



# Bulldog®

## Driving Design

### The Role of Ergonomics

**Connected trucks**  
Putting telematics to work

**Equipment:**  
Rave reviews for *mDRIVE™* HD  
and 2017 powertrains

**Headlights:**  
GuardDog® Connect for Mack LR

Vol. 3 2016

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# Driving Design

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# HEADLIGHTS

## Mack Trucks Increases Productivity, Safety with Mack® Omnitracs Integrated Telematics



**M**ack Trucks announced an expansion of its fleet management services with the addition of Mack® Omnitracs Integrated Telematics. Powered by Omnitracs LLC, a global pioneer of fleet management solutions for transportation and logistics companies, Mack Omnitracs Integrated Telematics utilizes Mack's factory-installed telematics hardware to help boost productivity and safety by providing real-time GPS location information, as well as driver performance data.

"Mack Omnitracs Integrated Telematics gives our customers a new look into their operations, enabling them to more easily see where and how their truck assets are being utilized," said David Pardue, Mack vice president of connected vehicle and uptime services. "Applying that knowledge helps increase productivity, while also improving the safety of their drivers."

Mack Omnitracs Integrated Telematics uses Mack's fully integrated GuardDog Connect telematics hardware to capture

and relay information such as relative road speed and idling duration and cost. In addition, the system is capable of analyzing driver performance based on the data and GPS information captured from the truck. Real-time email or text messages can alert customers to potential issues.

"With no additional hardware required, Mack Omnitracs Integrated Telematics provides detailed fleet management data without the need to add to or modify equipment," said Rich Glasmann, vice

## Mack to expand Fleet Management Services with WheresMyConcrete

Real-time data tool for concrete dispatching provides analytics and increases transparency for customers

**M**ack Trucks is teaming up with **WheresMyConcrete**, a real-time data tool for concrete dispatching, to develop options for Mack® Fleet Management Services.

WheresMyConcrete provides concrete mixer fleet dispatchers with real-time data [to track delivery and order progresses] and analytics for improving operations. It is also designed to improve transparency and service for customers.

Mack Trucks announced in September that it signed a memorandum of understanding

with WheresMyConcrete, and said the the addition of the real-time data will improve asset visibility and dispatch efficiency for concrete mixer fleets. Mack will announce more details of the agreement at the World of Concrete trade show in January.

"We look forward to working with Mack and offering concrete producers the unique benefits our system delivers," says Anthony Valente, chief executive officer of WheresMyConcrete. "Through our combined technologies, we will help customers improve their decision-making processes and

business performance."

Mack Fleet Management Services connects data from Mack's telematics hardware with third-party solutions to help customers manage operations.

GuardDog® Connect telematics solution, which is the enabling platform for Mack Fleet Management Services, allows for real-time monitoring of a truck's engine, transmission and aftertreatment systems. Should an issue be detected, GuardDog Connect provides an initial diagnosis, scheduling of repairs and confirmation that needed parts are in stock



president of OEM strategy, sales, and marketing at Omnitracs. "This allows customers to gain even greater value from their existing hardware through data analytics."

Mack Omnitracs Integrated Telematics subscriptions are available for all new Mack Pinnacle™, Granite®, TerraPro® and Titan by Mack models. Subscriptions for current customer vehicles may also be available. For more information, visit [www.omnitracs.com/mack](http://www.omnitracs.com/mack) or a Mack Trucks dealer.

and ready to install.

Through Mack ASIST and Mack OneCall™, GuardDog Connect also offers proactive communication of critical information to a customer's predetermined decision-maker, helping to maximize uptime.

GuardDog Connect is standard on Mack Pinnacle™, Granite®, Titan by Mack and TerraPro® concrete pumper models and all Mack-powered vehicles.

"The addition of WheresMyConcrete means concrete mixer customers can count on Mack for more than just our dependable trucks," says David Pardue, vice president of connected vehicle and uptime services. "With the ability to view critical fleet information in real time, WheresMyConcrete gives our concrete mixer customers the tools they need to be successful."

The Mack Uptime Center, which houses customer support, is located near Mack headquarters in Greensboro, North Carolina.



The Telly Awards, the premier award honoring video and film production and online commercials, video and films, recently recognized Mack Trucks' "The Horn" video with four bronze awards.

## Video 'The Horn' earns Mack Trucks 4 Telly Awards

Premier award honors video and film production and online commercials, videos and film

**M**ack Trucks' video "The Horn" was awarded four Telly Awards, the premier award honoring video and film productions and online commercials, videos and films.

The video, which details a man's love for trucks from when he was a boy to his current career as a truck driver, received four bronze awards during the Telly Awards 37th annual awards program in the categories Branded Content & Entertainment - Business to Consumer, Branded Content & Entertainment - Promotional Branding, Commercial - Automotive, and Commercial - Campaign - Promotional/Branding.

"The Horn," which was shot over four days in Iowa, racked up nearly 1.5 million views across Mack's social media channels, and was selected from more than 13,000 Telly

Award entries from around the world.

"The Horn' demonstrates the timeless connection between Mack fans and our trucks," says John Walsh, Mack vice president of global marketing and brand management. "We've received countless stories from customers and fans alike describing how they've been moved by the video and how it brought back happy memories for them. We're grateful for their response to 'The Horn'," and honored to have our hard work recognized by the Telly Awards."

"The Telly Awards has a mission to honor the very best in film and video," says Linda Day, executive director of the Telly Awards. "Mack's 'The Horn' video illustrates their creativity, skill and dedication to their craft and serves as a testament to great film and video production."

## Mack Shop Winter Collection

Head over to [www.mackshop.com](http://www.mackshop.com) and check out the wide variety of cold weather gear.



Charcoal Mack Knit Cap, \$16.99



Black & Gray Mechanic Gloves, \$15.99



16 Oz Tall Mug, \$9.99



Ladies Antique Cotton Jacket, \$129.99



Ladies Grey Long Tail Sweatshirt W/ Pockets, \$44.99



Long Sleeve Thermal - Copper, \$36.99



Men's Tradesman Heavyweight Thermal 1/4 Zip, \$89.99

# HEADLIGHTS



## GuardDog® Connect standard in Mack LR

Expansion to refuse model makes diagnostic and repair planning system standard in all Mack-powered vehicles

**G**uardDog® Connect, Mack's integrated telematics solution, is standard in Mack's newest refuse model, the Mack LR, which means the proactive diagnostic and repair planning system is now available and standard in all Mack-powered vehicles.

Mack said the decision to expand the telematics solution to Mack LR, its newest low-entry cabover refuse model equipped with an MP® engine, was made after receiving ongoing positive feedback from customers. Mack made the announcement in November at the Canadian Waste and Recycling Expo in Toronto.

"Uptime support is as important for our refuse customers as our highway customers," said Curtis Dorwart, Mack refuse product marketing manager. "GuardDog Connect simplifies the diagnostic and service process and combines purposeful telematics technology with Mack experts who can help keep the customer on the job."

GuardDog Connect monitors fault codes that could potentially shut down a vehicle. Should an issue be detected, GuardDog Connect provides an initial diagnosis, a scheduling of repairs and confirmation that parts are in stock and ready to install.

The telematics solution provides support through Mack OneCall agents, Mack's 24/7 service support team, with Mack ASIST, a cloud-based service relationship management tool that connects fleet customers, dealers and service providers with Mack field staff during service and repair events.

"Offering GuardDog Connect in the Mack LR enables us to provide the same high level of service and support to all Mack-powered vehicles in our lineup, addressing the needs of all customers, in all applications," Dorwart says.

Through GuardDog Connect, LR customers will also have access to Mack's suite of fleet management services, including Telogis, a provider of cloud-based intelligence software, and Omnitrac, which uses GuardDog Connect telematics to capture and relay information such as relative road speed, idling duration and cost.

The Mack LR is available in three-axle 6x4 configurations and can be powered by diesel or natural gas. The standard 11-liter Mack MP® 7 diesel engine delivers 325 to 355 horsepower and 1,200 to 1,280 lb.-ft. of torque. Optional is the Cummins Westport ISL G natural gas engine. It also features an Allison RDS five- or six-speed automatic transmission.

Earlier this year, Mack made GuardDog Connect standard on all TerraPro™ cabover models, which can be configured for many applications including refuse, concrete pump, dump or mixer. GuardDog Connect became standard on TerraPro concrete pump chassis in 2015 and Mack was the first original equipment manufacturer in the industry to offer proactive support service for pump applications.

GuardDog Connect has been standard on the Mack Pinnacle™, Mack Granite® and Titan by Mack models since 2013.



Lehigh Valley Operations, a Pennsylvania Mack Trucks assembly plant, improved its energy performance by more than 30 percent over the last 10 years, earning it the highest certification in U.S. Department of Energy's Superior Energy Performance program in the Mature Energy Pathway category.

## Lehigh Valley plant receives top certification in energy performance by U.S. Department of Energy

**A** Mack Trucks assembly plant recently received the highest recognition by the U.S. Department of Energy for improving its energy performance.

Lehigh Valley Operations in Lower Macungie, Pennsylvania, improved its performance by 31.5 percent over 10 years, earning platinum certification in the Mature Energy Pathway category in the Superior Energy Performance program.

Opened in 1975, Lehigh Valley Operations builds all Mack truck models for the U.S. and export markets.

Administered by the Department of Energy, the Superior Energy Performance program certifies industrial facilities with energy management systems that meet ISO 50001, the global standard for energy management systems.

This is the second time Lehigh Valley Operations has received platinum-level certification — the highest level attainable — in the Mature Energy Pathway category. It was the first U.S. manufacturing plant to do so in 2013.

Some key energy saving projects implemented at the plant include upgrades to lighting and lighting controls, a building automation system, improved air compressor management, changes in heat recovery during the manufacturing process and upgrades to increase HVAC system efficiency.

Rickard Lundberg, vice president and general manager of the operating plant, says Mack is proud to receive the recognition again.

"While we've made great strides in improving our energy performance, our employees are hard at work identifying and implementing even more energy-saving ideas to help shrink our environmental footprint," Lundberg says.

In addition to the Mature Energy Pathway certification, the plant was also recertified to the energy performance standards ISO 50001 and ANSI/MSE 50021.

# TRENDS A roundup of the numbers that drive your business.

## INFRASTRUCTURE

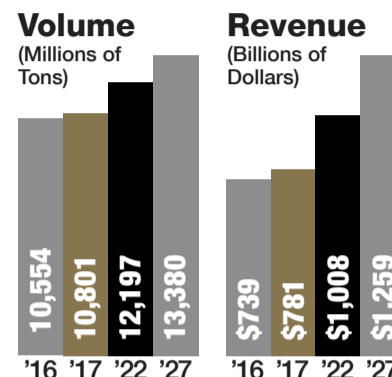
# 72%

**THAT'S THE PROJECTED INCREASE** in heavy truck travel by 2030, a reality that adds to the wear and tear on the nation's already stressed urban roads and highways. Currently, there is a \$740 billion backlog in improvements needed to restore roads, highways and bridges to the level of condition and performance needed to meet the nation's transportation demands, according to AASHTO.

## FREIGHT

### Forecast: A decade of steady growth

**TRUCK TONNAGE** is slated to expand 2.1 percent annually through 2022 and then 1.1 percent each year to 2027. At the same time, truck revenue will grow an average of 4.8 percent annually through 2022 and then slow to 4.5 percent per year over the remainder of the forecast period.

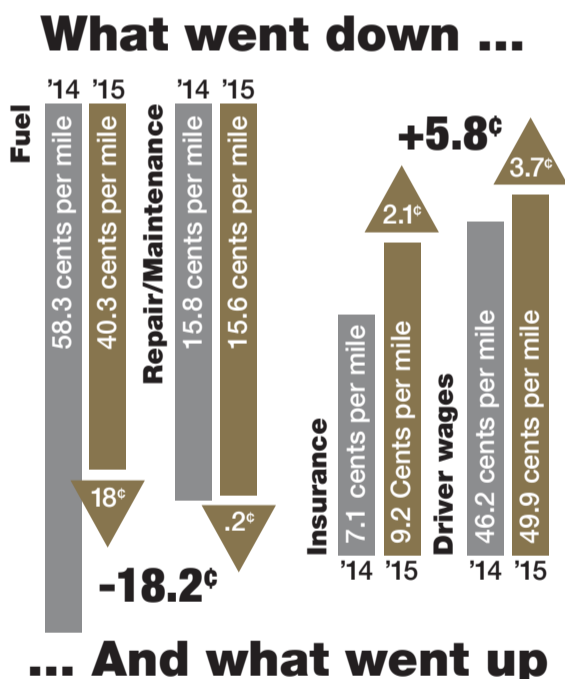


Source: American Trucking Associations 2016 Forecast.

## COSTS

# More than 10¢

**THAT'S HOW MUCH** fleets' per-mile operational costs dropped in 2015, from \$1.70 to \$1.59, according to data from the American Transportation Research Institute. For the first time since ATRI began compiling the annual report, fuel was not carriers' top expense.



## DRIVERS



### Why she drives

**WOMEN TRUCK DRIVERS** are in high demand these days, (along with their male counterparts, of course). Fleets trying to woo female drivers express interest in how and why women choose trucking careers. A recent *She Drives Trucks* survey asked women truckers why they choose trucking as a career. The top three answers: They like working in a nontraditional industry for women, they have a desire to see the country and they enjoy good pay and benefits. In fact, when asked to describe their trucking job, 54.6 percent say they love their job. More money and more home time are the top reasons they say they would leave their current company to work for another trucking company.

## CARGO THEFT



### Highway Robbery

**THIEVES STOLE 7 PERCENT** more freight in the third quarter of 2016, compared with the prior year, according to FreightWatch International. Electronics and home and garden goods were the most stolen items, followed by food and drinks. TVs, appliances and meat and produce also topped thieves' lists.




**COVER STORY**

# Driving Design

The science behind a comfortable truck

By Denise L. Rondini





**W**hen drivers spend up to 42 hours a week behind the wheel, a well-designed cab can make a big difference in their comfort, efficiency and safety.

“Ergonomically designed vehicles help drivers do their work more efficiently,” says Darrell Bowman, engineering lead for ergonomics at Mack Trucks. “But even more importantly, it helps fleets increase the driver applicant pool by providing a vehicle that is more accommodating to drivers of more sizes and abilities.” The science of ergonomics combines the biomechanics of man/machine interface with deep understanding of how the machine is used in a practical application that is user friendly and safe.

# COVER STORY

Bowman says that today ergonomists get involved at the ground level when vehicles are being developed. Ergonomists have to be aware of the changes in the trucking industry that may affect the ergonomics of the truck, whether it is a shift in the physical size of the driving population or the changing demographics of the driver population. They also have to be mindful of the trucks' application.

To do this they are in continuous contact with drivers. Sitting down with drivers to discuss their needs is one option, but Bowman, who has had a Class A CDL for more than 10 years, says, "There is nothing better for understanding how a vehicle is used than going out there and using it yourself." And, according to the Department of Health and Human Services' anthropometric study, "If design is poorly fitted to size and dimensions of drivers, the road may be less visible, controls may be more difficult to reach and seat belts less comfortable."

Bowman explains that it is important for information to be gathered when the vehicle is in its conceptual stage. "We sit with the engineers and designers when the pencil first hits the papers," he says. "We actually are involved throughout the entire design process as we develop the requirements that represent the driver, we hold engineers accountable to those requirements and we test for those requirements at the end before the vehicle is released to the market."

Stu Russoli, highway product manager for Mack, says two things come to mind when he thinks of ergonomics: design and driver's perspective.

"From a design perspective when we design, redesign or even move anything around in the cab we evaluate it in several ways. We digitally examine the areas affected making sure the work flow, reach, visibility, interferences from other equipment such as the steering wheel, brake controls or even the cup holder don't interfere with line of sight or reach," Russoli says.

Then Mack develops a test rig in order to physically try out changes using engineers and other internal personnel specifically selected for their diversity of size. The study considers all sizes of male and female drivers. Using a survey, everyone reviews the same feature, for comfort, reach and visibility.

"Finally depending on the impact of the change — are we moving the radio to

accommodate a shift pad or are we redesigning the entire dash — we bring in industry drivers to make the final evaluation in a similar manner to our internal survey and possibly test driving the complete vehicle to evaluate comfort and real-world use," he explains.

When most people think of ergonomics, they immediately think of seats, but ergonomics plays a much bigger role in truck design than that. Ergonomics can be applied wherever there is an interface between the driver, operator, the technicians and the vehicle.

## Understanding ergonomics

Ergonomics is essentially the study of work. "Ergonomics is understanding what the person does, whether it is the driver, the operator or the technician, and then matching it with the engineering and design of the vehicle," Bowman explains. It includes understanding the goal of the task being performed and then relating that information to the engineers and designers so they can incorporate it into their concepts.

Failure to consider ergonomics in vehicle design means there may be a mismatch between the vehicle and what the operator wants to do. Poor design can cause frustration, errors and discomfort.

From a physical standpoint, if the truck design is not matched up with the size and shape of the driver, he or she can experience biomechanical discomfort including aches and pains. That discomfort can contribute to driver fatigue and even turnover. "If it is not an ergonomically designed truck, it may impact the driver's willingness to operate that truck for longer periods of time," Bowman says. On the flip side, Bowman says a truck with well-designed ergonomics that is suited to their capabilities and physical dimensions means the drivers enjoy operating the vehicle. Given the current and projected driver shortage, keeping drivers happy and comfortable has become even more important and has placed more pressure on getting vehicle cab design right.

## Shedding light

Truckers have a variety of lighting needs inside the cab and the color, type, position and intensity of the lights are important ergonomic considerations.

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**"There is nothing better for understanding how a vehicle is used than going out there and using it yourself."**

**Darrell Bowman, engineering lead for ergonomics at Mack Trucks**

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For example, when filling out paperwork on the steering wheel, the light should illuminate the workspace and not come from a typical dome light that may cast a shadow on the paperwork. A passenger light should not obstruct the view of the driver and should have individual controls. Russoli says all of these lighting features are included in the Mack cab, along with general light and reading lights in the sleeper and red floor lighting options for customers who prefer dimmer light at night.

## Reducing vibrations

Truck makers have been working hard to reduce noise, harshness and vibration in the cab in an effort to create a more comfortable ride.

By the very nature of their work, truck drivers are exposed to whole-body vibrations, which can lead to muscular and skeletal issues.

The Washington State Safety and Health Assessment and Research for Prevention Program and the Trucking Injury Reduction Emphasis Group says, "Work-related

# Dashboard and instrument cluster

One major area where ergonomics is playing an increasing role is in the dashboard and instrument cluster. There is now so much information coming to the driver via telematics and other devices that managing the real estate in the dash has become a challenge. “You are starting to see more wraparound dashboards that match the biomechanics or the reach of the driver, so the more important controls are within the driver’s cone of vision. They are easy to read while driving without increasing the ‘eyes off the road’ time or having the driver reach down into the vehicle to get to certain important controls,” Bowman explains.

Russoli adds, “If the driver can see, not only out of the cab, but all the gauges and switches without having to lean forward or out of his or her driving position they will be more comfortable and less fatigued at the end of the day.”

The Mack dash panel is designed to wrap around the driver and the “wrap” is designed so the driver can reach all the controls while seated and without leaning out of the seat. Mack has designed the accelerator pedal and brake pedal to be parallel to each other for a

smooth comfortable transition when moving the foot from one pedal to the other. The pedals are also suspended rather than pivoting up from the floor and are designed for comfort.

Another development is the migration of controls to the steering wheel and stalk so the driver’s hands can maintain control of the vehicle and reduce the amount of time the driver has to take his or her hands off the wheel.

Larger multiple graphic displays replacing traditional analog gauges are also making their way into truck cabs. These new displays provide drivers with more in-depth information. “You will start to see more of this in trucks. It will move to be more like what you are already seeing in automobiles where there is a display in front of the driver and one to the side,” Bowman says. He explains that the display on the side might be a touch screen that will reduce the number of switches and “help the drivers quickly get to what they need to see.”

Ergonomists evaluate those screens to determine which ones should be locked out while the vehicle is moving to help mitigate driver distraction. They study how the driver will use the various screens and then determine which are safe to use while driving and which are not.

musculoskeletal disorders/sprains and strains are the single biggest component of a trucking company’s workers’ compensation claims.” They say that these types of problems account for 33 percent of all workers’ comp claims and that the lower back is the area most affected (30 percent).

As vibration is transmitted to the body, its effects can be amplified, according to a safety-training program by the Texas Department of Insurance, Division of Workers’ Compensation. “Vibrations can agitate the body to the point of causing micro fractures in the vertebrae, disc protrusion, nerve damage and acute lower back pain. Vibration also causes increased muscle tension as the muscles work to dampen the vibration. Plus, low-frequency vibrations of moderate intensity can induce sleep.”

Researchers are studying vibration and how it causes physical and mechanical changes to the body.

“The key to reducing fatigue and improving alertness is trying to make a calm environment,” Bowman says. Vibration is commonly linked to driver fatigue so “what we want in the cab is materials that help dampen the

vibration and alleviate some of the harshness of the driving experience,” he says. This includes material used for seats and flooring.

Russoli says a last item that may sometimes be forgotten is noise. “To someone spending their whole day and even their whole week in a truck, noise — or perhaps better said, quiet — is important and plays a part in fatigue. The Mack cab is not only roomy and smooth riding but also quiet.”

He adds, “The quietness of the cab is often mentioned by drivers and with the upcoming 2017 engines with common rail fuel injection the engine runs quieter so the in-cab noise will be even less, which improves driver comfort.”

## Take a seat

It is no surprise that ergonomists and design engineers focus a great deal of attention on seats since truckers spend so much time in them. They analyze the shape and contour of the seat to understand how it impacts the pressure points and blood flow of the occupant looking at how that translates into comfort. They are trying to achieve

evenly-distributed pressure from the seat.

The other thing that ergonomists try to understand is the adjustability of the seat — to provide not only more adjustability but optimal adjustability because of the height range among drivers. “The key is not just giving more adjustability but providing it in its optimum locations to give drivers the greatest ability to achieve a comfortable position,” Bowman says.

An air suspended driver’s seat along with an air suspended cab, fully adjustable tilt and telescopic steering column (all found on Mack cabs) contribute to driver comfort. “Air seats with various lumbar, leg and other adjustments are common in the industry, so the customer can choose different levels of comfort in this area,” Russoli says.

Beyond the seat itself, part of the comfort of the seat is the seat back angle and Mack has designed the seat to be able to tilt to a comfortable position even in the rearmost position. “The roomy cab allows plenty of forward to aft seat adjustment and the infinitely adjustable tilt and telescopic steering column allows drivers of all sizes to find that ‘just right’ position,” he adds.

# COVER STORY

## Entering and exiting

Getting into and out of a truck can be risky. In fact, according to a report by the University of Michigan Transportation Research Institute and Center for Ergonomic Industrial and Operation Engineering, there are nearly 15,000 lost-time slip or fall injuries to truck drivers each year in the U.S. Fifty percent of those falls happen when the driver is entering or exiting the tractor with more injuries reported during the exit.

That's why ergonomists focus on analyzing how a driver gets in and out of a cab depending upon the arrangement of the step, grab handles, door opening width and where the seat and steering wheel are located. Bowman says they apply motion capture technology and biomechanical analysis of the driver's stability as they enter and exit the truck and then use digital human modeling technology to guide the design.

Stu Russoli, highway product manager for Mack, breaks the process down to the nuts and bolts. "Mack models have an exterior grab handle behind the door so as soon as the door is opened, the driver can use one hand to grab the handle and his left hand can then grab either the interior door handle or the steering wheel and start climbing the steps. The exterior handle extends from the bottom of the door to the top so the right hand can slide up the handle and never lose contact. Mack's steps are designed to be stair-stepped (the bottom step extends further out than the top step) as opposed to a ladder style. This makes it easier to climb and descend, prevents the driver from hitting their shin on the higher step and gives a better view of the bottom step."



Another challenge with seats is to make them comfortable as drivers shift positions throughout the day. Maintaining a static posture for a long period of time is not good because it impedes blood flow at pressure points. "We have to design the seat to allow drivers to adjust their posture to alleviate some of those pressure points," he says.

### Sleeping in comfort

A highly scrutinized area of driver safety is the quantity and quality of sleep. Mack's sleeper areas reflect careful attention to the ergonomics of sleep with the installation of adjustable lighting and accessible HVAC power outlets. Drivers give their input into the design decisions such as storage space and location of the bunk. Interestingly, Russoli

says, most drivers surveyed say they prefer to sleep with their head on the driver's side of truck. That info helps design the location of the sleeper controls and electronics placement.

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**"We have to design the seat to allow drivers to adjust their posture to alleviate some of those [blood flow] pressure points."**

**Stu Russoli, highway product manager for Mack**

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### Looking forward

Going forward, ergonomists will continue working with digital human modeling and look at things like dynamic driver posture, driver distraction and driver health as it relates to cab design.

While Bowman could not divulge specifics about what Mack is working on in the area of ergonomics, he did say, "We have the tools and processes in place to consider all the ergonomic impacts of the vehicle and we can pull from global resources to help with the design of our vehicles."

One of the most talked-about topics is the near future of autonomous commercial vehicles. Platooning, where multiple trucks travel in a road train led by one vehicle via wireless communication, will have driver implications centered around in-cab controls and information displays.

Bowman says there is ongoing research about how to keep the driver engaged as more aspects of driving become automated.

"The role of the ergonomist is going to continue to grow as we move forward, especially with the introduction of platooning and automation. We will have to work on making sure the driver stays alert and aware of what is happening around him so he can take control of the vehicle if he needs to." ■



## Test drive

Backing a Mack<sup>®</sup> Granite<sup>®</sup> with 70,000-pound load uphill no problem with new 14-speed *mDRIVE*<sup>™</sup> HD AMT

By Tom Jackson

Reprinted with permission  
from *EquipmentWorld.com*,  
September 2016

**T**he nasty weather provided a good test for the tractive abilities of the new AMTs during a ride and drive held at Mack's proving grounds in Allentown, Pennsylvania.

I learned how to drive on a stick shift. I like driving with a stick.

But not in a Class 8 truck, which is where I found myself standing on the brakes of a Mack<sup>®</sup> Granite<sup>®</sup> dump truck, nose pointed downhill, holding 70,000 pounds of gravel against the law of gravity. My job was to put the truck in reverse and back up the hill.

Nervous? No; but attentive, yes.

Did I mention it had been raining all morning?

Fortunately, this truck had Mack's new

*mDRIVE*<sup>™</sup> HD 14-speed automated manual transmission (AMT), which was the point of the whole demonstration.

In the passenger seat beside me Tim Wrinkle, construction product manager for Mack, talked me through the procedure: Push "R" on the dash. Select the extra low gear with a few taps on the +/- button. Let off the brake. Give it some gas (diesel in this case).

With only these four things to remember, I did as told and — almost like a miracle — we levitated back up the hill in reverse and across a patch of soft gravel at the top. No problem.

Carrying a fully loaded Class 8 dump truck backwards up a hill isn't the kind of application you'll see often at any jobsite. But the

ease with which I was able to accomplish the maneuver proved the point Mack was making — that with an AMT you can put a novice or inexperienced driver in a truck and still get good productivity and performance. This is especially true in difficult conditions.

Highway haulers only have to contend with pavement, wet or dry, but vocational trucks are faced with mud, soft ground, uncompacted gravel, steep hills and uneven terrain. Driving a manual transmission in these conditions requires the kind of experience that's becoming increasingly hard to find as older drivers retire. With the AMT, the driver simply pushes a button on the dash and the truck's electronics and sensors choose the best gear for the situation.

# ON EQUIPMENT



A 70,000-pound load buries our Mack Granite almost up to the rims in loose gravel, yet the AMT pulled through it without hesitation.

Mack announced earlier this year that the *mDRIVE* HD 13-speed AMT now comes standard on 2017 Mack Granite, Pinnacle and Titan models. The *mDRIVE* HD 14-speed tranny in the truck I drove offers an overdrive configuration and adds a second ultra-low-speed reduction gear for applications such as curb pours for concrete trucks and heavy-haul maneuvering.

Low-reduction creeper gears and multi-speed reverse gears are enabled by a short extension on the front of the transmission case

and help move the trucks they are in from a standing start on steep grades or when carrying heavy loads. The two new transmissions are relatively unobtrusive, adding only five inches and 90 pounds to the driveline.

From a standing start the new AMTs will hold you for three seconds as you step off the brake pedal and onto the accelerator.

My test truck had a 445-horsepower engine putting out 1,860 foot-pounds of torque moving a GVRW of 69,850 pounds. But all that capacity does you no good if you're spinning

Visit <http://tinyurl.com/juo9tyn> to watch the *Equipment World* video.

the tires, rowing around for the right gear or sinking into the mud; and that's exactly the scenario Mack *mDRIVE* is designed to defeat.

The short track for this ride came with steep hills, a mud pit, two different gravel pits (large and small aggregate sizes), and a few other obstacles; in short: every challenging situation a vocational truck is likely to encounter. Yet a half dozen times around the course I never had to do anything more complicated than tap the R-N-D buttons, steer and gently work the accelerator pedal. Never once did I get that we-are-about-to-get-stuck feeling in the pit of my stomach.

A 70,000-pound load buries our Mack Granite almost up to the rims in loose gravel, yet the AMT pulled through it without hesitation.

Currently, automatic transmissions claim only about 20 percent of the market share in heavy-duty vocational trucks. But most manufacturers say that figure will grow due to the driver shortage and the ease with which the automated models can be driven. And it may be hard to prove, but it is reasonable to conclude that automated transmissions improve safety. A driver with fewer distractions is a safer driver. ■

## What customers say about the *mDRIVE*

**I**n late September, Mack Trucks and its dealers invited several dozen customers and prospects to the Mack Customer Center in Allentown to test drive Mack's new 2017 MP® engines and the *mDRIVE*™ HD with creeper gears in the same conditions as the *Equipment World* test drive. They then gave Mack their impressions of the experience.

**I wanted to experience** *mDRIVE*'s adaptability (vs. manual and automatics). We have heavy-haul tractors, dump trucks, straight trucks and tractors for our side dumps.

I think it could be a very versatile tool in our arsenal when we go to upgrade some more trucks.

We do a lot of site work that has deep mud, poor haul roads, and the ability to maintain control in a lower slower gear and not damage anything would be great.

The ability for it to maintain control and basically drive itself – that was great.

What we found (in terms of integration) was to have everything under one roof, to be able to get maintenance on, would be great.

**Curt Smith, McAninch Corp., Des Moines, Iowa**

**It's been a while** since I've been in a Mack, and I didn't know what to expect honestly. But I'm very impressed with what I have seen. I like the powertrain.

I like the integration of the powertrain. The *mDRIVE* is an awesome transmission. I'm a big promoter of automated transmission vs. manual transmissions, just because of the fuel economy and the integration between the engine and the transmission.

**Ricky Cole,  
Taylor Transport,  
Cartersville, Georgia**

**I was really impressed** with the transmission, the way that it adapts to your conditions, whether you need to use all the gears or it skips gears. A great point of the truck itself was the *mDRIVE*.

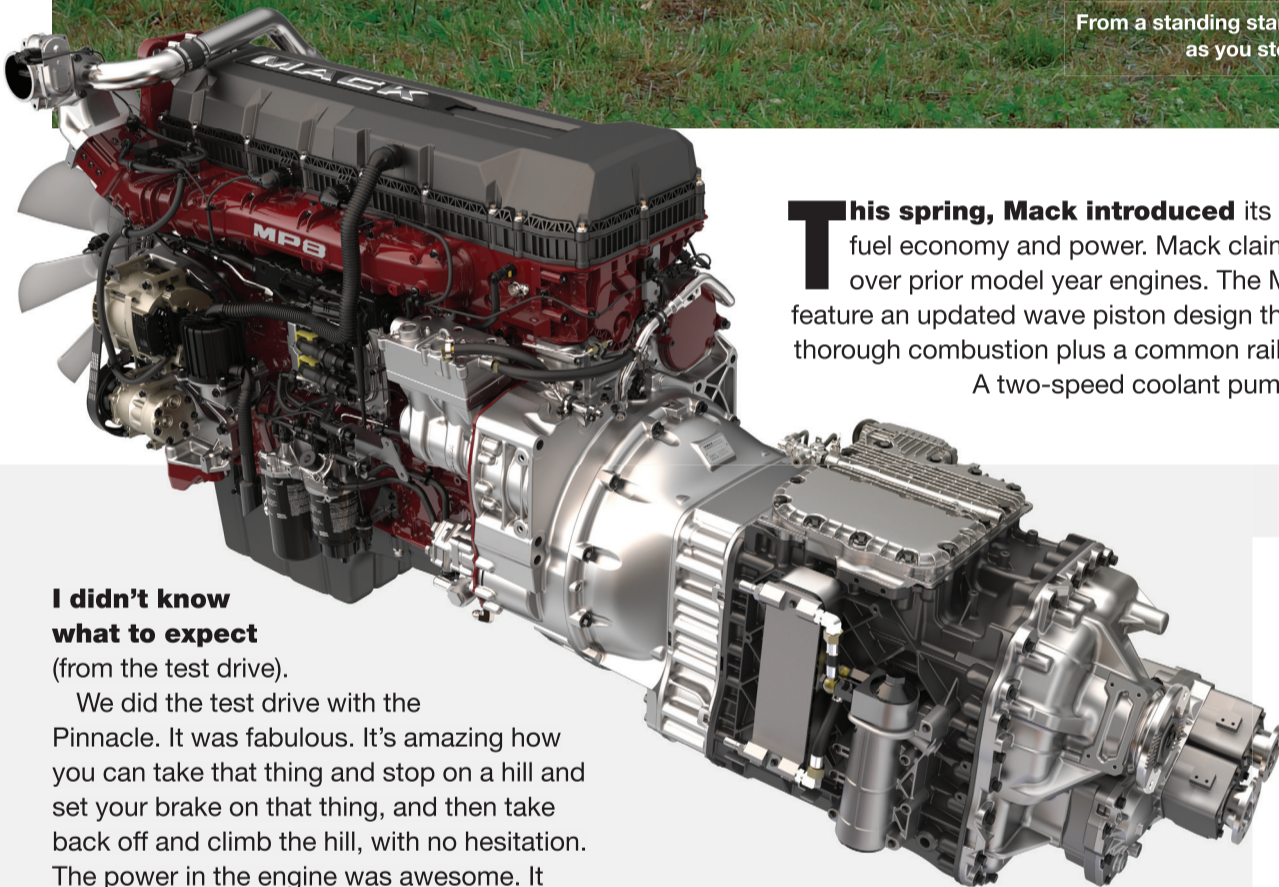
I think it helps with the drivers. You have so many unqualified drivers and this makes it pretty much idiot-proof.

**Keith Pound, Central Valley Transport,  
Bakersfield, California**



From a standing start the new AMTs will hold you for three seconds as you step off the brake pedal and onto the accelerator.

**T**his spring, Mack introduced its 2017 engine lineup with improvements in fuel economy and power. Mack claims fuel efficiency gains of 2.1 to 8.8 percent over prior model year engines. The MP7 11-liter and MP8 13-liter engines feature an updated wave piston design that boosts the compression ratio for more thorough combustion plus a common rail fuel system for more precise fuel injection. A two-speed coolant pump also aids fuel efficiency.



**I didn't know what to expect**

(from the test drive).

We did the test drive with the Pinnacle. It was fabulous. It's amazing how you can take that thing and stop on a hill and set your brake on that thing, and then take back off and climb the hill, with no hesitation. The power in the engine was awesome. It had good take-off power, very smooth in shifting, and then the (engine brake) on that thing is awesome.

I did get two of the *mDRIVE*s in my Pinnacles, and I want to get them in my dump trucks and my transfer trucks.

**Ron Bowman, Kelley Trucking, Bakersfield, California**

**I am very impressed.** I think you have to drive it to appreciate what Mack has done with that truck.

Landfill application is very rough, very hilly, and I think it would be more practical to use (*mDRIVE HD*) in that application.

**Mike Stillwell, Gibson Co. Solid Waste, Princeton, Indiana**

**The *mDRIVE HD* with creeper gears**

is the reason I'm here today. As I update the fleet, I'm going to roll over to the *mDRIVE* completely (from automatics).

(The test drive) showed me everything I wanted the answers to.

**David Tesone, Tesone Transport, Pittsburg**

**The *mDRIVE* is easy to operate.** Saves drivers from wearing out clutches and not tearing out rear ends. Probably less damage to the trucks.

Less maintenance and the drivers are able to focus on the roads.

**Steven Meyers, H&H Concrete on Demand, Ft. Worth**

**I really like the creeper gears.**

Whether you're backing up or whether you're heading up the hill, it's just an amazing improvement.

I'm familiar with the *mDRIVE* and the Mack 505 motor. We've run the MP8 505 motor, and it's a good engine. It's just a good experience, lots of power, pulls well, shifts well, it's just a good truck.

The thing I'm most excited about is continuing to grow our fleet with new trucks, with more *mDRIVE*s and getting rid of our standard (manual) transmissions.

Having the ability of taking a fair-to-OK driver and putting him in with the new transmission and you can make that guy a really good driver. He's able to focus more on the road and what's going on around him, and less about shifting the truck. It's less wear and tear on the truck and it's just a no-brainer when it comes to picking a transmission with that truck.

**Andrew Skipper, O&B Tank Co., Texas**

AT WORK

# Concrete results

Mack<sup>®</sup> trucks power  
Brundage-Bone Concrete  
Pumping to deliver high-profile  
construction projects safely  
and on schedule.

By Olivia Grider





Paul Hartley

# AT WORK



“One of the reasons we use Mack trucks is to maximize utilization. Being able to get our trucks on the road daily is important to us, and Mack has done a very good job of supporting us in doing that.”

**Bruce Young, president and CEO,  
Brundage-Bone Concrete Pumping**

courtesy Brundage-Bone Concrete Pumping

**W**hen Bruce Young started out as a concrete-pump operator at age 20, he had no idea he would become CEO for the world's largest concrete-pumping company.

After two years as a pump operator, Young launched his own business, which Brundage-Bone Concrete Pumping later purchased. He worked his way up the larger company — from equipment operator to branch manager to national operations manager and chief operating officer — to become president and CEO. While his job evolved significantly, one thing remained constant: The concrete pumps he worked with and purchased were almost always installed on Mack® trucks.

Throughout the concrete-pumping industry, approximately 86 percent of truck-mounted concrete pumps are paired with Mack chassis, and for good reason.

“Mack caters to the construction industry, and particularly to the concrete-pumping industry, better than other manufacturers,” Young says.

Uptime is a high priority in almost every transportation and vocational application, but its importance in the world of concrete pumping can't be overstated.

## When downtime isn't an option

A concrete pump is necessary when concrete needs to be poured in places a ready-mix truck can't access. High-rise buildings, stadiums and bridges are common examples, and Brundage-Bone takes on these projects and

more in the three markets it serves: commercial, infrastructure and residential.

Ready-mix trucks pour concrete into the hopper of the pump (typically powered by the truck engine), which pushes it through a placement boom to the area where it's needed, up to 210 feet away. In addition to solving the access problem, placing concrete with a pump is faster, safer and requires less labor, Young says. If a concrete pump fails or can't make it to the jobsite as scheduled, the entire project and site plan is thrown into disarray.

“You could be on a jobsite with 20 ready-mix trucks waiting to deliver concrete to a pump,” says Travis Timmerman, a Mack vocational sales fleet manager who works primarily with the concrete-placement industry. “In that moment, it is absolutely crucial that the pump perform. If our truck breaks down, it can jeopardize the entire project.”

Many jobs require a constant pour, meaning concrete must be supplied with limited interruption. “It is imperative that our trucks live up to the customer's expectations and the demands of the project,” Timmerman says. “Our customers cannot afford to have a concrete pump break down in the middle of a pour, and that is why we have invested so heavily in uptime solutions tailored to the concrete-pump industry.”

This level of understanding is unique to Mack Trucks, Young says, and the company's

commitment to customer uptime is one of the main reasons Mack chassis comprise 99 percent of Brundage-Bone's fleet of more than 500 vehicles. Brundage-Bone has tried other brands, Young says, and has always returned to Mack.

No other manufacturer has a dedicated service and support group for the concrete-pumping industry. A support hotline manned by professionals with extensive knowledge of the concrete-pumping industry and its equipment is available to customers 24 hours a day. Members of the support team have direct contact with concrete-pump manufacturers and installers, and dealer service centers. The concrete-pumping support line operates through Mack's OneCall™ system, with cases involving concrete-pump trucks routed to the dedicated support group.

The team also is integrated with Mack's GuardDog® Connect telematics network, which can detect issues and potential problems in all Mack trucks and instantly report them to support staff and repair centers — often before the operator even knows something's wrong. “With our GuardDog Connect System, we're constantly monitoring the truck's health to proactively identify fault codes that could result in a downtime event,” Timmerman says. “Through the monitoring of these trucks, we are staying one step ahead of a potential issue, minimizing downtime and increasing our customer's overall productivity.”

While the concrete-pumping support group, GuardDog and the OneCall system function on a national level, they share information and action plans with dealers throughout the country, creating a seamless experience for

# High-profile projects



**Y**ou might not be familiar with Brundage-Bone Concrete Pumping's name, but chances are you know the company's work.

It has helped build major sports stadiums, including AT&T Stadium (formerly Cowboys Stadium) in Dallas, Pepsi Center in Denver, Sports Authority Field at Mile High (home of the Denver Broncos), Safeco Field (where the Seattle Mariners play) and CenturyLink Field (home of the Seattle Seahawks).

Brundage-Bone has been instrumental in building many high-rise structures, including offices for Microsoft and Amazon in Seattle, Metropolis in Los Angeles and the Gaylord Hotel in Denver. "You can go to any city in the regions where Brundage-Bone operates, and we do a strong majority of the commercial work in those cities," says Bruce Young, president and chief executive of Brundage-Bone Concrete Pumping.

The company also tackles large infrastructure jobs, particularly bridges. It has worked on the Interstate 85/385 interchange project in Greenville, South Carolina, and the U.S. 183 South project outside Austin, Texas.



photos courtesy Brundage-Bone Concrete Pumping

customers like Brundage-Bone that operate in multiple regions.

## Birth of an industry leader

Brundage-Bone Concrete Pumping got its start in 1983 when Jack Brundage, who owned a concrete-pumping company in Hawaii, and Dale Bone, a sales representative for a concrete-pump manufacturer, founded the company in Denver, where it is still headquartered. The firm has grown, primarily through acquisitions, into most Western, Southeastern and Midwest states. It currently operates in 20 states and employs 750 people.

In 2003, members of Brundage-Bone

management started a concrete-recycling business called Eco-Pan. The company provides general contractors and concrete contractors with containers for the concrete waste that is cleaned out of ready-mix trucks and concrete pumps. This material is an environmental concern on construction sites. Eco-Pan containers have sealable lids, and the company hauls the containers to recycling facilities, where the dried material is crushed so it can be used as road base or backfill.

In August of 2014, Peninsula Pacific Strategic Partners, a private-equity firm, acquired both Brundage-Bone and Eco-Pan.

"Brundage-Bone is definitely one of the most innovative companies in this industry,"

Timmerman says. "They do a very good job of promoting the betterment and education of the industry. They are a forward-thinking group with core values that would be desirable in any large corporation."

## National programs, local support

Brundage-Bone works with about 50 Mack dealerships, a situation that could require managers to spend a lot of time communicating needs, goals and warranty information, but Young says this isn't necessary. Mack's sales, support and maintenance programs for

# AT WORK

the concrete-pumping industry are managed nationally, with Mack keeping all its dealers on the same page.

“Mack corporate sets a program for us that sets standards for how we work with local dealers,” Young says. “Our industry really needs national programs so truck manufacturers can work with local dealers to make sure we’re taken care of. And that’s what Mack does better than anyone.”

Mack strives to deliver a consistent product to the concrete-pumping industry through its sales relationships and dedicated support staff, Timmerman says. “Also, anytime a truck is in a service shop, we have the same resources available to any dealer — large or small, West Coast or East, North or South. They’re getting the same direction and contact from our Uptime Center through the concrete-pump support group,” he says.

## Custom design and engineering

These cohesive programs are in place from the beginning of the vehicle lifecycle.

Mack’s national team works with Brundage-Bone and major concrete-pump manufacturers to custom design each truck. Most of Brundage-Bone’s 450 concrete-pumpers are Mack TerraPro® cabovers, a design that meets needs for compactness on the jobsite and maximizes pump-boom reach. Brundage-Bone specs the trucks with three-to seven-axle configurations, based on the weight of the concrete pump.

Because Brundage-Bone trucks move around the country as markets ebb and flow, all trucks are configured to meet the most stringent weight laws and to operate in the coldest climates, Young says. This allows them to work in every region.

“Our trucks are extremely heavy, up to 130,000 pounds,” Young says. “We need a manufacturer who will work with us to design



courtesy Brundage-Bone Concrete Pumping

**Brundage-Bone Concrete Pumping started a concrete-recycling business called Eco-Pan in 2003. The company delivers containers for concrete waste to construction sites, then transports filled containers to recycling facilities where the material is turned into road base and backfill.**

trucks that will meet the demands of the construction site and also allow us to legally carry our loads on Interstates and highways.”

The Eco-Pan business runs about 60 Mack Granite® flatbeds with knuckle booms. Mack worked with the company to engineer a truck that maximizes payload. “The more containers we can put on a truck per trip, the more efficient we are, so designing the truck for the maximum amount of containers is important to us,” Young says. “And it’s important that we comply with state and federal weight laws. It comes down to putting the right axles at the right places and spreading weight over longer lengths.”

Mack is working to design a truck that even better fits Eco-Pan’s needs. Brundage-Bone representatives recently visited Mack’s Lehigh Valley operations in Pennsylvania to test drive trucks with the new *mDRIVE*™ HD 14-speed transmission.

A slower reverse-speed gear would help Eco-Pan trucks move in and out of jobsites, and the *mDRIVE* HD provides that with its multispeed reverse gears. It also offers weight and cost savings compared to an automatic transmission, and an automated manual transmission would help the

company recruit and retain drivers. “The *mDRIVE* HD gives you the functionality of an automatic transmission at a fraction of the cost,” Timmerman says.

Young says repair costs are lower as well, and Brundage-Bone plans to purchase more trucks with *mDRIVE* HD transmissions.

## Common purposes

Brundage-Bone’s mission is to provide premium concrete-pumping services to its customers, and safety is the company’s top priority.

Young says Mack supports both areas. “Mack helps us fulfill our commitment in allowing us to have quality equipment that we get high utilization out of with minimal downtime,” he says.

In addition to building construction-duty trucks that meet weight requirements, Mack engineers its vehicles to have excellent braking power, turning radiuses and other safety features, Young continues. “In the construction industry, there’s always high awareness of safety on the jobsite, and we’re very aware of the hazards of driving up and down the road with heavy machinery,” he says. ■

# Three decades with Mack trucks

**Mack and other heavy-duty trucks** have changed a lot in the past 35 years, and Bruce Young, president and chief executive of Brundage-Bone Concrete Pumping, has witnessed the transformation as both an operator and manager.

“I’ve certainly seen the evolution of the Mack truck since I started in this business in 1980, and it’s been remarkable,” Young says. “When I started, the truck I ran had 235 hp. Now we have trucks that have over 500 hp. The axle designs went from three-axle trucks to seven-axle trucks. We’ve gone from single-steer axles to tri-steer axles.”

Cabs are much more comfortable, he says, and new suspensions provide a smoother ride. When Young started driving, his truck had a 5-speed. “Now we have as many as 18 gears to make it more efficient for drivers to drive through mountains and city conditions.”

Today’s Mack trucks are environmentally friendly as well, Young adds. “The emissions on the new Macks are amazing,” he says. “You can stand right next to one and you can’t smell any exhaust.”

Despite the changes, Young says the most important things have stayed the same: the durability of the Mack truck and the reliability of the Mack engine and drivetrain.



# LEAN. MEAN. ON-TIME MACHINE.



## Trim the fat and up the ante with the Mack® Pinnacle™ DayCab for bulk hauling.

Delivering the goods on time every time requires reliability, efficiency and adaptability in a lightweight package. That's why we offer our 2017 MP®7 engine that drops 51 lbs. and burns up to 5% less fuel, a 6x2 liftable pusher axle that weighs up to 400 lbs. less than a full 6x4 package, and lightweight and durable components like aluminum wheels and crossmembers. Because saving weight means more payload per trip and a bigger number on the bottom line. [MackTrucks.com](http://MackTrucks.com)



**BORN READY.**



## Taking telematics to the next level

By Carolyn Magner Mason

**I**ntegrated telematics gives fleet managers a wealth of information they can apply toward improving road safety and monitoring driver performance and behavior while increasing productivity. Mack's GuardDog® Connect technology is fully integrated with software platforms that connect, collect, categorize and capture vital information such as GPS location, road speed and idle duration, and provides in-depth analysis of driver performance based on past and current data and location. Bulldog magazine sat down with Conal Deedy, director, connected vehicle services for Mack Trucks. Deedy says the decision to equip Mack® trucks with GuardDog Connect hardware set the stage for the plethora of cutting-edge diagnostic and management tools for increased safety and productivity.

### **How does GuardDog Connect enable your solution technology?**

GuardDog Connect is the foundation of our connected truck. We designed and embedded the hardware into the truck. Now, we can partner with elite software companies who can collect and deliver data for our customers to operate safely while optimizing productivity. We have also set the foundation for future technology that will easily connect with our trucks.

### **How does your partnered services strategy assist your customers' operations?**

We have a number of partners on board and more to follow. This gives our customers plenty of options to choose solutions that work seamlessly with their equipment.

Instead of having to add hardware to connect, they save on the cost, downtime and hassle of installation.

### **How do you choose your partners?**

We are focused on best-in-class solutions that will help our customers. We look for ways to help them manage compliance with new regulations, operate more efficiently and always with the emphasis on uptime. The data really helps our customers understand how their drivers perform and we are always listening to customers to find out what their exact needs are.

### **Where do the dealers fit in?**

We consider it a huge advantage that we have strong dealer support with each of our partners. Our dealers are talking with

customers about partner solutions for managing their drivers and their business. We have support from these third parties and can show how valuable the solutions can be for their business. And now, with Certified Uptime Centers, dealers are able to take the information from the vehicle and help guide the customer to a more informed decision on length of repair with short repairs quickly addressed in the dedicated uptime bay.

#### **What future trends do you see?**

I think there will be focus on how to optimize maintenance for performance as well as for equipment resale. Using connectivity, we will have the opportunity to write specific maintenance solutions that are maximized per truck. No truck operations are the same and they will get custom prescriptions for repairs and maintenance.

#### **What do you think about data overload? Can fleets keep up with all the information?**

There is absolutely an overload of information but because of the creative, innovative management systems available and in production, savvy fleets are able to maximize the usefulness of information. That's why we are taking it to the next level so there is 'operational data,' that helps with compliance and the individual customer productivity.

#### **What are some of the cool features that can offer actionable data?**

We are really excited about all of the new possibilities and feel like we are at the tip of the iceberg with the features and management potential. Mack has the ability to filter and understand what's going on for our customers who have their own filters to set up their management services. They want to know what their trucks are doing at all times. We can see how many hard brake applications a truck receives or if someone is dropping a gear (to avoid speed limiters). We can deliver longitude/latitude speed and can put an electronic/invisible 'geofence' around certain landmarks and this data can help with detention time. When we do repairs, we can geofence our dealers, and are able to follow up with our OneCall Center to find out how long it should take and send an alert to notify our OneCall crew.

#### **Any last words to share with us?**

It's clear that we want to continue our leading position in the industry as we find ways to focus on uptime, enabling customer service and building a better truck. It's important to note that telematics doesn't do it alone. It's the integration between Mack, the data, the solutions partners and the customer that is so groundbreaking. I still have a sense of awe about how it all works together and how we can deliver data into their cloud and they can send back actionable information to our customers. The future is truly unlimited. ■



## **Best in class**

### **How Mack integrates GuardDog Connect with select partners for optimal fleet management services**

**L** launched in 2014, Mack Fleet Management Services connects proprietary data from Mack's fully integrated telematics hardware with third-party solutions to help customers effectively and efficiently manage their operations. Mack's GuardDog® Connect telematics solution serves as the enabling platform for Mack Fleet Management Services, eliminating the need for aftermarket hardware purchases and installation costs.

As Mack emphasizes the importance of offering comprehensive solutions for its customers, it values the partnerships with various telematics services, outlined below.



#### **TELOGIS**

Telogis is a full-service navigation and compliance solution for fleets. Using Mack GuardDog Connect, it analyzes data including driver and vehicle performance history from each vehicle and turns it into actionable information. Telogis Fleet is a comprehensive, scalable fleet management solution that can be activated via computer, smartphone or tablet. It provides real-time visibility into the vehicle and driver performance. Customers can view critical information for all the trucks in their fleets — whether all-Mack or mixed — on one dashboard to help run their fleets more safely and efficiently.



#### **WHERE'S MY CONCRETE**

The addition of WheresMyConcrete to Mack's fleet management offerings has helped improve asset visibility and dispatch efficiency for concrete mixer fleets. WheresMyConcrete provides real-time data for concrete mixer fleet dispatchers, improving transparency and service to customers, as well as providing critical analytics designed to help improve operations.



#### **GEOTAB**

A leading global provider of end-to-end telematics technology, Geotab enables connectivity for older Mack vehicles not currently equipped with GuardDog Connect so that they can use Mack telematics technology. Geotab offers intuitive solutions to help businesses better manage their drivers and vehicles by extracting accurate and actionable intelligence. Using this business intelligence and benchmarking data, fleets can improve productivity, reduce fuel consumption, enhance driver safety and achieve stronger compliance to regulatory channels.



#### **OMNITRACS**

Omnitracs provides real-time GPS location information and reports driver performance data by gathering information such as relative road speed and idling duration and cost. Using that data and GPS information, the system draws conclusions about driver performance, and it will immediately alert customers through email or text message if any issues arise.

# AT WORK



## Rugged trucks come in many colors

### A rainbow of Granite powers KR Trucking

Story and photos by Carmen K. Sisson

**KR** Trucking's Mack fleet is the talk of Tennessee, and it's easy to see why. Owner Keith Radford's 16 Mack® Granite® dump trucks are some of the cleanest — and most colorful — trucks on the road. Every truck is a different color, prompting frequent comparisons to Skittles candy. But beneath the sweet exteriors, it's all business, providing the strength Radford needs for clay mining and the durability he has come to expect from the Mack brand.

He shakes his head in amazement when he

thinks of how his company has grown. He started out in 1988 with a \$600 single axle dump truck, later adding a \$1,000 loader and a \$300 trailer. He initially planned to sell dirt and gravel to homeowners in Gleason, Tennessee, and then expanded into working with his father in the ready-mix concrete business. But God had bigger plans, Radford says.

In 1992, the father and son left the concrete business and turned to mining the rich deposits of kaolin and ball clay in Weakley, Henry and Carroll counties. Today, KR

Trucking has 29 trucks and 38 employees, and though Radford attributes his success to God, he considers Mack to be a crucial partner in the success equation.

It took him a while to make the switch. He visited the sales department at his local Mack dealership, Tri-State Truck Center in Jackson, but was undecided. The decision was made when a brand new truck, from another manufacturer, was unable to handle the rigors of daily operations in the clay mines. He called Tri-State and, with the help of Mack Financial Services, he began building a new, more reliable fleet.

KR Trucking uses a mixture of axle forward Granites with the 11-liter MP®7 405 hp engine and 13-liter MP8 445 hp engine, *mDRIVE™* transmissions and *mRIDE™* suspensions. Radford favors a 20-foot dump body over the





Keith Radford talks with Jackie Bell, general manager of Tri-State Truck Center

KR Trucking, which mines both kaolin and ball clay, uses primarily Mack Granites in its fleet.

standard 16-foot. His favorite — and most recent — Granite acquisitions are a pair of quads, one in pink and one in baby blue.

The Granites are perfect for the harsh environments in the clay and gravel pits.

“It’s slick when it rains here, like driving on ice,” Radford says. “We can get in and out better with Macks. I’m satisfied, from the Mack Financial side to the service side at the dealership.”

Radford tried out the *mDRIVE* at a truck show last year and was impressed enough to make the switch from another manufacturer. He was even more pleased when he saw the fuel savings. Before the *mDRIVE*, he was lucky to get 4.5 mpg. Now, the lighter, more fuel efficient Granites are netting 6 mpg, saving an estimated \$3,500 per unit per year. And thanks to a close working relationship

with Tri-State Truck Center, he has enjoyed a significant increase in uptime.

“With heavy equipment, those trucks can’t be held up, we have to get them out,” says Jackie Bell, general manager at Tri-State. “We send a technician to his place and get him back on the road as fast as possible. Our motto is to become an extension of the customer’s business. When KR Trucking has a problem, then we have a problem, and we don’t stop until our problems are solved.”

That’s a trait appreciated by

Radford, who treats his customers with the same care and respect, whether they are large corporations or small local businesses.

He wakes at 4:30 a.m. and returns home between 6-7 p.m. The days are long, but Radford is committed to seeing his company grow and leaving a legacy for his children. The

average day finds him in the field working alongside his crew. He is quick to praise his employees and offer thanks for all he has been given.

“I owe it all to the Lord,” Radford says. “He has blessed KR Trucking, and I love what I do.” ■

**“It’s slick when it rains here, like driving on ice. We can get in and out better with Macks.”**

**Keith Radford, owner KR Trucking**

AT WORK

# Green Machines



Rugged Mack<sup>®</sup> trucks power Winters Bros. Waste and Recycling

Story by Carmen K. Sisson  
Photos provided by Winters Bros.

Sean and Joe Winters think they have the cleanest and best looking trucks in the waste and recycling business.



**N**early three decades ago, two young men posed for a picture together, both beaming as they stood in front of a gleaming 1987 Mack® RD model. Sean Winters, 21, had just bought his first garbage truck, continuing the family legacy that began in the 1950s. Jimmy Brown, 25, was a salesman at Gabrielli Truck Sales in Long Island, New York, and that first truck was just one of many Mack models he has since sold to Winters.

Partnerships like the one between Gabrielli and Mack Trucks are the foundation of Winters Bros. Waste and Recycling, Winters says. And their bond continues today.

Sean and his four brothers grew up in the waste removal industry, accompanying their father on his four Long Island routes while their mother managed the books.

Acquisitions led to growth until finally, in 1998, Sean Winters and his brothers — Joe, Jimmy, Michael and Andrew — founded Winters Bros., a full-service waste and recycling company that now serves approximately 200,000 customers in New York and Connecticut. They maintain a fleet of more than 200 trucks, three-quarters of which are Mack. The average age of the equipment is six years. Last year, Winters purchased 17 new Mack TerraPro® and Granite® models, and will repeat the order in 2017.

“My father used many trucks over the years, but he always had Macks,” Winters says. “We like the Mack Trucks product because of their dependability and the availability of parts. They’re heavy-duty trucks.”



# AT WORK

That durability is important in the waste industry, where roll-off containers sometimes require off-road driving at construction sites and new housing developments.

“Our Macks are spec’d for heavy hauling,” Winters says. “Mack trucks hold up best for us.”

Winters operates Mack TerraPro front-end loaders with MP®7 engines, spec’d with 345 hp and 1,250 lb.-ft of torque. Their Granites are spec’d with MP8 engines at 425 hp and 1,540 lb.-ft., which works especially well in their Connecticut operations with hillier terrain than Long Island. They transfer garbage and recycling waste to landfills with Mack Pinnacle™ models spec’d with MP8 engines with 505 hp and 1,760 lb.-ft. The fleet has a couple of spec differences for their different locations, such as a heavier rear end for their Long Island TerraPro front end loaders and Granite rollofs – 58,000 pounds instead of the 46,000-pound-capacity rears they use for their equipment in Connecticut.

“They like the ruggedness and toughness, because they last longer and they take the pounding on the tough city streets,” Brown says.

Safety and maneuverability are also important, especially for the front-end loaders.

“The big windshield in the front is great, the back window is clear and the visibility is exceptional for the surroundings,” Winters says. “Mack is right up there in maneuverability. They are in tight spots all day long, and the 210-inch wheelbase allows them to get into those tight places.”

The industry has changed through the years, and the trucks have evolved as well. Today, more customers desire environmentally friendly lifestyles, and more municipalities seek waste solutions that embrace clean air initiatives.

Winters Bros. currently offers single-stream recycling, which handles the sorting for customers, and they are exploring the possibility of converting their trucks to compressed natural gas. Mack’s commitment to near-zero emissions helps Winters Bros. maintain a sustainable company while reducing their carbon emissions footprint.

“One of the things we enjoy is that the business is not static,” Winters says. “We’ve really embraced the technology that allows trucks to be cleaner and more efficient. Successful companies like ours are the companies that embrace the changes and use the technology to make

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“We’re all very proud of the work we do here. This isn’t the most glamorous business, but it’s a business that we’re proud of.”

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**Sean Winters**

their business, and they keep them looking nice.”

Recently, their Titan took home first-place trophies for Best Rolloff and People’s Choice at a truck show in Englishtown, New Jersey.

“When you mention Winters Bros. on Long



Sean Winters shakes hands with Mack salesman, Jimmy Brown.

Island, everybody knows who we are and what we do,” Winters says. “The first comment out of their mouths is, ‘I love your trucks.’ We’re walking away with trophies from these shows, and people say, ‘Those can’t be front-line trucks.’ But the reality is that the Friday before, they were picking up trash, and Monday, they’re going to be picking up trash. But on the weekends, the trucks win awards.”

advancements for the customers. We like to figure out new and better ways to do things.” Winters loved the industry as a child, and that passion for people and service continues today. But on the weekends, he can often be found at truck shows with his newest acquisition — a 2017 Titan by Mack model with a 525 hp MP10 engine and 1,860 lb.-ft., plus Mack’s premium Rawhide interior.

“We put a lot of time into our trucks to make sure they are the best-looking trucks around, because our name is on them, and we want to make sure we do everything right for the community,” he says.

Brown agrees. “The Titan is a pretty special Mack,” he says.

“Image is a big part of

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Many of the trucks are green and feature gold lettering and a shamrock design with an American flag and a cross. Every truck has the words “Mom” and “Dad” emblazoned on the front fenders and “In memory of Big Jim and Brigid, on the back to pay homage to the brothers’ parents and their humble beginnings.

Winters says his parents were always supportive of their five sons and believes they would be surprised to see how much the company has grown.

“We’re all very proud of the work we do here,” he says. “This isn’t the most glamorous business, but it’s a business that we’re proud of. Everybody here has a great attitude that’s focused on serving the customer, and we couldn’t do that without really good partners. Our partnership with Mack Trucks serves us well and serves our customers well. We’re honored to be part of an American institution.” ■



# Tradeshows and events schedule

Mack Granites will be on display in Las Vegas at the World of Concrete show Jan. 17-20.

## Follow Mack Trucks at trade shows and events throughout North America!

Dates	Show Name	Location
Jan. 17-20	World of Concrete	Las Vegas, NV
Jan. 26-29	American Truck Dealers	New Orleans, LA
Feb. 27-March 1	Technology & Maintenance Council (TMC)	Nashville, TN
March 7-11	ConExpo/Con-Agg	Las Vegas, NV
March 14-17	Work Truck Show	Indianapolis, IN
April 6-7	National Heavy Equipment Show	Toronto, ON
April 20-22	Expocam	Montreal, QC
April 30-May 2	National Private Truck Council (NPTC)	Cincinnati, OH
April 30-May 2	National Tank Truck Carriers (NTTC)	Chicago, IL
May 9-11	Waste Expo	New Orleans, LA
May 24-26	Expo Transport Providers	Monterrey, Mexico
June 9-10	Atlantic Truck Show	Moncton, NB
June 10-11	APNA	Abbotsford, BC
Sept. 25-28	North American Commercial Vehicle Show (NACV)	Atlanta, GA
Oct. 21-24	American Trucking Associations (ATA)	Orlando, FL
Oct. 25-26	Canadian Waste & Recycling	Niagara Falls, ON
Nov. 14-17	Expotransporte ANPACT	Guadalajara, Mexico



See what's new in the 2017 Mack LR at Waste Expo, May 9-11 in New Orleans.



There will be plenty of new Mack trucks to see at the new North American Commercial Vehicle Show in Atlanta, Georgia, Sept. 25-28.

# TAILLIGHTS



## Done. What's Next?

**W**hen you buy a Mack, you get more than a truck. You get a customized machine built for your specific needs. Mack trucks can handle any job you throw their way. So, you're never left wondering, you're focused on your next move.

If you love how your Mack helps you get

the job done, show us by sending in your truck photos.

Use the hashtag #DoneWhatsNext on Twitter or Instagram or go to our Facebook page and upload a photo and caption.

Here are some of the trucks featured on Mack's social media channels.



## Meet the Mack that keeps Alaskan runways free of ice

Granite featured on Science Channel

**A** 2015 Mack Granite truck with a monster de-icing machine was featured on a recent episode of the Science Channel's "Alaska Mega Machines."

Each arm on the Tyler mega de-icer is 50 feet long and shoots out more than 4,000 gallons of a rock salt type solution to keep the airport runways ice-free. Greg Morrison, with Mack's Anchorage dealer CMI, says they provide the Macks with de-icers at airports in Deadhorse, Fairbanks, Anchorage and Ketchikan.

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\*Bridgestone R283A Ecopia in size 295/75R22.5 load range G, compared to the equivalent size and load range of Bridgestone R283 Ecopia. Rolling resistance results obtained from third-party ISO 28580 testing. Wear results based on field testing in long haul fleet applications in the US and Canada. Actual results will vary depending on several factors such as tire size, operating conditions, maintenance, road conditions, and driving style.



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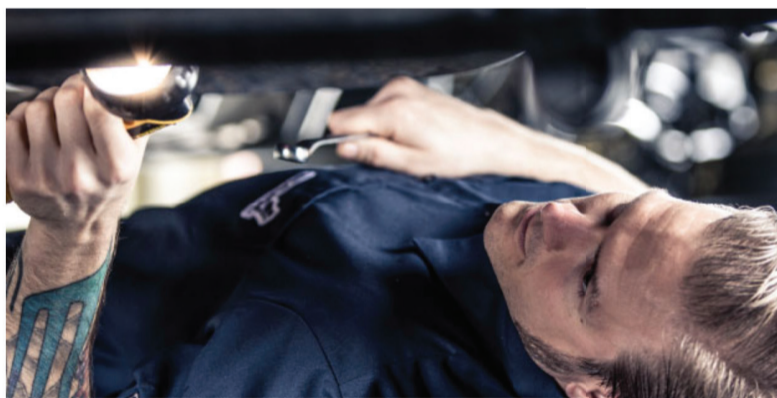
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Regular oil changes are probably the most important preventive maintenance (PM) check you can perform on your Mack® truck. That's because dirty oil can clog your engine, leading to reduced fuel efficiency, premature wear and unplanned downtime.

But it's not uncommon for fleets to let oil change intervals slide a little past OEM recommendations. Sometimes it's a conscious business decision to help stretch the budget, while other times, logistical challenges come into play. Either way, delaying a scheduled oil change

### Mack Blog

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