innovation in the production process, base materials, and additive packs,” Stafford said.

“There’s still a lot that we can do with brake fluid, and new avenues to explore,” he added. “In theory, we could produce tailored fluids for short track and long track, wet race versus dry race, and different atmospheric conditions. One property that has caught the eyes of the Formula 1 engineers is specific density, and we could potentially take 20–30% of the weight out.”

Larger trends in the automotive industry also guide brake development. “OEM cars, compared to 10 or 20 years ago, are much heavier and make way more horsepower than they did,” Mangune said. “It’s the same in race car classes. Trophy Trucks now are way more than the 7,000 pounds they weighed a few years ago, and making over 1,000 horsepower, whereas back then they were making only 700 horsepower. So we’ve stepped it up with our DTC-80, which we’d already had, but the same teams approached me because their trucks were heavier now and making 1,000 horsepower.”

Halo by Orthena has also followed the increased weight of modern race cars and adjusted its brake fluids accordingly.

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Ducting cool air to a brake rotor may accomplish cooling one side of the face or pad, reported one source, but the center of the brake is where racers should concentrate their work to cool the rotor. People will make ducts to actually cool the caliper. "They'll do two things: caliper and then the rotor," he added.

driver, the combined effect of high heat resistance and low compressibility across a wide temperature range results in a pedal that feels and operates consistently for the duration of the race, allowing precise modulation of the brakes.

"While a high boiling point is necessarily important, it is the way that the brake fluid responds to temperature that is critical. Ideally you want as stable a compressibility profile as possible to give a consistent performance over the widest temperature range. This will give the driver a firm pedal feel, allow them to maintain the same braking points lap after lap, and give them confidence in the car."

HANDS-ON

While parts manufacturers tackle brake heat from a product perspective, there are many things racers can do to help themselves when planning car builds or working through the racing season.

"A high boiling point is often used as a selling point. But the high boiling of Halo P1 enables the low compressibility of the fluid to be maintained even at extremes of temperature," Stafford said. "That's an essential attribute not only for closed wheel hypercar race series, but also saloon car racing series such as BTCC where vehicle weights have increased dramatically due to increased safety requirements and also the hybridization of powertrains. To the

"WHILE A HIGH BOILING POINT IS NECESSARILY IMPORTANT, IT IS THE WAY THAT THE BRAKE FLUID RESPONDS TO TEMPERATURE THAT IS CRITICAL."

“The other thing about cooling—and this is where people miss the boat a little bit—is the fact that when you have a rotor that is a vented rotor, a curved vane rotor, the whole purpose of a curved vane is to act like a fan internally,” Brzozowski explained. “So you want to force the air to the center of the rotor to have those vanes moving to draw the air between the inner and outer face to help cool the rotor. Some people will just take a hose and a duct, and they’ll flow it to the face of the rotor. That may accomplish cooling one side of the face or pad, it may serve some purpose. But to truly cool a brake rotor and make it work, the ducting is everything.”

Halo by Orthere’s flagship P1 brake fluid “is formulated for track-only usage,” said Daniel Stafford. “We’ve been able to focus on achieving the best performance, rather than needing to adhere to some of the requirements for road usage that limit what’s possible from a performance perspective.”



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Regular brake system maintenance plays a big role in minimizing brake heat in applications—like open wheel race cars—where ducts aren't a factor. "You do all that stuff, and nine times out of 10 you're not going to have any issues," Wilwood's Dave Brzozowski said.

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That's why the center is really where you concentrate your work to cool the rotor. People will make ducts then to actually cool the caliper. They'll do two things: caliper and then the rotor."

As with other aspects of motorsports, a bigger number is not always the optimum solution. "When we developed our brake fluids, of course we developed them to match our different friction profiles. For example, a race team could be out there with our highest torque, highest temp pad compound, which is DTC-80," Hawk's Mangune said. "But a mistake that often occurs with race teams is they'll use the very best high-temp fluid that doesn't break down, but the problem is that fluid will never boil, never get hot enough to break down to where the pedal will start getting soft. So the driver will not have any indication that he's overheating the brakes. And he'll just burn them down to nothing. With our fluid, even our 660, which matches our



pad compound profiles, it will give the driver an indication that the brakes are overheating because the pedal will get soft. So the driver will know, 'I'll need to save my brakes.'"

Shiny new parts play their role in minimizing brake heat, but regular maintenance plays just as big a role. "On a normal weekend racer, whether it's a big block modified, a sprint car, even a tour-type modified, there are no real brake ducts on an open wheel car," Brzowski said. "But on those applications, a lot of it is maintenance—ensuring that you've got really good fluid that can take whatever you're dishing out to it and ensuring that you're doing your lead process and staying on top of your preventive maintenance. You do all that stuff, and nine times out of 10 you're not going to have any issues." **PRI**

SOURCES

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How the right cabinets, work benches, chairs, and other equipment can improve productivity in the race shop.

By Andy Heintzelman



ORGANIZATION STATIONS

Photo courtesy of CTech Manufacturing

Tool carts, cabinets, creepers, work benches, lifts, and other organizational infrastructure play a vital role in a better motorsports operation.

“Organization, in both the literal and storage sense, is a key aspect of efficiency and productivity,” said Justin Hawkins of Tekton, Grand Rapids, Michigan. “A well-made cabinet and tool organizer can reduce clutter, giving professionals more time to work on the task at hand and save time when the job is done and the tools need to be stored.”

Organization goes ever further in today’s market, said Nate Birkenmeier of CTech Manufacturing, Weston, Wisconsin. “Nowadays, [organization] is integral to the business of motorsports

as teams search to bring more branding opportunities to sponsors,” he said. “Time and effort spent sorting through plastic bins filled with spare parts or crawling around in the trailer looking for a specific tool is a complete waste.”

From efficiency to comfort to organization, this look at outfitting your race shop offers the latest ideas to help put your team on the winning path.

CUSTOM EFFICIENCY

The methodical approach of today’s professional race teams demands that crew members work in the shop similarly to how they work while under pressure at the race track, said Birkenmeier.

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RACE SHOP PRODUCTS



Wehrli Custom Fabrication started making work benches after being dissatisfied with what was available when it expanded its shop in 2021–2022. “We have a few more accessories and designs in the works,” said Kris Carlson. “Keep an eye out for more details at this year’s PRI Show.”

CTech promotes this approach in its relationship with NHRA Pro Stock team Elite Motorsports. When Elite recently overhauled its racing headquarters, it used custom cabinets and carts to help create a more consistent environment.

“Similar to the track setup, each engine and or race car has its own storage solutions dedicated to the job at hand,” Birkenmeier said, noting the example of a transmission cart with gear sets, forks, and appropriate tools.

“Part of what makes us so successful is that we practice each day like we are at the track,” Elite Motorsports driver Erica Enders said about the familiar at-track and shop setups.

CTech also played a role in setting up the new shop for the NASCAR team 23XI Racing. “I appreciate CTech’s ability to help design and manufacture professional storage solutions for our use in Airspeed while meeting quality standards and delivery dates that we set,” said the team’s Mike Wheeler.

FABRICATING A SOLUTION

Wehrli Custom Fabrication in DeKalb, Illinois, has a unique perspective on work bench manufacturing, having started it alongside an extensive racing fabrication business because of dissatisfaction with what was available, said Kris Carlson.

When Wehrli moved into a 112,000-square-foot shop, nearly three times its previous size, in the winter of 2021–2022, it started building the tables for various departments as they got organized.

“[It] then became something that we started offering to others when visitors to our shop started asking questions about where our tables came from and how they could get some for their own use,” Carlson said.

Those visitors had attended Wehrli’s first company open house in 2022, at which one of the custom work benches was auctioned to benefit the Wehrli Custom Fabrication Scholarship Fund, which helps students looking to pursue a career in the trades.

Wehrli benches, which are laser cut, CNC bent, hand welded, and custom finished, are used in some form in every department: engineering, sheetmetal fabrication, powder coating, engine dyno,

and others.

For any shop, mobile work benches are used to help get loose parts and frequently used tools off the floor during tear downs and rebuilds to improve organization and cleanliness, and they improve efficiency by cutting down on trips to and from a stationary bench and the vehicle being worked on, Carlson said. They also preserve “precious floor space,” he said.

The most popular Wehrli model sizes for race shops are the 32-by-48, 32-by-72 and 32-by-90-inch, each with optional stainless steel tops. The latter is “perfect for tackling big projects that require more space while still being able to roll through a standard-size-man door if necessary,” Carlson said.

Having utilized its fabrication expertise to fabricate work benches, Wehrli has more in store. “We have a few more accessories and designs in the works,” Carlson said, “so keep an eye out for more details to appear at this year’s PRI Show.”

Meanwhile, the company’s third open house is scheduled for October 5, and again the scholarship fund will benefit.

—Andy Heintzelman

Birkenmeier noted a new feature for some CTech cabinets: the HalfAss Caster wheel—a smaller version of its BadAss Caster—which rolls like a pneumatic tire but is compact and maneuverable like a caster.

Overall, he said it can be an “incredibly overwhelming task” to outfit a race shop, but there are options. “Sometimes teams present us with a space and ask us what we think they should do with it,” he said. “Other times, they send us a spreadsheet of all the tools and equipment they want to store, and our in-house team of experts and engineers figure out what to build around those items.”

Many of the all-aluminum shop benches and cabinets manufactured by TechnoCraft Cabinets in Mt. Pleasant, Tennessee, are custom made, said Brian Hope. “Everything that we make we build to order, so we have an advantage when a customer has a need like an odd-length wall,” he said.

Its benches and cabinets are sturdy, durable, and not susceptible to moisture or chemicals, Hope said. They come in various lengths, and TechnoCraft’s tool boxes, also manufactured at its Tennessee facility, can be added to almost any cabinet. “We build a lot of tool boxes to fit a lot of different needs.”

TechnoCraft can also personalize its work benches with durable printed wrap worktops.

Moduline Cabinets in Brockton, Massachusetts, also manufactures modular, custom aluminum cabinet systems. Its Pro Series cabinets are its most popular among racers and car enthusiasts, said Paul Gill.

Moduline also offers rolling tool boxes equipped with heavy-duty, shock-absorbing casters for ease of movement, whether across the shop or into the pits.

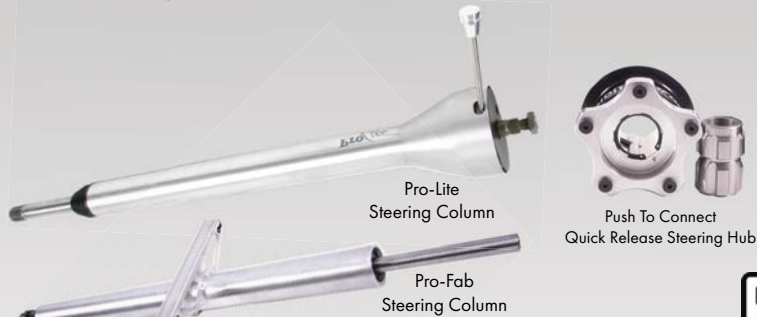
Minseok Kim discussed two of the many race shop tool and cabinet combinations from TONE Americas in Frankfort, Kentucky, a company that will make its first appearance at the PRI Show this year.

Kim said the TCXT9110, released in late 2023, a tool set using TONE’s largest cabinet, the WSE2017R, was created through discussions with race team mechanics who wanted frequently used products in easily accessible locations.

It exemplifies TONE’s expansion from serving vehicle manufacturing, which it has done for some 87 years, to a concentration on the racing industry, which Kim said is growing in Japan.



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The TCXT9110 includes 381 items and has carbon-style trays that list product names or sizes, which reduces time spent searching for tools, he said.

Also popular in motorsports shops is the TCX990, which includes the WSH2012R cabinet. A wooden board is sold separately to transform the top into a work space. "The TCX990 is a heavy-duty roller cabinet set equipped with tools from TONE's highest model storage tool series," Kim said. The TCX990 also has labeled carbon-fiber trays and 381 items.

A unique product from Tekton is the L-BOXX Stacking Organization System, with modular stacking tool drawers that can ride on a dolly. "[It's] meant to give tool users a mobile, highly customizable storage option," said Hawkins.

Among the more popular combinations is a 248-piece tool set in six drawers that includes all of the basic hand tools a mechanic would need, he said.

Tekton cabinets and tool drawers come with optimized foam layouts made from a closed-cell polyethylene foam that doesn't absorb liquids and helps retain shape, Hawkins said. All tool sizes are laser-marked in the foam, which has permanently bonded top (red) and bottom (black) layers, a contrast that quickly exposes a missing tool.

Tekton offers a variety of tool cabinets, with its 60-inch wide, 30-inch deep and 41.5-inch-high version the most popular, including the 11-drawer, 40/60 Split Bank cabinet. Each drawer in a Tekton cabinet

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Vyper Industrial's chairs, creepers, and carts are a staple in race shops, said Dayne Rusch. Their large casters help them glide over any surface and prevent tipping. Vyper's chairs help increase productivity by improving posture and comfort during long sitting durations.

has a carrying capacity rated up to 400 pounds, and the drawers can be opened at any point along the handle, Hawkins said.

CREEPERS OF COMFORT

Vyper Industrial's chairs, creepers, and carts are a staple in race shops, said Dayne Rusch from the Green Bay, Wisconsin, manufacturer. He highlighted the use of 4-inch casters on Vyper chairs and creepers and 6-inch casters on carts to help them "glide" over any surface and prevent tipping. "Many products in the industry today use small casters that can't roll over cracks, zip ties, or even loose debris on the floor."

Vyper chairs are powdercoated and have supportive backrests; thick, comfortable seats; and laser-cut steel supports, Rusch said. Available in various models, the chairs have a modern, industrial look, and each chair can have different colors on the seats and legs. They help increase productivity by improving posture and comfort during long sitting durations, which Rusch said overall improves employee morale.

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The Shop Crane by Gorbelt turns heavy lifting into a one-person job and frees floor space compared to using an engine hoist, said Todd Wagner. "One of our customers gained 25-30% in production."

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Creepers, also powdercoated, feature an adjustable headrest, caster covers that prevent hair and clothing from getting caught, and suitcase-style handles for easy carrying. Users lie on a canopy-style, puncture proof, oil- and chemical-resistant fabric.

Vyper carts feature modular racking—users can attach accessories on the side—and a 1,250-pound weight capacity.

Rusch said customers who rebuild engines sometimes have a cart at every station. "This way, they can roll the engine from station to station."

Weight is not an issue, Rusch noted. "The Vyper cart actually rolls better while there is weight on it."

LIFT IN PRODUCTION

A new "height" of organization can be achieved in a race shop with a vehicle lift. Advantage Lifts in Hanover, Pennsylvania, offers its AL-SC10, the most common model purchased by race shops that want a two-post lift for maintenance and repair. "A lift provides a boost in productivity due to the ease of doing simple maintenance and the ability to do larger-scale jobs with much less stress than if they are being done while lying on your back," said Aaron Harpine. "Your

THE CONFIGURATOR

Moduline Aluminum Cabinets in Brockton, Massachusetts, has received a "great response" from customers to its Pro II Configurator, introduced at modulinecabinets.com earlier this year. It allows customers to help design their own shop cabinet setup.

"Like most people, I do much better if I can see it, and our configurator makes it easy to get those ideas onto your screen so you can start focusing on the little details and tailor the setup to your own needs," said Paul Gill.

A video walks customers through the process: pick a color, set the cabinet height, drag and drop cabinets from a list of options into the design, choose accessories, etc.

So far, more than half of Moduline's customers are starting their projects with the online configurator. "It's been a great way for our customers to take ownership of their project and have input right from the very beginning," Gill said. —*Andy Heintzelman*

shop will be better organized with a lift, as it allows you to go as far as stacking two cars over one another in a single bay."

Advantage Lifts has two-post lifts, which use two cylinders, with 10,000- and 12,000-pound ratings, and four-post lifts, using just one cylinder, holding 9,000 and 11,000 pounds.

"We can often fit a lift in almost any garage due to the various options we offer," Harpine said. "Our four-post lift is offered in a double-wide configuration that allows you to put two cars up and two cars underneath in a two-car garage."

He said Advantage Lifts plans to release a double-wide, three-high stacker that puts six cars in a two-car spot, provided the facility has ceilings nearly 20 feet high.

Rather than lifting an entire car, you may need only to move a cylinder head—or three—across the shop. That's where the Shop Crane by Gorbel, an overhead bridge crane system, comes in.



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“We can fit a lift in almost any garage due to the various options we offer,” said Aaron Harpine of Advantage Lifts. “Our four-post lift is offered in a double-wide configuration that allows you to put two cars up and two cars underneath in a two-car garage.”

“One of our customers, Motion Dynamics, noted in their case study that they gained 25–30% in production as their operators can now pick up three cylinder heads at a time with the Shop Crane, which was a huge time saver,” said Todd Wagner.

Shop Crane turns heavy lifting into a one-person job and frees floor space compared to using an engine hoist, he said.

The Victor, New York, company's biggest seller is its 1,000-pound capacity crane with a 12-by-15-foot bay size at either 10-foot or 12-foot system height. (Shop Crane bay widths and heights each range from 8 to 20 feet.)

Common applications include lifting dressed engines into and out of vehicles, moving engine blocks to various machining centers, or lifting and lowering car bodies onto chassis, Wagner said.

The Shop Crane also improves safety, including the reduction of repetitive lifting injuries that can affect the bottom line with lost time and worker's compensation claims, he said.

Wagner recommends pairing the Shop Crane with the Gorbels GS Electric Chain Hoist. It has suspension plates that provide a precise fit for work station cranes, and the

two together create a complete, reliable, and safe lifting solution.

THE VALUE OF TIME

Those in the market for cabinets, work benches, and other equipment to outfit their race shops should assess their own organizational needs, and then consider mobility, modularity, customization, employee comfort, safety, and morale.

Hope from TechnoCraft not only manufactures equipment to help race teams stay organized and productive, but he also encourages such organization among his employees. “And, yes, that makes more money for me. Absolutely. But it also reduces their fatigue,” he said. “On a day like today when it's 94 degrees outside, if you can cut down your movement, and you can cut down your steps not having to wander the shop looking for a part or a tool...that difference is huge at the end of the day.”

Any time you're organized, it puts you ahead of anyone else. And when that comes to preparing for a race, Hope said, “it puts me ahead of my competition.”

Or, as Birkenmeier from CTech put it, “In business, time is money. In racing, time is the difference between winning and losing.” **PRI**

SOURCES

Advantage Lifts

advantagelifts.com

CTech Manufacturing

ctechmanufacturing.com

Moduline Aluminum Cabinets

modulinecabinets.com

Shop Crane

gorbel.com/shop-crane

TechnoCraft Cabinets

trailer cabinets.com

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tekton.com

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TAILORING FOR SUCCESS: CUSTOMIZING MOTORSPORTS SPONSORSHIP DECKS



WHY A PERSONALIZED SPONSORSHIP DECK IS NECESSARY TO OBTAIN SPONSOR SUPPORT AND HOW TO EFFECTIVELY PUT ONE TOGETHER.

By Ken Ungar

In motorsports sponsorship, where the competition for attention and investment is fierce, the ability to stand out and make a lasting impression is paramount. Picture this: two race teams with their sponsorship deck, each meticulously crafted to showcase the benefits of partnering with a brand. One is a generic template, filled with generalized information and lacking personalization. The other is tailored specifically to the needs, interests, and values of the prospect it aims to captivate.

As a sponsorship consultant, I've seen firsthand the stark contrast in outcomes between these approaches. Customization isn't just a nicety; it's necessary in today's

market, where authenticity and relevance reign supreme. A one-size-fits-all pitch won't cut it. Let's delve into why tailoring your sponsorship deck to each prospect is essential for success.

WHY THE DECK IS SO IMPORTANT

A sponsorship deck outlines a potential sponsorship opportunity for a sponsor. Its purpose is to garner enough attention from a sponsor to warrant a call or meeting with the sponsorship seller. The deck creates the first impression of the driver, team, or race track in the sponsorship hunt.

Sponsorship managers receive numerous sponsorship decks every month. The decks

A one-size-fits-all pitch won't cut it anymore in the hunt for sponsorship. When reaching out to potential sponsor partners, a tailored sponsorship deck is now required to further that conversation.

that grab their attention are the ones that are relevant to their needs. If you receive many emails, you probably only open and read the ones important to you. Similarly, sponsorship managers will only pay attention to the decks that are relevant to their business. To create relevance, you need to customize your sponsorship deck to meet the sponsor's specific needs. Since every sponsor is unique, your deck should be tailored to fit their requirements.

UNDERSTANDING SPONSOR PROSPECTS

To customize a sponsorship deck, one must first understand the potential sponsor. Sponsors each have distinct business objectives, whether it's enhancing brand visibility, launching a new product, or driving sales. The initial step involves research to understand these goals. There's never been so much information about so many companies freely available on the internet. Researching a prospect often provides all the "breadcrumbs" necessary to create a relevant and targeted sponsorship deck.



When researching potential sponsors, pay close attention to who they are trying to reach and how that connects with your audience. Audience includes the fans of a racer, team, or track, or race attendees, television viewers, website visitors, or email subscribers. For example, a sponsor may want to connect with families, which should be addressed in the Audience section of a sponsorship deck.

THE CUSTOMIZATION PROCESS

Curating a sponsorship deck entails compiling data and insights directly addressing the sponsor's needs. The structure of the deck itself should unfold to address these needs clearly and compellingly. It's essential to distinguish between customization and personalization; the former involves tailoring the proposition to the sponsor's objectives, while the latter might include using the sponsor's name or brand colors.

ELEMENTS OF THE CUSTOMIZED DECK

Describing yourself in a relatable way.

Often, a deck opens with an "About Us" section, introducing the racer, team, or track. This section must accomplish two objectives for the seller. First, it must present a unique description of the seller's brand. A sprint car driver's deck must differentiate this driver from the many other sprint car drivers in the US who are also looking for sponsorship. However, even a unique description may be tweaked as this section is customized.

For instance, the sponsor must see its brand values in the driver's description. If a sponsor prospect works at a family company with a long history, they likely want to connect with a driver from a racing family with a long history in motorsports. Similarly, a tech company would like to affiliate with a tech-savvy driver who can symbolize change and innovation, as most tech companies do. Consequently, the About Us section would be customized to the brand values of each prospect.

Your audience matches the sponsor's customers. An audience is generally the fans of a racer, team, or track. However, the audience can include race attendees, television viewers, website visitors, or email subscribers. The sponsorship seller describes its audience in terms of demographics (like age, gender, residence, and household income), psychographics (like values and hobbies), and buying preferences (like preferred products or brands).

The Audience section of a deck must highlight the audience segment most relevant to each sponsor prospect. Sponsor A may seek young male customers, while Sponsor B seeks to connect with families. Sending the same deck to both Sponsor A and B could turn off both. Therefore, you'd want to customize each deck to tell the story of the young males (for Sponsor A) and families (for Sponsor B) who attend your race events.

Your sponsorship offer provides just the right tools. Your pre-sales research



As the motorsport industry continues to evolve, according to Ken Ungar of CHARGE, the future of sponsorship decks lies in the ability to innovate and customize in alignment with ever-changing sponsor objectives.

should guide what marketing tools you offer to a sponsor. A sponsor selling a business-to-business product cares little for logo placements on a car. They're looking for opportunities to meet other businesses at a race event that can buy their products. This sponsor may also value unique VIP events or hospitality to entertain potential customers.

Conversely, a sponsor introducing a new product in your race market would love logo placements, signs, and social media. This sponsor needs a racer to create awareness for new products when the sponsor needs awareness the most. Again, you would customize the deck to the sponsor receiving it.

MASTERING THE FUTURE

Customization is the keystone of a successful motorsport sponsorship deck. A tailored proposal demonstrates an understanding of the sponsor's needs and showcases a commitment to a strategic partnership. As the motorsport industry continues to evolve, the future of sponsorship decks lies in the ability to innovate and customize in alignment with ever-changing sponsor objectives. The era of generic proposals is over; the future belongs to those who master the art of customization in their sponsorship decks. **PRI**

Ken Ungar is president of CHARGE, LLC. Ken will share more details about how to customize sponsorship decks in his PRI Education seminar, "Customizing Sponsorship Decks: Dialing In The Perfect Pitch to Find Sponsors," on Thursday, December 12, in rooms 234-235 of the Indiana Convention Center during the 2024 PRI Show. For more information about CHARGE, visit chargesponsorship.com.

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PRI TECH

THE GREAT CIRCLE TRACK SHOCK DEBATE: TWIN TUBE VS. MONOTUBE

From asphalt bullrings to sweeping dirt tracks, which surfaces are better suited for using monotube or twin tube shocks in oval track competition?

By QA1

Many people in the circle track world—whether you're racing an asphalt bullring or sweeping dirt track—see shocks as the key to speed. And for good reason. While shocks are merely one part of your overall setup, they play a big role in the way your car handles and finds grip.

So what's the difference between a monotube shock and a twin tube shock? When or why do you need one versus the other? Before we answer those questions, let's cover a couple quick things.

First, shocks are ultimately a tuning device, not the end-all, be-all

*SHOCKS ARE
ULTIMATELY A
TUNING DEVICE.*



components that will win races. While they modify the way your car behaves, they won't solve every problem. Many other important factors, from bar angles to ride heights to spring choices, play major roles in performance. Check with your chassis builder—or other trusted expert on your class or track—to make sure you have a solid overall setup.

Secondly, shock choices often come down to driver preference. If you're an aggressive driver who

The choice between a monotube or twin tube shock can often come down to driver preference. An aggressive driver who loves a free car will choose a different setup than one who prefers a snug, predictable car.

loves a really free car, your shock setup will differ from someone who prefers a very snug, predictable car. Now let's get into the nitty gritty.

WHAT IS A MONOTUBE SHOCK?

Commonly called gas shocks, monotube shocks use a nitrogen charge. This gas is added via a port in the shock body. Some use a hyper screw, while others use a Schrader valve, depending on your class and rules package. This charge means there is always pressure in the shock, and the shaft floats on a cushion of gas.

The construction of the shock is right in the name. It is a single tube, and a floating piston rides directly against the body of the shock. This piston separates the nitrogen from the shock oil to keep it from foaming and becoming less effective.

WHAT IS A TWIN TUBE SHOCK?

A twin tube shock, which some call an oil shock or hydraulic shock, differs in construction and operation from a monotube shock. Instead of the piston riding directly against the outer body of the shock, there is a compression tube inside the shock body.

While a monotube shock uses nitrogen, a twin tube contains a sealed gas bag in the main body of the shock. As oil is displaced by the piston rod, it enters the shock body. The gas bag acts as displacement to ensure the oil is pressurized. This means the piston rod is not

A monotube shock can help add spring rate without over-springing a car, so they're often used when racers want to lift a corner or promote weight transfer.



“floating” on a pocket of gas. Instead, the oil is forced through the piston and base valve.

IS ONE BETTER THAN THE OTHER?

Short answer? No. Monotube and twin tube shocks each have advantages and disadvantages. The choice often comes down to driver preference and driving style, as well as the racing surface and the car’s overall setup.

Monotubes are good on rough or bumpy tracks. This is because they react more quickly to changes in the surface. The nitrogen charge adds spring rate to the shock, meaning it extends faster than a twin tube. That same gas charge makes them more suitable for high-compression applications.

Monotube shocks can also be used to help add spring rate without over-springing a car. They’re often used when you want to “lift” a corner of the car or promote weight transfer. Many drivers will run a monotube on the left rear of their dirt cars. They can also be used on the front end of asphalt cars to keep them from bottoming out. All of those traits can be helpful. But that same gas pressure gives the driver less feel for the track. And the more that shock compresses, the more spring rate it has.

Last but not least, monotubes are much more likely to be taken out of commission by a small dent or ding in the body. Remember, the piston rides directly against

Twin tube shocks offer more consistent valving through the whole range of travel than a monotube shock because they don’t build spring rate or gas charge.



MONOTUBES ARE GOOD ON ROUGH OR BUMPY TRACKS.

the shock body and uses tight tolerances. It can easily get stuck against a dent, and possibly even seize up.

WHERE DO TWIN TUBES EXCEL?

Twin tube shocks are great in very smooth or dry, slick conditions, as they provide more feel for the track. This is especially important when you’re fighting for traction. Twin tubes also offer more consistent valving through the whole range of travel because they don’t build spring rate or gas charge.

Twin tubes also perform well in high-rebound applications. This can help “tie down” the car. Many dirt racers will tie down the right front to help free the car up on entry. Asphalt racers may use them on both front corners to keep the front end from lifting off the track.

Because of their design, twin tubes can handle small dents and dings better than monotubes. So long as the compression tube is not deformed, the piston will still be able to move freely and keep the shock from seizing.

While that’s all great, twin tubes will not react to rough and rutty surfaces as quickly as monotube shocks. The lack of gas charge means they aren’t driven into the track in the same way. **PRI**

The QA1 team helps craft guides, articles, and other resources that effectively explain products and solutions designed to enhance your car’s performance. QA1 specializes in designing and manufacturing shocks, suspension, driveshafts, rod ends, and more for various high-performance vehicles and applications.

ADVOCACY CORNER

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

Edited by Jack Haworth

PRI's Washington, D.C.-based legal and advocacy teams work continuously to protect and support motorsports venues, sanctioning bodies, and businesses around the nation. We are tracking several topics this month, including filing a federal amicus brief with the U.S. Supreme Court to stop California's ICE vehicle ban, a new U.S. Environmental Protection Agency (EPA) proposal to partially ban a solvent chemical found in degreasers, and industry-relevant information about Vice President Kamala Harris' new running mate.

PRI FILES FEDERAL AMICUS BRIEF FOR LAWSUIT TO STOP CALIFORNIA'S ICE VEHICLE BAN

PRI and SEMA filed with the Supreme Court of the United States an amicus brief in the case of Diamond Alternative Energy, LLC v. Environmental Protection Agency. The brief outlines PRI's support for a review of the lawfulness of the EPA's decision to grant California the authority to limit the sale of internal combustion engine vehicles.

"It's important that the Supreme Court consider the perspective of the grassroots racing community in this potentially landmark legal case," said Karen Bailey-Chapman, SEMA and PRI's senior vice president of public and government affairs. "By filing this 'friend of the court' brief, we're able to highlight the significant potential ramifications to California's actions, and beyond that, the excessive economic damage that would be caused to an entire industry."

Using its EPA waiver, California—and by extension, the 16 states that opt into California's regulations—seeks to adopt Advanced Clean Car II regulations that would limit the sales of ICE vehicles from model years 2017 through 2025, culminating with a complete ban on the sale of ICE vehicles by 2035.

In requesting the court grant review of

the case, PRI argues that California's non-technology-neutral decision to limit sales of ICE vehicles will have a devastating impact on the automotive aftermarket industry, effectively killing, rather than fostering, innovation that can help produce cleaner, safer automobiles.

EPA PROPOSES REGULATION FOR PARTIAL BAN ON CHEMICAL FOUND IN BRAKE CLEANER, DEGREASERS

The EPA announced a proposed rule that would ban most uses of a chemical called 1-bromopropane (1-BP) under the Toxic Substances Control Act (TSCA). 1-BP is a solvent commonly used in automotive care products such as engine degreasers, brake cleaners, refrigerant flushes, and spray adhesives.

If finalized as drafted, the proposal would ban all consumer use of products that contain 1-BP except when used in building and construction insulation materials. The ban on consumer use would go into effect within six months after the final rule is published. The proposed rule would also require extensive worker protections for industrial and commercial uses of 1-BP.

"This is important information for anyone who uses these products, and we encourage those members to review the proposed rule and consider its impact to their daily

operations," said Tiffany Cipoletti, SEMA and PRI's federal manager for governmental affairs. "PRI and SEMA will continue to explore this issue and update our members with relevant information as it emerges."

The EPA will require any non-federal workplaces that continue using the chemical in industrial or manufacturing settings to implement a Workplace Chemical Protection Program that includes exposure limit monitoring, recordkeeping, and educating workers on safety when working with or near the chemical within 12 months of the finalized rule.

The proposal would also require the use of personal protective equipment (PPE) such as respirators and chemical-resistant gloves within six months to protect workers from exposure to 1-BP. The agency acknowledges that many workplaces already have stringent safety controls to reduce exposure to 1-BP, and these safety measures may reduce exposure concentration limits proposed in the rulemaking.

The proposed risk management rule is based on the EPA's August 2020 TSCA section 6 risk evaluation, as amended by the December 2022 final revised risk determination for 1-BP.

For more information, contact Cipoletti at tiffany@csema.org.

THREE THINGS TO KNOW ABOUT TIM WALZ, KAMALA HARRIS' PICK FOR VICE PRESIDENT

Democratic presidential nominee Kamala Harris made her highly anticipated selection of a running mate, tapping two-term



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Minnesota Governor Tim Walz. Gov. Walz is a veteran and previously served six terms in the U.S. House of Representatives. Here's what PRI members should know about the pick:

He led Minnesota in becoming a CARB state. Climate policy is a core issue for his administration. During his tenure as governor, Minnesota became a "CARB state," a state that has adopted California's vehicle emissions standards. This plan has been subject to litigation by the Minnesota Auto Dealers Association, which opposes Minnesota's clean cars plan and asserts that the state is not allowed to delegate its authority to CARB regulators in California.

Walz knows cars. Walz, a former public school teacher, once delivered an impromptu lesson in auto repair while on the campaign trail, in the process going viral online for his folksy, clear explanation of the problem and fix.

Walz is a Midwesterner. Walz was born in Nebraska and entered the public eye as representative of a significantly rural congressional district in southern Minnesota. His Midwestern appeal is seen by some as a counterweight to Harris's California roots—particularly as she attempts to win over rural and working-class voters who largely lean toward Donald Trump.

CALIFORNIA LEGISLATURE PASSES MANUFACTURING EQUIPMENT SALES TAX CREDIT LEGISLATION, SUPPORT STILL NEEDED

The California legislature passed PRI-supported legislation (AB 52), introduced by Assembly Member Tim Grayson

(D-Concord), which would provide businesses with a state tax credit equal to what they pay in local sales tax for qualified manufacturing equipment. The bill now goes to Governor Gavin Newsom for approval or veto.

Manufacturing is a vital industry in California, accounting for more than 10% of the state's GDP and employing nearly 8% of the state's workforce. The automotive aftermarket alone employs nearly 150,000 people and contributes more than \$40 billion to the state's economy. Thirty-eight states already offer sales-tax exemptions on manufacturing equipment and R&D. By failing to do the same, California risks losing businesses to these states, which can provide a more attractive business environment. In addition, providing incentives for manufacturing and R&D can help the state attract new businesses and create jobs.

The bill's progress to date shows the importance of SEMA and PRI's champions in statehouses nationwide. Assembly Member Grayson is a SEMA State Automotive Enthusiast Leadership Caucus member and was the 2019 winner of SEMA's Stephen B. McDonald Legislator of the Year award. In addition to being a lawmaker, Assembly Member Grayson, along with his wife Tammy, is also an enthusiast, with two classic Ford Mustangs in their collection.

For additional information, please contact Christian Robinson, PRI's senior director for state government affairs and grassroots, at christianr@sema.org.



INDUSTRY NEWS

INDUSTRY MOURNS LOSS OF HOT-RODDING PIONEER, SEMA HALL OF FAME ALEX XYDIAS, 102

Alex Xydias, the legendary founder of SO-CAL Speed Shop in Burbank, California, has passed away. He was 102.

Xydias was also instrumental in the beginning of the SEMA Show; as an editor and publisher of Hot Rod Industry News, he helped organize the High Performance & Custom Equipment Trade Show, held at Dodger Stadium in Los Angeles in January 1967, a show that SEMA became increasingly involved with the management of, and eventually took over.

LONGTIME IMS MEDIA CENTER MANAGER BILL YORK, 91

Bill York, who worked in and managed the media center at Indianapolis Motor Speedway (IMS) for more than 50 years, died August 20, near Nashville, Tennessee. He was 91.



Bill York

York began working in the IMS press room in 1958 as a statistician, eventually taking over management duties in the media center through 2008. He then served as a media center liaison into the mid-2010s.

LEGENDARY DIRT LATE MODEL RACER SCOTT BLOOMQUIST, 60

Veteran dirt late model racer Scott Bloomquist, known for his popular No. 0 dirt late models, has passed away following a plane crash, according to published reports. He was 60.

A native of Fort Dodge, Iowa, Bloomquist holds nine national championships and several special event titles, including winning the Dirt Late Model Dream eight times and the World 100 four times at Eldora Speedway in Rossburg, Ohio. He was elected to the National Dirt Late Model Hall of Fame in Walton, Kentucky, in 2002.

LACKS ENTERPRISES BUYS MAJORITY STAKE IN FORGELINE MOTORSPORTS

Forgeline Motorsports, the Dayton, Ohio-based wheel manufacturer, sold a majority stake of the company to Lacks Enterprises, a tier-one supplier to the automotive industry headquartered in Grand Rapids, Michigan.

The Schardt family will retain minority ownership of Forgeline and all operations will continue in Dayton with no disruptions to current customers or employees. Dave and Steve Schardt will continue as president and vice president of sales, while Sherri Schardt will continue in her administrative role.

HOLLEY PERFORMANCE BRANDS NAMES ALEX BUCCILLI SENIOR VICE PRESIDENT OF OPERATIONS AND SUPPLY CHAIN

Holley Performance Brands, located in Bowling Green, Kentucky, has named Alex Buccilli as its new senior vice president of operations and supply chain.

Buccilli, with more than 20 years of operations experience, will lead Holley's manufacturing, supply chain, and purchasing operations, while overseeing logistics, strategic sourcing, and distribution efforts. He is replacing former COO Brian Appelgate, who is retiring later this year.



Alex Buccilli

LUBRICATION SPECIALTIES HIRES NEW DIGITAL MARKETING MANAGER

Lubrication Specialties, the Mt. Gilead, Ohio-based manufacturer of Hot Shot's Secret, has expanded its marketing department with the appointment of Katherine Simmons as digital marketing manager. She reports directly to Senior Director of Marketing and Sales Bud Prenatt.

With a background in e-commerce website development, search engine

marketing, and business-to-business campaigns, Simmons will be tasked with leading digital strategy to grow the Hot Shot's Secret brand in multiple markets, including automotive, agriculture, fleet, and more.

TIMBREN INDUSTRIES OPENS NEW US WAREHOUSE

Timbren Industries, the suspension products supplier based in Ontario, Canada, has opened a new warehouse facility in Goshen, Indiana.

The location in Elkhart County, Indiana, will enhance Timbren's ability to serve its growing customer base, according to company sources, and will significantly reduce shipping times and improve overall service for customers throughout the United States. All manufacturing will continue to be based in Whitby, Ontario, Canada.

LUCAS OIL FOUNDER FORREST LUCAS HONORED WITH NHRA LIFETIME ACHIEVEMENT AWARD

Forrest Lucas, founder of Indianapolis, Indiana-based Lucas Oil, has been awarded the NHRA Lifetime Achievement Award. The San Dimas, California, sanctioning body presented Lucas with the award ahead of the NHRA US Nationals at Lucas Oil Indianapolis Raceway Park.

The award recognizes Lucas for his contributions to the automotive industry and motorsports, including support of the NHRA as title sponsor and "Official Oil" of multiple NHRA events, series, and facilities.

NASCAR REVEALS 2025 NATIONAL SERIES SCHEDULES, INCLUDING MEXICO CITY CUP SERIES RACE

NASCAR, the Daytona Beach, Florida-based sanctioning body, has revealed the schedules for the Cup Series, Xfinity Series, and CRAFTSMAN Truck Series.

New and returning venues include Bowman Gray Stadium in Winston-Salem,

North Carolina, for the season-opening exhibition, The Clash; Rockingham Speedway in Rockingham, North Carolina; Lime Rock Park in Lakeville, Connecticut; and Autódromo Hermanos Rodríguez in Mexico City, Mexico, which will host the first international Cup Series points race since 1958.

The Cup Series championship will begin with the 67th Daytona 500 on February 16, and conclude on November 2, at Phoenix Raceway in Avondale, Arizona.

DIRT MIDGET ASSOCIATION ALIGNS WITH XTREME OUTLAW MIDGET SERIES

The Vermont-based Dirt Midget Association has aligned with the Concord, North Carolina-based World Racing Group's Xtreme Outlaw Midget Series in an effort to support local midget racing in the Northeast.

Now known as the Xtreme Dirt Midget Association (XDMA), the group was founded in 2011 and operates bi-weekly from its home track, Bear Ridge Speedway in Bradford, Vermont. Drivers in the group utilize a package consisting of Ford Focus, Chevy Ecotec, or Quad 4 engines; Stealth, Spike, or Beast chassis; and Hoosier Racing Tires.

ROLEX MONTEREY MOTORSPORTS REUNION TO CELEBRATE FORMULA 1 ANNIVERSARY IN 2025

The Rolex Monterey Motorsports Reunion, held at WeatherTech Raceway Laguna Seca in Salinas, California, will celebrate the 75th anniversary of Formula 1 at its 2025 event.

Scheduled for August 13–16, 2025, next year's event will feature two dedicated historic F1 race groups: one with cars from 1966 and earlier, along with a second class made up of cars from 1966–1985.

For all the latest motorsports industry news, visit primag.com/industrynews.

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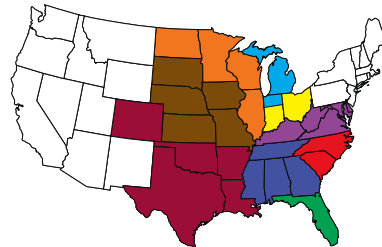
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