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Vol. 2 2023



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Moving and Building a Better World

It has been great to return to Mack Trucks. I grew to know this organization when I served as president of Mack North America a few years ago, and in my other roles serving Mack customers in service, aftermarket and finance.

There is only one Mack Trucks. Working for a company and brand like Mack means that when you wake up in the morning you know what you're going to do and why, and what it means for your customers. The experience and the culture we've developed over our long history is incredibly valuable and so distinct. This history and culture are motivating forces for our employees and dealers as we look to the future.

Mack's purpose is to move and build a better world, and we take that purpose very seriously. We recognize that we have a number of important stakeholders. Beyond our obligations to our customers and dealers, we have a very real obligation to society as a whole: the products and services we provide are vital to the flow of goods, construction and development, and vital services in communities on several continents.

I have very high expectations for Mack and its future. The phrase you hear across the company regarding our products and services is "application excellence." That means we know how to build and support the exact truck you need for your business, so you can succeed. We offer purpose-built products and services that are the end products of many inputs and investments. We realize that you need solutions that are as purpose-built as our trucks, to enable peak performance for your Mack and improve the overall productivity of your business. Modern trucking is intense and our organization brings technologies and resources together to reduce that challenge and help your business excel. This remains our goal.

All of this is reflected in recent developments. Our electromobility efforts so far have produced the LR Electric refuse truck and MD Electric medium-duty trucks. The LR Electric has been in production for two years in the challenging refuse market and is making a name for itself. The MD Electric began production in the fall of 2023 and is already generating real demand for its performance and its value proposition. Electric vehicles are going to grow in importance for our customers and as we seek to reduce our carbon impact on the planet. In this issue of Bulldog, you'll read about our recent introduction of Mack Electrifi Subscription and how this innovation removes much of the friction from the adoption of EV trucks.

Also in this issue, you'll read about two other exciting things Mack is deeply involved with that leverage our technology leadership. The Mack Connect customer portal introduced this fall allows customers to access and use the rich data generated by their trucks to improve operations, maintenance, productivity and total cost of ownership. And Mack Defense, which is growing in importance to our armed forces through the incredible trucks it has developed, has the ability to deliver to the commercial market technology developed for the military. Mack has been a force in military trucks since World War I and this ability to benefit both commercial and military is part of our DNA.

A commitment to sustainability is an important part of Mack's broader purpose. Recently, the U.S. Department of Energy recognized the Volvo Group's U.S. manufacturing operations – including Mack's Lehigh Valley Operations and the Hagerstown Powertrain Operations – for impressive energy use reductions. Since 2014, energy savings for Volvo Group in the U.S. have been close to 26%, which equates to approximately \$20 million in energy cost savings and a reduction of approximately 43,000 metric tons of CO2 emissions. And compared to 2009, the Volvo Group's U.S. manufacturing organization has achieved energy savings of more than 52%.

Mack Trucks' focus always remains on the customer and ensuring that everything we do meets the customer's needs. Proof of that is that Mack was named #1 in customer satisfaction in 2023 based on a survey of North American Class 8 truck owners. This is a good position to have and Mack is going to keep it.

Thank you for your support of Mack.

Stephen Roy, President, Mack Trucks



UAW Members Ratify Agreement with Mack Trucks

Mack Trucks on November 15 announced members of the United Auto Workers union ratified a new five-year collective bargaining agreement with the company covering about 3,900 employees at facilities in Pennsylvania, Maryland and Florida.

"The new agreement guarantees significant wage growth and delivers excellent benefits for our employees and their families," said Mack President Stephen Roy. "At the same time, it will safeguard our competitiveness and allow us to continue making the necessary investments in our people, plants and products." ■

Mack Trucks Announces Continued Sponsorship of the ATA Share the Road and Workforce Heroes Programs

Mack Trucks will again sponsor the American Trucking Associations (ATA) Share the Road and Workforce Heroes programs in 2024. Mack has sponsored Share the Road for 23 years and has sponsored the Workforce Heroes programs since its inception in 2018.

Mack made the announcement during the ATA Management Conference and Exhibition (MC&E), Oct. 14 to 17, at the Austin Convention Center, Austin, Texas.

"Mack Trucks is committed to safety, so it's a logical partnership for us to sponsor the ATA Share the Road program," said Jonathan Randall, president of Mack Trucks North America. "Mack continues to invest in technologies that help improve safety, and it is our intention that through this program, more of the general public will learn how to safely drive on our nation's highways with heavy-duty Class 8 vehicles. And Mack recognizes the commitment veterans made in serving our country, so we are very excited to again sponsor the Workforce Heroes program, which helps veterans learn about the many jobs in the trucking industry."

Two Mack Anthem® 70-inch Stand Up sleeper models that are equipped with all of the latest safety technologies and donated by Mack are used in both programs. The purpose of Share the Road is to educate motorists how to safely drive on our nation's highways with heavy-duty vehicles. The Share the Road professional drivers rank among the best drivers in the trucking industry with many of them achieving one million or more accident-free miles. ■

Mack's Roanoke Valley Operations (RVO) Now Certified for Supporting Renewable Energy Resources

Roanoke Valley Operations (RVO) in Virginia, where all Mack® medium-duty vehicles are assembled, is now certified and participating in Appalachian Power Company's 100% Renewable Wind-Water-Sunlight (WWS) Service.

This means that RVO purchases 100% of its renewable energy with zero CO2 emissions from Appalachian Power, meeting the needs of Mack's and RVO's commitment to sustainability and environmental stewardship.

"This certification is very important to Mack Trucks and RVO specifically because it allows us to act on our public commitment to sustainability," said Antonio Servidoni, vice president at RVO. "Mack not only offers electric vehicles, such as the Mack® MD Electric that will be assembled here at RVO later this year, but also it is committed to working toward a sustainable future in our facilities."

Appalachian Power's WWS program allows customers the ability to consume renewable power around the clock with 100% of the energy generated by the

company's renewable power generators. The combination of wind, hydroelectric power and solar means that a customer's load is being met with renewable resources anytime – day or night. Appalachian Power has 338 megawatts (MW) of renewable resources available to its Virginia customers through the WWS program, which is enough to power 75,000 homes.

"RVO is among Appalachian Power's key participants in the WWS program, said Aaron Walker, Appalachian Power president and CEO. "RVO's emphasis placed on sustainability and environmental stewardship is industry-leading, and we are pleased to be able to offer this option for business and industrial customers seeking to power their operations with 100% renewable energy."

Mack invested \$13 million to establish RVO for the production of the Mack MD Series, which went into production in September 2020. The Mack MD Electric, introduced in March 2023, will also be produced at RVO. ■



Roanoke Valley Operations (RVO) in Virginia, where all Mack Trucks medium-duty vehicles are assembled, is now certified and participating in Appalachian Power Company's 100% Renewable Wind-Water-Sunlight (WWS) Service. Pictured left to right is Donald P. Pole, Appalachian Power key account manager, Antonio Servidoni, vice president at RVO, and Tim Fretwell, RVO facilities manager.

Mack Trucks Adds Two New Full-Service EV Infrastructure Partners to its Turnkey Solutions Program

Mack Trucks has expanded its comprehensive Turnkey Solutions program for Mack® battery-electric vehicle (BEV) customers with the addition of two new full-service partners, InCharge Energy and Blink Charging.

These partnerships are two of four that Mack Trucks currently has with charging infrastructure development companies. The Turnkey Solutions program is an end-to-end fleet management service for all aspects of developing infrastructure, including the charging hardware, software, site design, obtaining permits, installation, utility coordination and charging equipment maintenance. Mack has two electric offerings – the Mack LR Electric and the Mack MD Electric.

"Mack Trucks is focused on simplifying the transition to BEV for our customers to help increase the adoption rate of sustainable transportation," said Jonathan Randall, president of Mack Trucks North America. "We have our own team dedicated to e-mobility solutions, and through the Turnkey Solutions program, we've established a holistic program to support the charging needs of our customers." ■



Volvo Group to Acquire Battery Manufacturer Proterra

Volvo Group has been selected as the winning bidder to acquire electric vehicle and components manufacturer Proterra's powered business unit. The \$210 million deal is set to close in early 2024, pending approval by a U.S. bankruptcy court.

The assets to be acquired include a development center for battery modules and packs in California and an assembly facility in South Carolina. Volvo Group says the acquisition will "complement the current, and accelerate its future, battery-electric road map."

Proterra designs and manufactures electric transit vehicles, as well as battery systems and charging solutions for heavy-duty vehicles and equipment. The company filed for Chapter 11 bankruptcy in early August. ■



David Philipps (left) and Mehul Patel (right) study testing simulations.

Testing for Success

Intense testing means excellence and peak customer experience — and tough trucks

Story by Amy Materson, Photos by Justin Kase Conder

If you ask Govi Kannan about Mack Trucks' testing program, he might ask you what you think the testing process would be like. Kannan, Senior Vice President for Global Products for Mack, breaks testing down into four critical aspects – product experience, reliability, durability and features.

Kannan says testing drives the four parts of the product experience: visual, tactile, sound and ergonomic.

"When you see a Mack truck in front of you, what comes to mind?" Kannan asks. "Big. Strong. Confident. It creates a visual impact. Next you want to touch it. You want to open the door and get in – to feel Mack."

Reliability plays the next part in the testing process. Mack wants to make certain the customer experience results in maximized uptime. Total cost of ownership is key, says Kannan. This means using virtual testing to build confidence the truck will meet the customers' needs through simulation, as well as field testing, which uses customer environments and daily operation to continue to build upon confidence in reliability.

Mack trucks are known for their durability and rigorous testing ensures the product outlasts the customers' expectations, which Kannan says is the third aspect of testing. Life cycle focused, durability testing includes

product safety, shaker and cycle testing for components, as well as Accelerated Endurance Testing, which is testing the complete truck through many cycles on a track designed to inflict incredible physical stresses on the truck.

Finally, testing influences features the end-user experiences regularly. "Here, we want to make sure that customer experience related to Mack's list of features meets or exceeds the customers' expectations," Kannan says. The features impact customer experiences such as ingress and egress, comfort, drivability, maintainability, suitability for body work and fuel economy. The features can be tested



Jonathan Abernathy monitors data from a shaker test rig.



Todd Woods pilots a Mack® Granite® test truck on the accelerated endurance track in Greensboro.

in internal or external clinics feature by feature or at the truck level, and simulation testing provides a simulated customer environment.

Testing plays a large role in delivering a distinct experience to each customer. Knowing what kind of experience Mack Trucks has determined to provide to the end user determines what they test on each product and how they go about it.

The journey begins in Greensboro, North Carolina, where the Complete Vehicle team provides engineering, research, testing, support, results and analysis using next-generation technology and knowledge. The

engineers on the team develop and perform tests on every product in the Mack family.

In testing, Kannan says, the team builds more than the product. “Here, we build confidence,” he says. “We build the confidence that it works, and it works for the customer.”

Ensuring endurance

If there’s anyone on the Mack Trucks team who enjoys their job, it’s the 14 engineers who work in Durability and Reliability (D&R) Testing in the Complete Vehicle Team. There are many critical features tested, such as corrosion resistance. But there are also durability and reliability tests that speak to the heart

and soul of the Mack brand.

Under group manager Landon Craven, the testing is designed to always produce usable data using the best available testing technology. But they also get to do what Craven calls the “fun part of the job” – carefully applying immense stresses repeatedly for extended periods to see what a Mack truck can really handle. Frequently, it’s more than a typical truck would see in its lifetime.

What type of tests does the team perform? In the D&R group alone, test types include accelerated endurance tests; data acquisition; hydraulic rig and bench; 7-acutator shaker rig; torque tension; temperature; cyclical components such as door slams, luggage lids, fairing and cabinet cycling; electrodynamic shaker; passive safety such as barrier crash, seat pulls, side impact and roof crush; corrosion and sun simulation; full vehicle durability simulation and correlation; and finite element analysis.

Craven says there are several approaches his team can take at the start of the testing process. For example, if it’s a federally regulated test, they’ll follow well-defined mandated guidelines. If the test is one they perform frequently, the testing engineer will follow established protocol for that test. If it’s something unusual or new then test development comes into play, such as for a modified component, or a new test request. They’ll work closely with the product engineers and sometimes customers to determine what exactly needs to be tested and what the circumstances of the test need to be to gain meaningful results.

“If we’re making a change to a component or product – to make something better or more efficient – it’s developing a new test,” Craven says. “We’ll ask what we’re going to



Jonathan Abernathy (left) and Evan Kimbro (right) control a chassis shaker test. The hydraulic actuators bolted to the frame subject it to repeated violent stresses.

measure, how we're going to measure it, what are the requirements and perform the prep work to set up the test."

To set up a test, the test engineer may need to instrument a truck to collect data points for analysis. Craven says they use many types of measuring devices. Accelerometers are used to measure acceleration in one axis, or all the primary axis on the vehicle, to define the vibration profiles of components, calculate relative damage, develop test rig signals and perform simulation model correlation. The team uses strain gauges to measure the strain across the surface of a particular material, usually metal. Strain represents the "stretch" of any given material when a load is applied, and the data is used to quantify the strength of the material and the material yield, correlate to models and then gauge if a component can withstand required loads.

The team also uses a specially designed transducer, which measures the load through a particular component. These are made by typically applying multiple strain gauges or integrating load transducer to an existing component. These sensors are calibrated by applying a known force and measuring the output strain/transducer load, then used to develop a strain-to-load curve. They can also install the transducers on the truck and run it on the test track. This allows the team to know the load being experienced by a particular component and use that as an input in the component design or as a signal input for a rig test. These are made with truck components, so a Mack transducer is made using Mack-specific parts. Most of these are built

"We try to be the voice of the customer. We want to see the truck through their eyes as we're testing it."

**Michael Kerley, Group Manager,
Driver and Vehicle Productivity Testing**

in-house by the Testing Technology group.

"When it comes to rig testing and bench testing, we have more specialized equipment," Craven explains. Many of their tests are conducted using hydraulic actuators configured to reproduce the inputs measured on their test track. For a rig test, for example, the team will measure fatigue or overall strength of a particular part or component. The actuators are electronically controlled hydraulic or pistons that thrust precisely delivered impacts into the components. The impacts simulate the stress of real-world operations, amped up to extreme levels and repeated on a much more rapid cycle than found in the real world. These actuators can deliver anywhere from 2,000 to 50,000 pounds of impact hundreds of times a minute according to a carefully described test regime. Some of the components tested this way include axles, suspensions, chassis components and even

interior components such as doors and trim panels.

The team also has three shaker rigs in Greensboro, as well as an electrodynamic shaker for high vibration testing. The shaker rigs have powerful hydraulic actuators and the engineers typically bolt a chassis or even chassis and cab to the rig, which tortures the components through six axis, frequently for weeks at a time. A climate chamber handles humidity and temperature cycle testing.

For ergonomic manual or ergonomic cyclical testing, the team has a robotic arm with five degrees of freedom – motion capabilities in multiple directions – to execute these repetitive tests. This includes tests such as opening exterior doors, door slams, pressing buttons and operating interior components.

No matter the product or the equipment they're using, the team tests to the requirement, and after that they test to failure -- that is, until the component fails. Craven says it's often surprising just how much it takes to break a Mack truck.

Creature comforts

While Craven and his team are trying to "break the truck," his colleague Michael Kerley is working to ensure satisfactory results in productivity and efficiency measures. Kerley, the group manager for Driver and Vehicle Productivity Testing, leads a team of engineers who cover an array of test types. Core test types for this group are noise, vibration and harshness (NVH); braking performance; vehicle dynamics; advanced driver assistance systems; ride comfort; cooling

performance; heat management; fuel economy and aerodynamics; and climate performance. Kerley's group strives not only to ensure they're meeting the demands of what they set out to do in each project, but also represent the Mack customer in terms of the data and the analysis.

"We try to be the voice of the customer within our department," he says. "We want to see the truck through their eyes as we're testing it. That's part of how we plan and organize our tests, how we develop our test codes to ensure we are meeting that customer need, representing that application and then really collecting the data to prove the trucks are going to be a useful tool for them in each of their applications."

To achieve this, the Driver and Vehicle Productivity Testing team looks at all the different areas the customer will experience on the truck – what they see, the way the truck handles, the comfort inside the truck, the noise the customer hears, the vibration they feel and more.

Much of the work the team does is made up of in-vehicle type tests – on road or at a proving grounds or on the test track in Greensboro. However, they do use simulation to evaluate fuel efficiency and during early development testing.

The team will test the same product at different stages – a process Kerley refers to as "multi-milestone." Their early development testing and early-stage prototype testing allows feedback into the development loop for engineering. Most of the team's heavy lifting, so to speak, starts in the middle and picks up towards the tail end of development. The team uses the Greensboro track, as well as several other facilities around the country. Depending upon their needs, they have runways (for things like coast down tests), oval tracks and dynamic proving grounds available. The test tracks offer opportunities for vocational and highway events.

"We want to make sure our data we're collecting is realistic to what the customer is going to see," Kerley says. "We also make sure that we're covering the extremes for the application."

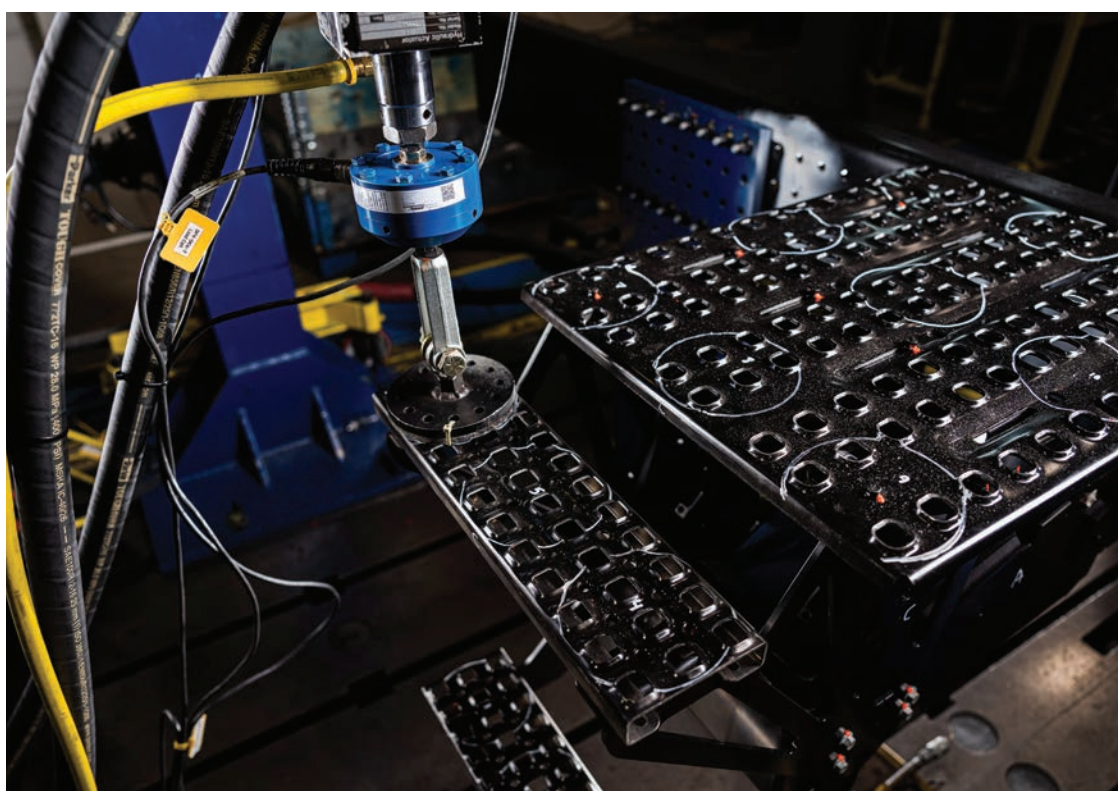
To capture the data, Kerley's engineering team may place as many as 200 sensors on the test vehicle and have a logging device that allows them to capture the data once they send the truck out on the track. Flowmeters and pressure sensors enable them to capture data for their team to analyze and review. The testing team has an entire group dedicated to their equipment. Kerley says this team manages their existing equipment, incorporates new technology into the tests and supports data collection.

"Trucks are smart, and instrumentation is sophisticated," Kerley says. "This endless amount of data that we collect helps us really understand the nuances of our product and really dive deeper into the internal operations and the interconnections between different systems. In previous generations we weren't able to get down to the same level of detail. Feeding that information and having that understanding drives innovation in our products."

Kerley notes that the testing process itself allows for innovation thanks to rapid changes in technology, particularly with respect to power-train performance and components with software-driven aspects such as active safety systems.



Just another day at work for Mack's product testing team.



A piston replicates the stresses of years of drivers climbing in and out of a cab.



The team has backgrounds in different test areas and are divided by area of expertise, such as fuel efficiency, aerodynamics, vehicle dynamics; and the test engineers plan, develop and execute the test and deliver the results. They work together with trained technicians and mechanics to instrument the trucks, place the sensors correctly and collect the right data.

“We’re always trying to find ways to advance our technology,” Kerley says. “We’re finding ways to automate some of the work we do to make it repeatable and efficient. We’re looking at ways to automate some analysis work to make that a faster process.”

Next steps

The tests are conducted and data is collected. What happens then?

There’s a process in place, Craven explains, regardless if the results were considered positive or negative. The team analyzes the data, writes a report and includes their conclusions and documents the test procedure. If the test has a positive result, the team sends the project on to the next phase, whether it’s an app release or a production start, depending upon where they are in a particular project.

In the event they achieve an unexpected result, the loop opens for feedback and for work to begin.

“We’ll work closely with our vehicle engineering counterparts, collect extra data and

perhaps work with a customer to collect input or do an ergonomic study,” Craven says.

“Typically, there will be a virtual simulation. Then we’ll have a retest of the component to make sure it passes the requirements.”

Craven says he compares his team’s standards to customers’ concerns in the field and works to ensure there are no gaps. The focus is repeatable processes and preemptively finding and addressing issues.

For Craven, that’s a key component of success. “Success is to do quality testing and provide quality results. We want to ensure the products we’re putting in the customers’ hands are going to meet their requirements. That’s our end goal.”

Kerley echoes a similar sentiment, saying his definition of success is a product that not only meets requirements but is also reliable for the end user. “It’s knowing we’ve done everything we can to provide a vehicle that will be a useful tool for our customers.”

Above and beyond

Although the Complete Vehicle team has a laser focus on testing, they’re quick to point out it’s a collective effort to execute any given test, noting it requires the participation of up to seven additional groups to bring a test to fruition. Whether it’s technicians, product build support, purchasing, additional engineers or prototype parts, many people touch each test. It’s a critical part of being involved in a large organization that runs efficiently.

The Mack brand is synonymous with longevity and durability. Kannan says that it’s part of Mack’s commitment, and part of what it stands for. He says with respect to Mack reliability, it’s not about the first or the 100th or even the 100,000th mile. It’s about the 500,000th mile and beyond. It’s about testing for the kind of reliability that will work and will work all the time. It’s about continuing to build a steel cab when others settle for aluminum. It’s about using offset steps instead of ladder-type steps for driver safety.

With respect to safety, there are regulatory requirements to which all manufacturers must adhere; however, Mack’s values go beyond the bare minimum and internal standards are more stringent than the actual requirement, says Craven. In addition to Mack’s shaker and accelerated endurance testing, the passive safety work includes side impact testing similar to European BOF10 and ECE R29 regulations.

Mack also uses a technology called digital image correlation, which means test engineers can paint a surface – such as the glass on a cab – and then measure the strains in the glass surface.

Extreme product testing is “in our DNA,” Kannan says. “Maybe it’s exhibited, maybe it’s presented, monitored and managed over the generations in a different way. So, the way we do things might change, but what we stand for will continue to be what it is.”

And that is a tough, reliable and safe truck that passes the test. ■

Mack Trucks Introduces ElectriFi Subscription Exclusively for Mack® MD Electric Vehicles



While many companies are interested in investigating the benefits of electrifying their fleet there are frequently hurdles that need to be overcome. The large initial investment required to adopt battery-electric vehicles, along with additional infrastructure costs and the learning curve associated with operating a new type of vehicle, is often enough to deter many interested businesses. Mack Trucks is working to change that.

In an effort to help customers more easily adopt battery-electric vehicle (BEV) technology into their fleets, Mack Trucks is now offering ElectriFi Subscription, a Mack Financial Services usage-based leasing option exclusive to new Mack® MD Electric models.

ElectriFi Subscription allows customers to pay as they go for miles driven with chassis and body, charging, applicable incentives, physical damage insurance and maintenance costs for the term of the agreement, all bundled into a single monthly payment. This reduces the customer's upfront investment while lowering their long-term risk, as it allows the option to walk away at the end of the term.

"Mack Trucks is a leader in electrification, and we remain committed to ensuring customers have reliable, durable electric vehicles and the support necessary to operate them," said Jonathan Randall, president of Mack Trucks North America. "Together with Mack Financial Solutions, we developed this unique program to assist in the deployment of BEVs and provide customers peace of mind. Customers can run electric trucks knowing that Mack and Mack Financial Solutions are standing behind them and the product."

The ElectriFi Subscription also comes with access to Mack's suite of Uptime services, including telematics and Mack OneCall™, Mack's 24/7 roadside service and support through technicians at the Mack Uptime Center. Not only does this provide companies with Mack's industry-leading uptime support, but it also provides assistance to companies learning to operate and maintain BEVs.

For those companies that have already tested the waters and are ready to commit further to electrification, Mack has additional options. Along with the ElectriFi Subscription option, Mack Financial Services also offers ElectriFi Infrastructure and ElectriFi Lease.

ElectriFi Infrastructure is a turnkey solution that's available for all purchases or leases. Mack and its third-party partners will handle the charging station design, installation, construction, hardware and software. All-inclusive financing is available with this option, up to a 60-month loan. Mack Trucks and Mack Financial Services can also advise on incentives for infrastructure.

ElectriFi Lease enables customers to add BEVs into their fleets with reduced upfront investment. This offer has full lifecycle financing options and renewable five-year terms. Mack's Route Support Services team will help customers analyze existing routes, infrastructure upgrades and seamless integration. Customers also have access to Mack telematics through the Mack Ultra Service Contract, the standard five-year comprehensive bumper-to-bumper service contract for the Mack MD Electric and the Mack LR Electric refuse model.

"Mack and Mack Financial Services have given customers several optimized financing options that will help support their businesses," said George Fotopoulos, Mack vice president, e-mobility business unit leader. "ElectriFi Subscription, the other financing options and the Mack Ultra Service Contract were designed to help remove any hesitancy about financing, service and support that customers might experience as they electrify their fleets." ■



TECHNOLOGY



Mack® Connect Empowers Fleet Managers

Mack® Trucks' latest technology solution is Mack Connect, a comprehensive fleet management portal that enables customers to digitally access information about their Mack-powered trucks quickly and easily. The all-new portal gathers critical data about a customer's trucks, services and specific applications and transforms that information into actionable intelligence to drive improvements in fuel

efficiency, safety and productivity.

The Mack Connect toolbox includes data about asset location, idle time, traffic information, fuel efficiency, safety performance and vehicle speed. Customers can access the status of their Mack® trucks through a 4G Telematics Gateway, which is factory-installed at Lehigh Valley Operations in Macungie, Pennsylvania, where all Class 8

Mack vehicles are assembled.

The portal also interacts with the Mack Integrated Uptime services so that customers can easily manage any fault events that occur and gain visibility of over-the-air updates when available. Mack Connect, along with the Integrated Uptime package, is standard on all new Model Year 2025 Mack trucks equipped with Mack MP® engines for two years.

Two heavy-duty Mack Truck customers with different operating profiles that have been piloting Mack Connect report that the portal delivers far greater management visibility into their operations and powers decision-making in real time, boosting both fleet efficiency and safety performance.

Seeing deep and wide

Hopedale, MA-based Braun’s Express, which provides freight-hauling and logistics services in the Northeast, MidAtlantic, and Midwest states, has been piloting Mack Connect on 63 of its Mack Class 8 tractors since June. The fleet fields about 165 power units, and the majority, 140 or so, are Mack tractors.

Stephen Normandin, vice president of strategy, says the portal is providing Braun’s with “visibility we haven’t been able to get from third-party telematics providers. We’re able to get instant visibility across our fleet and then use that to make sure we’re putting consistent settings in across our fleet. We haven’t had that before. Now, we’re getting information about seatbelt use and other things that we couldn’t get elsewhere.”

According to Maddison Vinciguerra, Braun’s fleet administrator, the portal is “pretty much self-explanatory and easy to use. If I need a Mack Connect support specialist, they’ve gotten back to me efficiently, and in a timely manner. I work a lot with our safety department, where we use the portal for over-the-air updates, such as to adjust speed settings. Being able to do that, and not having to send trucks to a dealer is just so easy.”

The digital portal’s interactive map is always up to date, she continues, “so if a driver calls and they’re in an unknown area, or they haven’t been there previously, I like that the map shows bridges and bridge heights, and it shows where they can fuel in our network so we can easily direct them there.”

Normandin says that only a portion of the fleet is on the portal right now. “We’re definitely looking forward to when we can get our whole fleet onto the system; then it can be a more powerful tool across our organization.”

Vinciguerra advises that the portal’s safety advantage comes from being “able see the inconsistencies of the fleet, like the drivers who speed or who take hard turns or whatever the case may be. We can see that now with Mack Connect and change engine parameter settings when needed as corrective action.”

“We’re definitely looking forward to when we can get our whole fleet onto the system; then it can be a more powerful tool across our organization.”

Stephen Normandin,
Braun’s Express,
VP of Strategy

Level by level

Greensboro N.C.-based Hilco Transport Inc. is a diversified carrier with specialized divisions dedicated to municipal waste haulage, dump transport, and ammonia, liquid, petroleum, and propane transport.

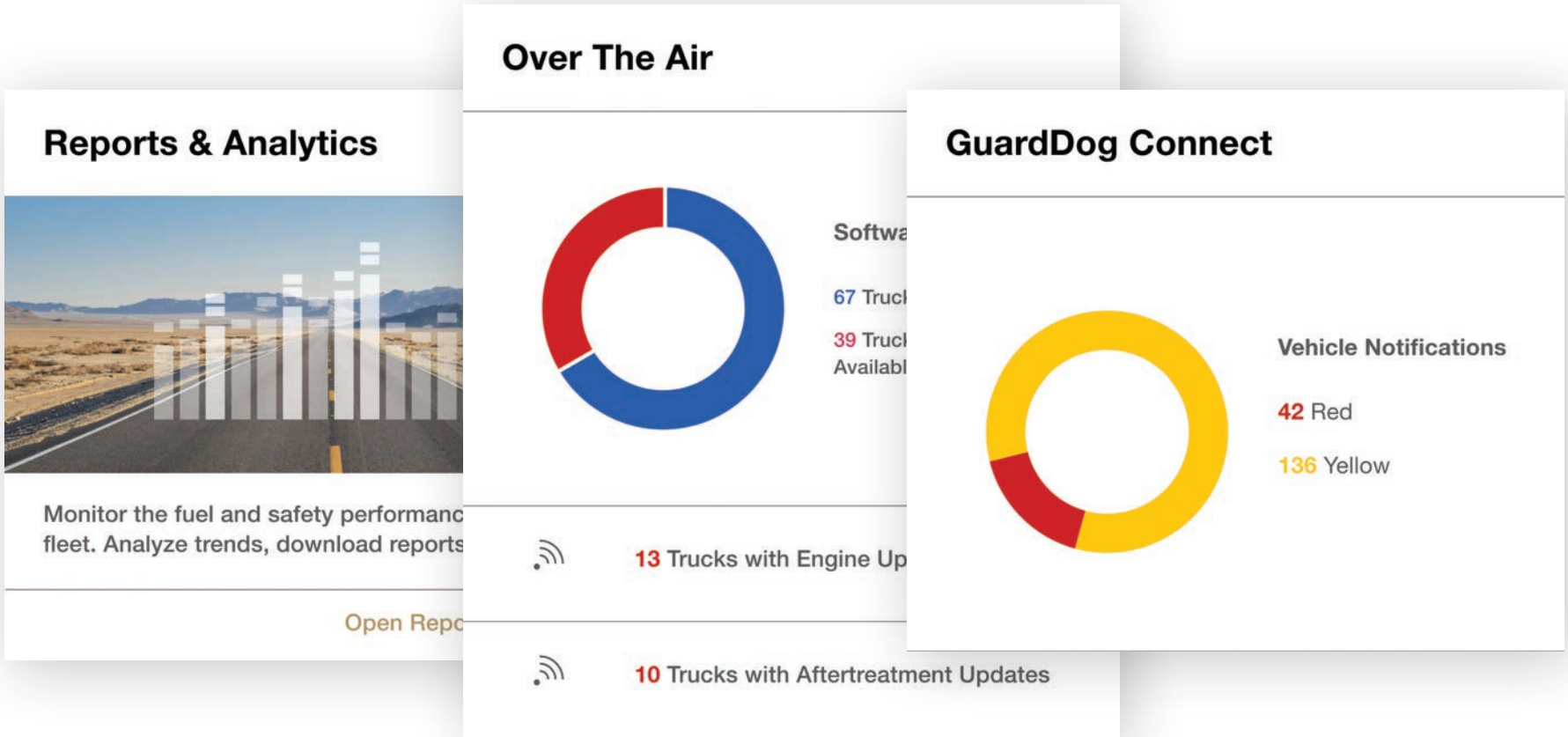
Hilco has 500 power units, with Mack trucks making up half of those with more on order, and almost 200 owner-operators, according to

Director of Maintenance Mike Laughead. Laughead describes the fleet’s piloting of the Mack Connect customer portal as “so far, so good. We really like it. There are three of us using it right now. The map and the reporting capabilities are killer features.” He says throughout Hilco, the portal is being used at different levels. “I’m a data-driven kind of person. At my level, I’m able to see the reporting side of it. We are impressed with the system and it helps managers keep tabs on operations.”

“Then at the other level, the shop manager or shop level, their variables can be addressed, like when a driver calls in and says, ‘Hey, I got a light on my dash.’ Now they have somewhere they can go into and look at it,” he continues. Before Mack Connect, he says “it was kind of like, ‘Well, if you click the button and go through the dash, you don’t know what the codes are. So, this is a whole lot more efficient for us. Now, we can just click on a unit and see if it’s had a history of those codes.”

Hilco so far has over 200 Mack trucks covered by the new system. Laughead says the loading of each truck’s service history was handled by Mack. He also points out that the portal makes it easy to add users.

Laughead says one of Mack Connect’s top features is the map as it’s “probably the number-one item for reports and analytics at my level.” In general, he appreciates the portal’s ability to deliver information in real time so that Hilco can act quickly. Before Mack Connect, the information he requested came from corporate monthly reports, but “now I can just go and pull it. That’s a huge benefit, especially for data like idling time or PTO usage, that can be acted on immediately. Having that capability is key for us to better understand how everything is operating.” ■



Mack Continues to Demonstrate Commitment to Driver Comfort

Electric auxiliary power unit is now a factory-installed option on the 70-inch Mack Anthem®

Story by Denise Rondini

When it comes to truck driver comfort, Mack Trucks has made a long-term and intense commitment that is demonstrated by its spacious cabs, use of premium materials, exclusive seats, additional storage and other sleeper amenities.

“We understand that in the long haul segment the truck is actually the driver’s home – they usually spend more nights in the truck than in their own house, so we are continuously working to make our trucks as comfortable as they can be and to add all possible creature comforts that will make life on the road easier,” says Fernando Couceiro, Mack’s vice president of highway products.

Mack recently added one more item to its suite of driver comfort features — a factory-installed electric Auxiliary Power Unit (eAPU) for its 70-inch Mack Anthem sleeper model.

Mack chose the Phillips & Temro IdleFree 5000 eAPU as its offering because its high-performing electric cooling capacity provides drivers with hours of uninterrupted rest time. “This is very important to drivers when it is hot and they are spending the night in their cabs,” Couceiro says.

The unit can keep the temperature in the cab at about 73°F for seven to nine hours when outdoor temperatures are in the 90°F-to-95°F range. It features a three-speed evaporator fan to direct the airflow to the sleeper without duct work. This means the unit is quieter than diesel-powered APUs. It also runs on its own batteries, so there is no risk that it will pull energy from the truck’s main batteries.

The IdleFree unit keeps drivers cool while operating both quietly and free from vibration, an improvement over idling the truck’s main engine, which tends to vibrate during operation. The eAPU also avoids restrictions on truck idling, which means the system can be used in more circumstances than diesel APUs.

Data indicates drivers increasingly have eAPUs on their wish lists of truck features. A recent CCJ survey of more than 800 company drivers found that 56% of the surveyed drivers said that APUs were an important truck feature. Only special seats

with comfort features, at 67%, scored higher. Even having a late model truck or a larger sleeper scored lower than the eAPU.

While driver comfort was the main reason for adding the eAPU, Couceiro says there are other benefits. With many driver comfort items, it can be difficult to place a monetary value on the benefit of the technology. “If your drivers have a better seat, they will be happier, but how do you translate that into a dollar amount?” Couceiro asks.

With eAPUs the calculation is easy. Couceiro gave the following example using these assumptions:

- A truck runs 260 days of the year.
- For half of those days — 130 — temperatures are high enough that the driver needs air conditioning over the night.
- The eAPU will run for 7 hours.
- An idling diesel engine consumes 5 to 6 gallons in a 7-hour period.
- A gallon of diesel costs \$4.50.

Based on those assumptions, the truck would use 5.5 gallons of diesel while idling and cost the fleet approximately \$25 per truck per night. “If you multiply that by 130 nights, fleets will see a savings of \$3,250 per truck per year,” Couceiro explains. “If a fleet keeps its trucks for five years, the fuel savings over the life of the vehicle is \$16,250.”

The financial benefit of the eAPU does not stop there. Couceiro says that a truck equipped with an eAPU may be worth more on the used truck market.

The final benefit of the eAPU is that it produces fewer emissions, which is also very important to the environment. Couceiro says the 5.5 gallons of fuel saved over the 7-hour period a driver is using the eAPU rather than idling the engine, can result in up to 10% less tailpipe emissions.

The availability of the factory-installed eAPU is just one more way Mack is showing drivers it cares about their comfort and the environment. ■






Mack Connect

Fleet Performance Portal


GuardDog Connect



Vehicle Notifications

- 42 Red
- 136 Yellow

Over The Air




Software Updates

- 67 Trucks Fully Updated
- 39 Trucks with Updates Available

13 Trucks with Engine Updates

10 Trucks with Aftertreatment Updates

Reports & Analytics



Monitor the fuel and safety performance of your fleet. Analyze trends, download reports and more.

[Open Reports & Analytics](#)



A unified dashboard for simplifying your operations and driving profitability.

Available for Mack Class 8 vehicle owners, Mack Connect allows owners to track and manage data within a single hub for every Mack powered vehicle in their fleet.



Mack Anthem[®] powers third generation of Burns Motor Freight

Story by Carolyn Mason, Photos by Kirk Zutell

“There’s only one way into the little town of Marlinton, West Virginia, nestled deep in the Allegheny Mountains, and that’s going straight up and then back down again,” says John Burns, president of Burns Motor Freight.

Forest green Mack[®] trucks have been running up and down the mountainous terrain and throughout West Virginia since 1949. That’s the year John’s grandfather Fred C. Burns bought his first truck, a 1948 Mack Model LJ for \$10,000. When John’s granddad applied for a loan, the bank wasn’t interested until a board member vouched for him, saying, “This old boy will work.” He didn’t stop working or buying Mack trucks until he passed away in 2007 and the Mack LJ is still parked at the company headquarters.

In 2024, the company will celebrate 75 continuous years of a diverse and successful trucking business. The family-owned company is currently led by the third generation of Burns children, continuing the legacy of their grandfather and fathers, Fred Jr., and Larry Burns.

Larry Burns’ son, Mike, is now vice president of Burns Motor Freight and says his

grandfather’s epic work ethic as well as dedication to innovation serve as inspiration to the entire team. Current leadership also includes Mike’s cousins John (president) and Doug (director of safety and recruiting). The cousins have a deep respect for the advice and industry knowledge of their dads, Fred Jr. and Larry Burns, as they carry the torch into the new era.

The Mack family connection

While things have changed since Fred Sr. hauled loads with his beloved Mack LJ as a one-man operation, and his wife Lucille did the bookkeeping and dispatch, the third generation continues the deep relationship between Mack Trucks and Burns Motor Freight.

“Granddad and Mack Trucks believed in the same rugged, dependable, hardworking philosophy. And Mack’s tagline, ‘Born Ready,’ sums up both the man and the truck manufacturer,” Mike says.

Today, they have 60 employees, including Kenny Hall, terminal manager, who has been with the company for 48 years. “It’s hard to

find dedicated employees like that and when you do, you find a way to hold on to them,” says Mike. They operate 100% Mack Anthem[®] models to haul building products, steel, lumber, wood residue and whiskey barrel components throughout West Virginia and the East Coast.

Mike says they rely on their equipment’s dependability, safety, fuel efficiency and technology. They operate 36 Anthem day cabs with MP[®]8HE engines and 32 Anthem 70-inch sleepers with MP[®]8HE engines — all with *mDRIVE*[™]. The fleet includes more than 200 open top, curtain side, flatbed and log trailers and they have five new Anthems on order. Mike says he depends on the Mack equipment but also on Mack’s commitment to standing behind their warranties and beyond. “It means a lot that Mack is willing to work with us when the truck is out of warranty,” he says.

Scott Blevins, president of Prestonsburg, Kentucky-based Worldwide Equipment, says the seven-decade-long relationship between Burns Motor Freight and the dealership is still going strong. “I believe their family and



John Burns with his grandfather's first Mack truck.

customer-focused culture has continued throughout the generations. They are a such a good family, and it shows in how they take care of their customers and employees. When you see a dark green truck on the roads of West Virginia, you know it's Burns Motor Freight. It's an honor to be trusted partners with a 75-year-old trucking company," he says.

Mack Anthem delivers

Driver recruiting and retention is one of the top priorities of the company. And offering top-of-the-line Anthems goes a long way in attracting professional drivers. When Mike specs a new truck, driver safety and comfort is top of mind. "Drivers rave about the top-of-the line, comfortable, heated seats, the flat bottom steering wheel and the ergonomic dash. The 70-inch, stand-up sleeper is roomy, and we upgrade with media stands and Sirius XM radios. We worked with Mack to increase the length of the day cab for extra room and comfort," Burns says. The Anthem's fuel economy is handicapped by the terrain, but Mike is happy with 5.6 miles per gallon for regional hauls and 6.5 miles per gallon for over-the-road.

Drivers give thumbs up to the mirror design for added visibility and the tight turning radius, especially important on the rugged work sites and mountainous terrain. "Our drivers operate on 9% grades and hairpin turns, and the mDRIVE™ makes all the difference. It puts you in the sweet spot with downshifts and upshifts. Even older drivers, after a few trips, are converted to the comfort and safety of driving an automatic," he says.

All three Burns cousins say their granddad would be astonished by the modern, high-tech, extreme comfort their drivers enjoy today. Fred Sr. told stories of how he slept underneath the LJ on hot nights to stay cool and on cold nights would place a board across the front seats and sleep with the door open so the legs on his 6-foot-6 frame would hang outside. "Imagine such a thing!" says Mike with a laugh.

Safety and recruiting

Doug Burns, son of Fred Jr., has been director of safety and driver recruiting since 1993 and says the company prides itself on a culture of safety from the top down. He depends on the safety features of the Anthems, especially the innovations such as



“Granddad and Mack Trucks believed in the same rugged, dependable, hardworking philosophy. And Mack’s tagline, ‘Born Ready,’ sums up both the man and the truck manufacturer.”

**Mike Burns,
Vice President, Burns Motor Freight**

the turning radius and visibility features.

“My dad always advocated for buying the safest, most durable equipment possible. The relationship between Mack and Burns Motor Freight is based on this shared value. It pays off in a wide range of ways. Younger drivers are attracted to the technology and in today’s tough recruiting market, offering new equipment makes a difference,” he says.

Potential recruits are also influenced by Burns family generational succession. The family-oriented focus was a key factor in transitioning to regional and dedicated routes. The company pivoted from 80% over-the-road to offering more regional hauls and dedicated routes to accommodate drivers’

home time demands.

“Today, we are 90% regional/local with 10 percent over-the-road. We respect drivers’ desire to be home for their families. It’s a different world than the one my granddad and even my dad operated in. Other advantages of shorter hauls and dedicated routes is that you can fuel at our terminals and have easy access to maintenance,” Doug says. They offer competitive pay and benefits packages, uniforms and even allow drivers to take their trucks home.

Customer connections

Mike Burns says they had to adapt to the industry changes and adhere to their granddad and father’s motto of, “Get ‘er done!”

“That’s another bond between Mack and Burns Motor Freight. The ability to look to the future and figure out how to adapt to the market,” Mike says. When a sawmill customer asked them to accommodate their need to drop wood chips through the top, we said sure and went out and bought a trailer to match the need. “We don’t say no, we say, we will try.”

John Burns says every time he passes by his granddad’s LJ after a long day’s work, he’s reminded of the legacy they carry on. “Like our dads and their dad, we offer customers full transparency, commitment to safety and on-time delivery, and they know we will do everything we can to get the job done.” ■



Short Journeys Lead to Impressive Growth

United Petroleum Transports Relies on Mack Anthem® to Safely Move Hazmats Cross-Town and Cross-Country

Story by Mary McCaig, Photos by Kirk Zutell

Like many other trucking success stories, United Petroleum Transports began simply—in this case, a solitary truck, a single contract employee and a vision for the future. That vision helped the Oklahoma City-based company grow over the next 60 years into a fleet with hundreds of power units and employees.

“My grandfather, Keith Price, founded UPT as Oklahoma Tank Lines in 1966,” says David Price, executive vice chairman for UPT. “He started with the bare minimum of one truck and a partnership with an independent contract driver, hauling refined motor fuels across Oklahoma. That idea of partnership — actually it’s our mantra — is how we’ve grown our business from the early days.”

Price explains that Oklahoma Tank Lines acquired United Petroleum Transports in the 1980s, and then a decade ago, the company branded itself fully as United Petroleum Transports. Today UPT provides regional bulk carrier services for refined motor and aviation fuels to truck stops, convenience stores and airports across the southern United States. Transport of ancillary products such as liquid asphalt, lube oils and petrochemicals also fall under UPT’s area of expertise, and the company carries petrochemical products across the US and into Canada, including greases, acids, resins, molten sulfur and more.

UPT still works with independent contractors (more than 300), but the company

also has branched into its own fleet of 200-plus company trucks. As the company looks to its next 60 years, it’s relying on the Mack Anthems® at its core to propel it into the future.

Up to the Challenge

The transport of hazardous materials can create unique challenges, particularly from a personnel standpoint. UPT requires a force of experienced drivers who are thoroughly trained, licensed and hazmat-certified, with a tank endorsement. Because of this, the hiring pool for these drivers is smaller than it is for companies with a larger array of services. Yet, UPT has grown its driver count over the past few years — even during the COVID crisis.

“I don’t just like my Mack – I love it. It’s the best and most reliable truck I’ve driven. The power and acceleration are excellent. It outperforms anything else I’ve driven, especially when hauling uphill.”

**Drew Parsons,
UPT Driver and
Certified Safety Trainer**



“The challenge of finding drivers increased during COVID, and that’s when it received the most attention, but the issue had been going on for a while,” Price says. “At the same time, we have increased our driver count over the last two years, in spite of our hazmat and tank endorsement needs, and in spite of COVID.”

Price and Tim Gallagher, UPT’s vice president of maintenance, both credit Mack for helping the company attract drivers.

“Drivers appreciate the reliability of the [Mack] trucks,” says Gallagher. “Reliability stands out because when you look at our out-of-service reports and overall maintenance across all our OEMs, Mack has been the least of our worries. The trucks stay in service, so drivers can go deliver products. Uptime is key.”

Driver Drew Parsons agrees. “I don’t just like my Mack – I love it,” he says. “It’s the best and most reliable truck I’ve driven. The power and acceleration are excellent. It outperforms anything else I’ve driven, especially when hauling uphill.”

A Bulldog on the Hood

According to Gallagher, UPT’s fleet includes Mack Anthems in 2020 to 2024 models, mostly outfitted with day cabs. A smaller portion of the fleet includes sleeper cabs for drivers that transport chemicals and lubricants across the lower 48 states and into Canada. He says the newer Macks have helped UPT attain improved fuel mileage for



its regional refined fuel transport drivers. “I think it’s safe to say that we get seven miles to the gallon, which is good in our line of work,” he says.

Gallagher says what he likes best about UPT’s Mack Anthem trucks are the overall driver features, the power they provide, and their reliability. UPT also has embraced Mack’s GuardDog® Connect. “It’s extremely driver-friendly,” Gallagher says. “If the check-engine light comes on, the driver can call the number, and the technician can provide a diagnosis on the road to determine if it is a bigger issue or not. If the driver is required go to the dealership for a repair, the dealer also already knows the symptoms. The benefit — again — is more uptime. Uptime is key.”

Then there is the solid feel of the Mack Anthem trucks. “Mack is the last to have a steel cab,” says Gallagher. “It’s a very solid cab compared to other OEMs. We also install the RollTek seats, which mitigate rollover-associated risks for drivers for added safety. And there’s simply the aesthetics of the Mack that bring a lot to the table. It just has a big truck feel.”

Price agrees, adding, “Who doesn’t love a Bulldog on the hood? We’ve received a lot of compliments on our Mack trucks.”

Dealers Are a ‘Feather in Mack’s Cap’

Because the company operates out of eight states, UPT relies on several dealers to provide service and support for its Mack trucks. The company purchases its Mack trucks through Bruckner’s in Oklahoma City. “The dealer network has been great to work with. We always have a Mack representative we can reach out to, and if there is an issue, they get right on it,” says Gallagher. “Our relationship with our dealers is a feather in Mack’s cap.”

Room for Growth

Bulk petroleum product transport has

fueled UPT’s growth for almost 60 years, but Price says the company is looking to expand its service operations. “We are still growing our legacy business, but we’re not just focused on the tank world with blinders on. We’re looking at all opportunities that come our way,” he says.

For instance, with operations in Texas and Louisiana and their nearby ports, UPT is getting into some transport of port containers, using its own fleet of trucks. This “side” line of business started organically, Price says, but it is a viable launching point for UPT’s additional growth.

“Simply put, yes — we are a trucking company — but we really are a people business,” Price says. “We believe our main two constituents are our professional drivers and our customers, working together toward a common goal of service and growth.” ■

“Reliability stands out because when you look at our out-of-service reports and overall maintenance across all our OEMs, Mack has been the least of our worries. The trucks stay in service, so drivers can go deliver products. Uptime is key.”

**Tim Gallagher,
Vice President of Maintenance,
United Petroleum Transports**



Mack® MD serves up a new standard

Sullivan Eastern benefits from Mack MD's productivity and uptime

Story by Carolyn Mason, Photos by Larry Atil

When you see a yellow gold Mack® MD service truck with a shamrock green tank rolling down a North Carolina highway—with the name Sullivan framed on a shamrock background—you might assume “the luck of the Irish” is involved. You wouldn’t be wrong.

“Shamrock blood runs green, but in our family, it’s also mixed with diesel,” says Scott Sullivan, vice president of Morrisville, North Carolina-based Sullivan Eastern, Inc. He handles the logistics and maintenance operations for the construction firm specializing in turnkey site development,

roadways and utilities in the booming Triangle area of Raleigh, Durham and Chapel Hill.

The company was founded in 1933 when Scott’s grandfather, JJ Sullivan, started a small construction business in central Minnesota before eventually moving it to North Carolina. Sullivan Eastern’s key family leaders, in addition to Scott, include Tom Sullivan, company president and Jeff Sullivan, secretary treasurer. The business is now in its third generation of family ownership and remains a close-knit family-run operation.

The family members who work at Sullivan

Eastern include Scott’s brother and parents. His father, Tom Sullivan, is company president. The family embodies a strong, hands-on work ethic with an emphasis on safety and customer service.

Scott started out in the company as an equipment operator and then later became a driver. Because of his experience, he knows the equipment inside and out and makes purchasing decisions based on both profit and productivity. He says the fleet does most of its maintenance in-house and can’t afford costly downtime.

“We were able to increase productivity because the new truck can maneuver around rugged terrain more efficiently. That’s a dramatic savings.”

**François Chabot, driver,
Sullivan Eastern, Inc.**

“Uptime is our most crucial factor to profitability,” he says about their primarily Mack fleet. Some trucks have put in long years of reliable service, while others are recent additions. There are nearly a dozen with gold Bulldogs on the hoods, representing an all-Mack powertrain with the Mack MP[®] engine, Mack transmission and Mack rear axles. He credits his local dealership, Transource, for help spec’ing the trucks and Mack Financial Services for financing.

Their latest purchase, a 2022 Mack MD7, has exceeded expectations. The MD was equipped with a fleet service body, including an 800-gallon diesel tank and tanks for another 600 gallons of different lubes and hydraulic fluid along with pumps and hoses to refuel and service nearly 300 pieces of equipment on various construction sites.

The MD’s tight turning radius and enhanced driver visibility makes a big difference on the smaller construction sites common today. “We were able to increase productivity because the new truck can maneuver around rugged terrain more efficiently. That’s a dramatic savings,” he says

The 2022 MD replaced a 1999 Mack RD model, and Scott says it’s been a remarkable addition to their operation. “One of the things we love about the MD is that we have not had any downtime since we bought it. The truck has been 100% reliable so far. No downtime and increased efficiencies made a huge impact,” he says. In fact, the increase in productivity and profitability was so significant, he ordered another MD flatbed and plans to keep adding new Mack trucks to the fleet.

Driver reaction

Driver reaction to the Mack MD sealed the deal for Scott. Frank Boykin, one of Sullivan Eastern’s top drivers, gave the new truck an enthusiastic thumbs up after the first trip.

“[Frank] excels in work ethic, productivity, and professionalism. It would be great to find a dozen Franks. That’s why I put a lot of stock in his reaction,” Scott says.

Frank, who has been with Sullivan Eastern since September 2021, was impressed with the comfortable ride and quiet, ergonomic interior with its power steering, tilt steering column and automatic transmission. He said he likes the air suspension driver’s seat and large, easy-to-reach controls. He also

commented on the truck’s power and maneuverability and said the learning curve for operating the truck was easy.

As the jobsites have gotten smaller and tighter, Frank is able to get around the jobs faster thanks to the automatic transmission, tighter turning radius and great visibility with the truck’s sloped hood and windshield.

He says he appreciates the safety features such as the sharp wheel cut for optimal maneuverability in tough-to-navigate worksite settings, oversized mirrors, and backup cameras for safe backing up and turning tight corners.

“When Frank told me the comfort, durability and safety features make him look forward to coming to work every day, it meant a lot. Our company’s 24/7 focus on safety is a top priority, and we want everyone to get home safely,” Scott says.

As they phase out their older trucks, Scott says he expects to see significant growth and increased productivity from the new equipment.

The new Mack equipment is also a rolling billboard for driver recruiting and retention. “We are known as a family-friendly company

and offer competitive pay and benefit packages. But when you have drivers raving about the new, comfortable, safe equipment, it helps attract a higher quality driver. That’s not that easy to come by these days,” he says.

For younger drivers, equipment with automatic transmission gets them up to speed faster and more safely. Even veteran drivers like Frank prefer the quiet, smooth ride over the old equipment.

Taking care of business

Scott says the health of the company depends on having enough skilled forces to be able to handle the complex predevelopment projects. The company handles everything to do with site preparation and touches almost all parts of the construction site. “We’re usually the first ones in and just about the last ones to leave once the buildings are completed. The last thing we do is return and remove the erosion control measures we initially installed,” he says.

Scott says that as an influx of people continues to move to the Triangle area, the outlook is strong for new business opportunities. Growth is driven by the diverse location with its international airport, universities and teaching hospitals, all contributing to an increased need for Sullivan Eastern’s services in preparing sites for new business construction. As the second and third generation of Sullivans continue their commitment to operating well-maintained, innovative and up-to-date equipment, they expect to carry on through the next generation.

Their company philosophy: “Don’t try to be the biggest, try to be the best,” reflects their mission to build quality projects safely, within budget and on schedule for their clients.

“Operating new, state-of-the art Mack trucks helps our clients achieve their profit, safety, and efficiency goals,” Scott says. ■





Apex Innovation

Mack Defense translates advances for military applications to the larger Mack ecosystem

Story by Kevin Williams

The Mack brand is often associated with long-haul trucks, durable dumps or a fleet of refuse vehicles carrying debris to the local landfill. Whether it's Mack Anthem®, Granite®, Pinnacle™ or TerraPro®, Mack trucks move America. It shouldn't be surprising then that Mack muscle is also vital on the battlefield.

Mack has made itself indispensable in keeping order in global hot spots for over 110 years. As far back as World War I, when trench warfare brought Europe to the brink, Mack, not even two decades old, sent 6,000 trucks to the European theater for use by the United States and Britain. The trucks were so reliable and rugged on the battlefield that the British soldiers christened them Bulldogs.

Despite this storied history, most of Mack's core commercial customers aren't even aware of Mack Defense.

Since 2012, Mack Defense has been a

wholly owned subsidiary that brings the best of Mack to America's military. And Mack's best consists of durability, logistics, application expertise and supply-chain capabilities.

Mack Defense also taps into Volvo Group's global operations for new ideas and scalability, all while keeping aspects compartmentalized and in compliance with strict Army security standards. Volvo Group's leading expertise in autonomous and electric vehicles, something the Army is increasingly emphasizing, can also be tapped into by Mack Defense.

When one thinks of having an apex fighting force, one thinks of the men and women on the front lines, but, as Mack Defense CEO and President David Hartzell says, if those soldiers can't be supplied with ammunition, fuel and backup, then there is no sustainable

"I think it's our patriotic responsibility to support and use the capabilities that we have as one of the leading truck manufacturers in the world."

David Hartzell,
Mack Defense CEO
and President

fighting force. The soldiers are the fist, but Mack Defense is the arm. And providing high-end trucks and other needs for the Army is paramount.

Hartzell views the role of the company and all of Mack Defense's employees nobly. "I think it's our patriotic responsibility to support and use the capabilities that we have as one of the leading truck manufacturers in the world to provide that level of capability to our U.S. military and other partner militaries around the world," Hartzell says.

For all the promise and buzz artificial intelligence has created this year, Mack Defense's backbone is still its human intelligence, leveraging scores of specialized skill sets from engineering to finance, project and procurement, quality control and more that goes into making Mack Defense an indispensable ally in the theater.

From Mack Defense to Mack Trucks

Mack Defense's history and role may be fascinating, but if you are a Mack driver hauling milk outside Omaha or carrying cargo from Detroit to Dallas in an Anthem, how does Mack Defense impact the rank-and-file fleet?

The military has a history of driving innovation. Often, those innovations find peacetime and commercial applications, from silly putty to the EpiPen and numerous other everyday products.

When it comes to transportation, the innovations include powertrain and mobility improvements, which often eventually find their way into the commercial side of Mack.

As the military tasks Mack Defense for various mission-critical modifications or equipment, innovations and efficiencies are being monitored for possible deployment in the commercial sector. For instance, autonomous vehicle development for use in an off-road military environment may one day have applications in oilfields or logging operations.

Mack Defense has its own in-house engineering operation. As its largest division, it shows the premium and priority placed on made-to-order innovations.

With the Army as a customer, you can't just send a bunch of Granites to Fort Bragg and call it a day. There are numerous situational and operational specifics requested by the Army that Mack Defense must first understand and then engineer a solution to meet these requirements.

"There is an extensive amount of re-engineering done to meet the military requirements for mobility, payload capacity and armored solutions which meet the force protection requirements and so on," Hartzell explains. This goes right down to the suspension, tire wheel equipment, axles, and anything else to meet the mobility



requirements, all while maintaining function and form as a 27-ton armored dump truck.

One of Mack Defense's largest set of deliverables to the Army has been 446 non-armored dumps, the M917A3, which is a military-grade version of the Granite. The first M917A3s were delivered to the Army in 2021.

The re-engineering process is repeated whether the order is for cranes, wreckers, refuelers or any type of body equipment which can be installed onto a truck.

"So, we ensure the truck design including all body equipment fully meets the military requirements using as much of the commercial components that are available including our Mack engines," Hartzell says. After Mack Defense provides an engineered solution to the Army, the Army will thoroughly test the truck to ensure all operational performance and durability needs are met, including subjecting the armored trucks to live-fire events to see how easy – or hopefully not at all easy – it is for the enemy to stop them.

Engineering also must factor in transporting the trucks; a collection of 27-ton dumps is challenging to transport from the United States to Iraq, Jordan or Afghanistan, and the truck design must meet military lifting and tie-down specifications for air, rail and ship transport.

Even aspects that seem more aesthetic than engineered are complex. For instance, the paint on the M917A3 dump truck requires extensive engineering and testing. It's more complicated than just slapping on a coat of camouflage green or desert tan. Hartzell describes how the Army requires a military spec chemical agent-resistant coating, or CARC paint, to meet corrosion resistance, allow decontamination in the event of a chemical attack and to reduce infrared

signature of the truck. Standard industrial coatings won't do the trick.

Many of these innovations eventually find their way into the larger Mack ecosystem.

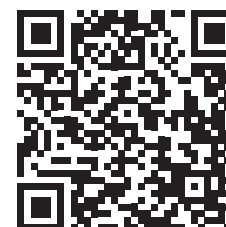
The Army's powertrain specifications are incredibly daunting from an engineering standpoint, but Mack has implemented innovative modifications so that the military can have their needs met.

The Army needs increasingly fuel-efficient vehicles. It's not just an environmental issue but a practical one. There is always the danger of supply chains being attacked as the enemy attempts to disrupt and starve logistics. An enemy's attempts to deny logistics are less effective if a vehicle can operate continuously and cover longer distances without refueling.

Mack Defense's engineers leveraged developments within Mack commercial's vehicle electrification technologies and well as with industry leading suppliers to integrate an electrified propulsion solution to assist in reducing fuel consumption and provide the Army with exportable power for other equipment needs in a theater of operation.

"There's definitely applicability back into the commercial space," Hartzell says. So, if past is prologue, perhaps one day you'll be driving a Granite or Anthem with the same capability being offered to the Army today. ■

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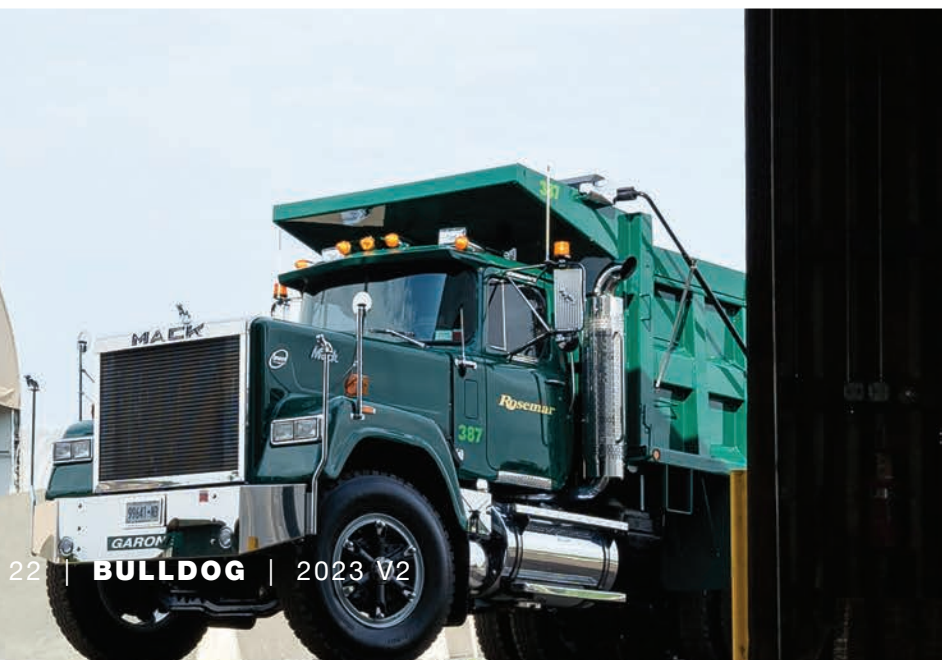
CALENDAR

Super Models

Although you can see great-looking Mack® trucks on any given highway on any given day, there are a dozen outstanding Bulldogs within the pages of the annual Mack Calendar, which highlights customers' Mack Trucks from all across the United States and Canada.

Selected from the top vote-getters in the 2024 Mack Trucks Calendar Contest, the calendar features new and old trucks of all kinds – dump trucks, mixers, refuse, long-haul – anything the Mack product line has to offer. Over Mack's 124-year history, Mack has led the way in customer support and new technology, and many of the calendar winners cite these reasons for their Mack loyalty.

Mack customers are known for the passion they bring to their operation and their Mack Trucks. Here are the trucks of the year for 2024. Calendars can be purchased from mackshop.com. ■



The 2024 trucks of the year

Granite

Tas Trucking, Inc.
Kitchener, ON

This 2023 Granite that hauls gravel for asphalt and concrete plants from the pit to plant grosses nearly 140,000 pounds when loaded and can cover 80,000 miles in a year.

Silverline Group, Inc.
Thorold, ON

Silverline handles excavations, site services, gravel and soil haulage, demolitions and concrete forming and flatwork, and has more than 25 Macks – and has chosen Mack trucks since day one.

Anthem

Growmark FS
Manson, IA

Growmark chose the Anthem for its versatility, tight turning radius and excellent ride. Their drivers love the Anthem and run the truck seven days a week.

McNeilus Steel
Dodge Center, MN

Delivering steel products, McNeilus’ drivers routinely travel 500 miles per day. Their fleet of 180 Mack trucks provide great ergonomics and driver comforts.

Mack MD

Fogel’s Fuel Service
Nazareth, PA

Fogel’s 2023 MD7 is used for propane delivery and home heating supplies, and performs “flawlessly,” according to its owner.

Solid Waste Applied Technologies, Inc. (SWAT)
Statesboro, GA

Spending its day on service calls, this Mack MD repairs and services refuse trucks in a 100-mile radius, tackling the tough job with ease.

TerraPro

Cyclone Trucking
Lewisville, TX

This eight-axle TerraPro has a 63-meter boom to pump concrete to distant locations on a jobsite, enabling it to handle the biggest jobs.

LR

Amwaste LLC
West Point, GA

A workhorse, this Mack LR is one of a fleet of 300 and the go-to for hard working refuse fleets with high operating cycles.



JUNE | MACK® GRANITE®

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31	27	28	29	30	31	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

TAS TRUCKING, INC.
KITCHENER, ON | ALEKSANDAR TANASIC, OWNER

It's hard to imagine that such a sharp truck like Alex's spends so much of its time in a pit. The Granite and its twin haul gravel for asphalt and concrete plants "from the pit to the plant," Alex says. This 2023 Granite combination grosses nearly 140,000 pounds when loaded and can cover 80,000 miles in a year. Tanasic's three other trucks are also Granites. "I always liked Macks as a kid," he says. "I played with Mack toys. I am a Mack fan."



Pinnacle

Northwest Tank Lines
Calgary, AB

Extreme conditions are no match for this 2014 Mack Pinnacle hauling natural gas liquefied or butane with loads up to 140,000 pounds gross from the wellhead to the refinery. The truck regularly pulls 12 percent off-road grades.

Schappaugh Trucking LLC
Hannibal, MO

This 2016 Pinnacle Rawhide Edition sleeper not only gets the job done hauling flatbed freight, but the Rawhide package sets it apart from other “cookie-cutter” trucks.

Legacy: 1986 Mack Super-Liner

Coastal Trucking
Ladysmith, BC

Vancouver Island Mack lent a hand getting this 1986 Mack Super-Liner RW 713 to its present condition. With a V8 diesel, it's the star of an all-Mack fleet of heavy-duty trucks serving Vancouver Island.

Legacy: 1987 Mack Super-Liner

Rosemar Construction
East Moriches, NY

Rosemar Construction’s Super-Liner is running strong after all these years hauling 24 tons of asphalt from the plant to the jobsite.



Mack Anthem Hits the Apex with Skip Barber Racing School

Story by Jim McNamara

Driving a racecar is a serious business. It's intense, high performance and requires a total commitment to detail. So many things have to go right to keep the whole effort on track, literally. Operating a top-level driver training academy at multiple locations around the country brings a completely different level of focus and complexity to the motorsports arena.

That's what the Skip Barber Racing School does. SBRS is the preeminent and iconic driver training organization, according to Dan DeMonte, co-owner and chief marketing officer. "When it comes to racing, that means training 50 percent of all IndyCar drivers, a similar number for NASCAR, and producing successful racecar drivers at all levels since 1975, including Formula One," DeMonte says. Those organizations have extremely high standards.

SBRS is also an "experiential firm," according to DeMonte. In addition to the hard-core training and skills improvement for amateur or professional drivers, SBRS reaches a wide audience of non-racers. "We're a driving academy and the academy teaches people on a more consumer basis, how to be safe and secure, while confidently operating a vehicle. And that can be a team, somebody new to driving. That could be the other side as a professional driver. Anybody that has to drive for a living can learn and benefit."

Mack Trucks plays an important role in that process, with three Mack Anthem® 70-inch

sleepers now part of the Skip Barber fleet. The Anthems are transporters, carrying the race cars, tools and equipment the school uses around the U.S. on a circuit of 8 primary racetracks. If the Anthems and their contents don't get there on time, some very-excited would-be racers will be extremely disappointed. That's unacceptable.

"It's not that just the truck's not going to show up, but encased in that truck is going to be tools, equipment, anywhere from four to 8 vehicles. And so, if you're going to ruin somebody's day, that affects us from a revenue stream by not being there and being consistent," says DeMonte.

Mack is a good partner for SBRS, says DeMonte. The trucks are reliable, the transport drivers love them, and the Anthems look very sharp in their visually prominent role as mobile workshops and garages on the side of the racetracks. The organization is "on track" with students and customers over 200 days each year, "constantly on the move," DeMonte says.

"When you play in an industry where failure is not much of an option, it's hard. When we show up to an event, it's very important what we look like, how we act. The performance of that vehicle on the road is critical to us. We've got to be in certain places at certain times."

Mack has an earned reputation for performance and consistency that appealed to Skip Barber. DeMonte said equally important was the ability to build trust with Mack and SBRS's dealer, Transource, and

put together a program that worked for them. The Anthems come in the school's signature Viper Red paint and have full aerodynamics and Mack's top-level Elite interior trim for driver comfort. Power comes through the powerful and efficient Mack® MP®8HE engine with 445 horsepower and 1,860 lb.-ft. of torque combined with the Mack *mDRIVE*™ 12-speed automated manual transmission.

The SBRS Anthems are also equipped with Bendix Wingman Fusion collision avoidance systems, and Mack Command Steer, a variable steering-assist system that mitigates steering feedback from uneven terrain such as dips, ruts and potholes. Command Steer reacts to those inputs by smoothing the steering response and reducing steering wheel "kicks." This results in a smoother experience and less fatigue for driver.

DeMonte approves of this focus on the driver and safety. "As a business owner, safety is important for me. We've got to make sure our employees are safe and comfortable in our equipment."

Overall, he thinks the Mack Anthem contributes to the impression he and the rest of the Skip Barber team strive to present at all times to their very demanding clientele. And no wonder.

"The reaction that we get from people that come to our program is really amazing. I have people that come up to me and say, 'Hey, this could be the best day of my life.' And I say, 'Listen, don't tell your wife or kids.' But, it's all a wow." ■



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Add eMobility to your fleet through a single monthly payment without any major capital investments or long-term commitments.



1. The Mack ElectriFi Subscription program is a usage-based lease for qualified customers offered by Mack Financial Services (MFS), a division of VFS US, LLC. Finance and lease offers and solutions are subject to credit review and underwriting, and approvals will state transaction terms and conditions. All leased trucks are delivered through authorized Mack dealers, and Ultra Service Contract is offered by Mack Trucks. This transaction is not a "Vehicle Subscription" as defined by applicable law. MFS reserves the right to amend or cancel this offering at any time without notice. Offer available in the U.S. only. Eligible on new Mack MD Electric models only.
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Mack Trucks in the 2024 Spotlight

Come see Mack Trucks at one of the many industry events we'll participate in during 2024.

January 23 - 25	World of Concrete	Las Vegas, NV
March 4 - 6	TMC (Technology & Maintenance Council)	New Orleans, LA
March 6 - 8	Work Truck Show	Indianapolis, IN
April 18 - 20	Truck World	Mississauga, ON
April 21 - 23	NPTC (National Private Truck Council)	Orlando, FL
May 7 - 9	Waste Expo	Las Vegas, NV
May 21 - 23	ACT Expo	Las Vegas, NV

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