

# ***Evolving Trailer Technology***



V20•1



## **All-electric should mean 'all electric' even in refrigerated application**

Electrifying solutions with Johnson-AE refrigeration system

## **Making the smart trailer dream a reality**

Great Dane partners with digital innovation experts

# calendar of events

## MARCH

6-9

NTEA – The Work Truck Show, Indianapolis, IN

25-28

Truckload Carriers Association Annual Convention, Kissimmee, FL

27-29

PepsiCo Fleet Training Summit & Tradeshow, Dallas, TX

## APRIL

11-18

TRALA Annual Meeting, Scottsdale, AZ

18-19

Home Delivery WORLD, Atlanta, GA

18-21

TTMA, Santa Ana Pueblo, NM

29-May1

NPTC – National Private Truck Council, Cincinnati, OH

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## The Power of Electricity

Dear Customer,

The concept of electricity has fascinated human beings since even before Benjamin Franklin tempted fate and played with lightning. Though Franklin gets most of the credit for discovering electricity, scientists have found evidence showing that even ancient people thousands of years ago experimented with harnessing this natural force. Today, we are still discovering new ways to use electricity to make our lives easier. In this issue of *Evolving Trailer Technology*, read about some of the new ways the transportation industry is implementing electricity to improve fuel efficiency, reduce carbon emissions and more.

In this data-driven world, knowledge truly is power. With new technologies like trailer telematics, fleets can use data to make their operations more efficient and reduce maintenance costs. Great Dane is on the forefront of the smart trailer movement with its FleetPulse telematics system, and has recently partnered with digital innovation experts Inspire11 to help translate the data and analytics FleetPulse collects into a usable format for its customers. Read more about this exciting strategic partnership on page five.

The transportation industry today is developing new ways to harness the power of electricity from the top of vehicles to the bottom – literally. Engineers at eNow Solar Solutions have developed proprietary lightweight solar panels that are mounted to the top of trailers to capture sunlight and convert it to direct current (DC) electricity. This electricity can then be used to power things like refrigeration units, lift gates, safety lighting and more. Great Dane's all-electric refrigeration system, the Johnson-AE Series, utilizes cold plate technology and battery power to provide consistent BTU capacity for most refrigerated applications without the need to burn diesel to refrigerate. Finally, engineers at ConMet have designed an electric wheel hub that uses regenerative braking technology to capture the energy created when brakes are applied and uses that energy to supplement drive power.

This issue of *Evolving Trailer Technology* also includes the first article in a four-part series by Great Dane's partner Microban International that will more closely examine the microbiology of food transport and delivery equipment and reviews how to proactively maintain cleanliness on these surfaces. The first article examines the Food Safety Modernization Act (FSMA) and how to protect your trailer.

Finally, read the stories of three Great Dane customers and how they are utilizing the technologies and services that Great Dane offers to improve efficiency and maintain safe, reliable equipment.

From the lightbulb to smart phones to all-electric vehicles, electricity and the ways we use it continue to evolve. Great Dane has been evolving for over 100 years and will continue to progress and develop new ways to utilize the technologies of today and tomorrow to move its products and the transportation industry forward.

Best regards,

Brandie M. Fuller  
Vice President, Marketing  
Great Dane





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# Technology, Trends & Trailers

*It's all connected*



If you have a moment, try this quick little experiment: Turn off your computer monitor, take your desk phone off the hook and turn your cell phone, smart-watch and any other smart device to silent and put them out of sight. Now take a deep breath and sit for a minute.

## How do you feel?

Disconnected? A little anxious? Are your fingers drumming on your desk? Are you watching the clock waiting for the minute to be up? This is how entrenched technology is into every facet of our day. Right now, your trucks are out there on the road and something is happening – and you need to know about it.

Okay, you can turn your monitor on and check your phone.

While we focus on the alerts and notifications that tell us something is wrong with our trucks or trailers, there's an even more powerful feeling – knowing that everything is okay. There are no unplanned service alerts. Your trucks are moving along their way.

In the same way that instant communication and real time information has

woven its way into the fabric of our lives, data-driven technology solutions have integrated into tractors and trailers. While tractors have led the way with real-time telematics and remote diagnostics, trailers aren't far behind. In addition to location tracking capabilities, today's offerings take advantage of the latest technology to provide deeper trailer analytics.

Asset utilization is a huge opportunity to improve the efficiency of your business. Trailer telematics allows you to measure productivity and efficiency, enabling you to make more informed decisions about where your operation might need additional assets or where you have too many.

When your trailers are on the move, stop verification can confirm drops and pickups to ensure there are no unauthorized stops along the way, which could help identify possible theft situations. It can also help determine how long trailers dwell at customer locations.

Telematics are evolving to alert you to the status of your trailer – the load status, cargo weight, door security and more. For reefer applications, telematics

can report on the temperature inside the trailer in real time and send alerts if temperatures drop below or climb above pre-set thresholds.

Going even further, communication with your trailers will soon be a two-way street. Like the over-the-air (OTA) remote programming offered by today's diesel engine manufacturers, trailers will receive OTA updates, improving the software to offer a clearer picture of your trailers' operations. Business intelligence solutions will help you crunch the data, which can lead to predictive modeling. Knowing this information ahead of time can potentially allow you to avoid a costly unplanned service event by tweaking your preventative maintenance schedules.

Data-driven technologies are ushering trailers into a brave new world of productivity and efficiency. A trailer is more than a big white box; it's a solution and it's a cornerstone of your business. Trailer telematics has evolved, and it's time to start leveraging this technology to make your business more efficient, proactive and cost-effective. 🚛



# Programming the Perfect Partnership

*Great Dane seeks out the right partner to turn the 'smart trailer' dream into a reality*

Building the right product often means finding the right partnership. With more than 100 years of trailer-building experience and keen insight into the needs of their customers, Great Dane is well positioned to deliver reliable, efficient trailers that move your business forward. When it came time to infuse its trailers with the power of today's digital data-driven innovations, Great Dane turned to digital innovation experts, Inspire11, a full-service, digital and analytics consulting firm. The goal of the strategic partnership was to turn Great Dane's trailer product knowledge into actionable business intelligence through technical architecture, data management, application development and other developmental goals.

"Great Dane is a trailer manufacturer," said Dennis Skaradzinski, Great Dane chief engineer, highlighting the challenges Great Dane faced in bringing its smart trailer concept into the world. "Creating a smart trailer with sensors requires expertise with sensors and hardware – that was challenge one. Challenge two was data collection, telematics transmission to the cloud, parsing the data and presenting it in a usable format is a challenge beyond the scope and expertise of Great Dane resources. We knew what was required but did not know how to make that happen. Inspire11 does."

"Up to this point, trailers have lagged the truck in data collection and analytics, but what's interesting is that many end customers are primarily concerned about their cargo, which is transported and kept safe by the trailer. Additionally, while the truck is more expensive on a unit basis, many fleets have a trailer-to-truck ratio of at least two-to-one," said Brian Kim, Principal, Inspire11. "Clearly, the trailer is an incredibly important asset to customers, but had very minimal data being collected about it, and virtually no analytics. A smart trailer solution provides many unique data points that enable outsized benefits for its users."

The biggest smart trailer opportunities go beyond the obvious location application and include the ability to measure trailer weight to determine the cargo load status and improve trailer utilization rates for fleets. Having visibility into the trailer door opening and closing also gives fleets the ability to track the security of cargo.

"Giving accurate trailer mileage to customers allows for optimization of preventative maintenance schedules," Kim said. "Providing performance data on all the other trailer components, such as brakes, lights and wheels, further enables customers to lower their total cost of ownership while improving trailer uptime and on-time delivery."

Kim went on to explain that Inspire11 worked closely with Great Dane to understand customer demand, identify the competitive landscape and determine the potential benefits for both customers and Great Dane.

"Using feedback we consolidated from Great Dane and its customers, we designed a prototype to demonstrate the functionality," he said. "From there, we moved into actual development of the platform, starting with a flexible technology architecture that can handle many different types of data inputs and outputs."

The result is FleetPulse—a data-driven solution that uses proprietary information on trailer specifications and design to help you know when to perform maintenance. FleetPulse will be available for both web and mobile applications, and in addition, for customers who want data fed directly into their own systems, Inspire11 has developed the FleetPulse application programming interface (API) to do just this.

But FleetPulse is more than that. It's a beginning—the foundation upon which tomorrow's trailer telematics solutions will be built upon.

"As the smart trailer evolves more components suppliers will develop smart devices—and it is happening now," Skaradzinski said. "Adding those into the FleetPulse system will create more data for collection, for analysis and for predictive analytics. Inspire11 will assist Great Dane to move in that direction, helping our customers, our suppliers and Great Dane provide a service beyond just building trailers." 🍷



# Fortune Smiles Upon Those Who Drive

Equipment and business practices that focus on the driver move Fortune Transportation forward



**P**roductivity is about employing the right people as much as it is spec'ing the right equipment. Without a driver to haul freight, a trailer is just that—a trailer. But in the hands of a motivated driver who takes pride in his or her work, a trailer is the engine of profitability. That's why Fortune Transportation has focused on the driver, treating each one as a valued client, since its inception in 1980. Now in its second generation of family ownership after Don Olson passed the baton to Perry and Ben Olson, Fortune continues its driver-focused tradition.

"Happy drivers deliver more freight, good drivers do it correctly, and engaged drivers strive to learn and improve everyday they are on the road," said Perry Olson, chief executive officer and partner owner of Fortune Transportation. "Everyone else in our company recognizes that they are here to support those folks on the road everyday. Whether doing payroll, maintaining equipment or cleaning facilities, everyone is here to support our drivers."

That shines through when looking at Fortune's driver roster, which boasts 90 drivers with more than one million miles driven for the company. Two drivers have driven more than four million miles with Fortune. The entire fleet runs 22 million miles a year. Spec'ing and maintaining high-quality equipment plays a large role in keeping Fortune Transportation's drivers happy.

"Drivers come to us because they see our equipment on the road and they are attracted to great equipment that's well-maintained," Olson said. "It presents an image of how Fortune will take care of not only the driver's equipment, but also of drivers as human beings. And we also get phone calls from clients who see our equipment and are impressed with how they are maintained, and that nets us more business."

When it comes to its trailers, Fortune Transportation has forged a longstanding relationship with Great Dane thanks to Great Dane's durable, dependable trailer lineup.





## Company Profile

**Fortune Transportation**

**Headquarters: Windom, Minnesota**

**Founded: 1980**

**Business: Freight Hauler**

**Great Dane Equipment: Everest Reefers**

"We've been buying trailers from Great Dane for decades. It's a great product," said Curt Langstraat, Fortune Transportation maintenance director. "In 13 years, I don't recall a warranty claim on a Great Dane box. If we are repairing a trailer, it's probably because of an accident—it's not the fault of the equipment. Great Dane has a great service network, but if it ain't broke, there's no reason to fix it."

On the business side, Olson related that shippers are "beyond picky," demanding Fortune delivers a high-quality product with high-quality equipment, which is no small task in Fortune's food and beverage application. Fortune turns to Great Dane's Everest Single-Temp to help meet those demands.

"When a client opens up our trailer doors at a dock and they see 'Fortune' written on the inside of the trailer," Olson said, "we'll have a 98 percent acceptance rate at places that have a greater than 50 percent denial rate of equipment because they know that when they shut the Great Dane they aren't going to see light through those seals. Those seals are solid."

Fortune Transportation fields a fleet of 53-foot Everest Single-Temp trailers, featuring aluminum wheels and stainless steel rear impact guards to reduce trailer weight. To improve fuel efficiency and reduce

maintenance costs, Fortune uses Hendrickson's ULTRA-AK suspension with MAXX22T air disc brakes, TIREMAAX PRO tire inflation/deflation system and the HXL5 Ready-to-Roll wheel end system

Fortune's focus on excellence earned them ATA's President's Award for safety, one of ATA's highest honors.

So what specific practices helped Fortune Transportation reach that level of recognition? "I've asked that same question to a couple of our guys and it's always the same answer: 'All of them,'" Fortune Transportation's Safety Director Tony Scott said with a smile. "It's about building a safety culture, staying consistent with your message and the actions you take to support that message."

"It all comes back to who we hire," Olson said. "Then, laying the foundation of safe, smart decision-making during our orientation process. Those lessons are followed up with regular training and message reinforcement. The Presidential award is a reflection of our drivers' habits and allowing our operations personnel to make the right decision even if it is not the profitable decision. We learn from our decisions and strive to constantly improve." 🍎



# Why Waste Braking Energy When You Can Harness it?

*ConMet's electrified wheel end aims to put that power to work*

**E**lectrification goes beyond a truck's drivetrain. While purely electric trucks get most of the attention, electrified powertrain components offer real-world fuel savings in the near term. Take, for example, ConMet's innovative PreSet Plus Electric Hub™, an in-wheel electric drive system that aims to deliver a robust and efficient hybrid propulsion system designed for commercial trucks, tractors and trailers. The electric hub applies the power captured from its regenerative braking system directly to the wheels, allowing the hybrid system to lower the required torque on the engine and that results in fuel savings.

That's cool, but what exactly is regenerative braking? Regenerative braking uses the aforementioned electric drive system to capture the energy that is created when the brakes are applied—in today's braking system, that energy is wasted as heat—and uses that energy to supplement the drive power or to supply power to auxiliary systems, such as lift gates or refrigeration unit batteries. In the PreSet Plus Electric Hub application, drive power would be driven at the wheel end as opposed to utilizing the driveline. In addition to fuel savings, the PreSet Plus Electric Hub could also reduce carbon emissions and improve tire life by limiting uneven tire wear and drag.

The Electric Hub is built upon ConMet's PreSet Plus® foundation. Unveiled in 2012, the PreSet Plus provides an all-in-one solution, including an integrated spindle nut, precision bearing spacer, premium wheel seals and pre-adjusted bearings that are optimized to withstand demanding operating conditions. From there, the PreSet Plus Electric Hub utilizes regenerative braking to capture energy and requires no gearboxes, drive shafts or differentials allowing the system to integrate seamlessly with existing vehicle architectures. When compared to the current hybrid electrification offerings that reside in the powertrain or axle, ConMet said the in-wheel system reduces complexity, is lighter weight, and minimizes drivetrain losses.

ConMet is working with industry leaders, including Great Dane, to further development and testing for trailer applications. For more information and all future announcements visit [www.conmet.com/innovation](http://www.conmet.com/innovation).



**CON**  
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# FSMA Explained – How to Protect Your Trailer

*An examination of food safety concerns in the food transport industry*

Are you doing everything you can to make sure your customers comply with food safety regulations? The FDA Food Safety Modernization Act (FSMA) of 2011 is the most comprehensive reform of the United States' food safety laws in more than 70 years. FSMA was designed to ensure the safety of the U.S. food supply by shifting attention from contamination events response to prevention measures that protect the public and ensure that food is unadulterated. The legislation impacts all aspects of the U.S. food system, from farmers to manufacturers to importers, and is a legislative mandate requiring comprehensive, science-based preventive controls across the food supply.

The FSMA rule on Sanitary Transportation of Human and Animal Food is one of seven foundational rules proposed to create a modern, risk-based framework for food safety (1). The rule's goal is to prevent practices during transportation that create food safety risks, such as failure to properly refrigerate food, inadequate cleaning of vehicles between loads, and failure to properly protect food.

Food transportation and delivery are critical points for growers, transport professionals, facility managers, chefs, grocers, and sanitation

professionals within the food transport industry, as they seek to identify measures to keep equipment and vehicles cleaner between cleanings. The nature of food transport and delivery processes creates opportunities for contamination of surfaces by microbes from various sources such as the environment, food residues and human contact. Use patterns, re-use of items for multiple purposes, soiling, moisture, and lapses in cleaning and sanitizing procedures can further exacerbate conditions created by initial contamination.

Several measures are used to control microbial contamination, survival, and growth on food transport and delivery surfaces. These include physical and chemical barriers, temperature control, as well as routine washing and sanitization of surfaces. However, there can be lapses in these procedures warranting measures of protection beyond management control.

Sanitary equipment design (SED) has been identified as a key component of any food safety program. In 2014, the American Meat Institute (AMI) outlined ten SED principles to guide food equipment design, construction and use. The AMI

recommends that food equipment be designed to prevent bacterial ingress, survival, and growth on both product and non-product contact surfaces of the equipment. Also, equipment construction should ensure effective and efficient cleaning over the life of the equipment. Construction materials used for equipment must be completely compatible with the product, environment, cleaning and sanitizing chemicals and the methods of cleaning and sanitation(2).

As standards for food transport equipment and supplies continue to evolve, incorporation of technology into equipment designs that meet or exceed legislative mandates will be key. Suppliers and manufacturers at various stages along the food service supply chain are partnering to develop innovative solutions to comply with regulations. 🍷



See how Microban antimicrobial protection can help provide a cleaner environment for your temperature-sensitive cargo. Great Dane's Everest reefer is the only trailer on the market that offers broad-spectrum, 24/7 antimicrobial protection in its liner.

greatdane.com/innovations/  
microban-antimicrobial-protection



In this four-part article series, we will more closely examine the microbiology of food transport and delivery equipment and review components of a proactive, systems approach to maintaining cleanliness of these surfaces.

Surface microbial growth over a 24-hour period.

## References

1. <https://www.fda.gov/downloads/food/guidanceregulation/fsma/ucm494118.pdf>
2. <https://www.meatinstitute.org/ht/a/GetDocumentAction/i/97261>



# THE WORLD CHANGES, QUALITY SERVICE SHOULDN'T


## *Relationships are the foundation of Rudolph Freight's future success*

**A**s fast as the world moves—ever evolving technology, continuous communication, and a freight supply-demand balance reaching the highest reading ever recorded by ACT Research—it's important to remember that there are some things that will never change. For Rudolph Freight Inc., a truckload provider servicing 48 states with a fleet of 400 trailers, building lasting relationships by providing reliable, high-quality service has been its focus since the company was started in 1988 in Murray, Kentucky, and continues to be its guiding principle.

"If our customers are succeeding, we all win," said Chip Edwards, Rudolph Freight Inc.'s operations manager. And when Chip says "customer" he means everyone Rudolph Freight works with—from its shipper clients to its contract drivers. "It's a challenge to work to meet everyone's needs. What works best for us is doing what we say we're going to do."

When it comes to owner/operators, that means helping them with everything from getting more home time to improving their fuel efficiency. On the shipper side of the





***“If our customers are succeeding, we all win,”***

*Chip Edwards, Rudolph Freight Inc. Operations Manager*

## **Company Profile**

**Rudolph Freight**

**Headquarters:** Murray, Kentucky

**Founded:** 1988

**Business:** Truckload Provider

**Great Dane Equipment:** Champion Dry Vans

business, fielding trailers that meet or exceed client expectations in terms of spec and reliability goes a long way in growing Rudolph Freight's business. Great Dane's lineup of Champion dry vans helps Rudolph Freight check all those boxes.

To maximize volume, Rudolph Freight looks to spec the strongest trailer at the lightest weight possible. “Weight plays a big role with shippers hauling heavier loads. We have to make sure we are able to move that volume,” Chip explained. In addition to the standard width and height requirements from his clients, solid wood floors and air ride suspensions were also big selling points. And that went for the company's contract drivers as well.

“Our drivers talk about how air ride suspensions pull and ride better,” he said. “They aren't as tired after a 10-hour day.”

To help its drivers improve their fuel efficiency and hopefully put money they'd spend on fuel back into their pockets, Rudolph Freight spec'd aerodynamic side skirt fairings on its most recent trailer order. “Those have made an impact for lot of our drivers—especially the ones who pay attention to their MPG.”

Avoiding downtime is also a big trailer-buying focus, but Chip knows that life on the road is tough and unplanned service events happen. To provide peace of mind for when a trailer does need service, he has joined Great Dane's National Aftermarket Parts and Service Program, AdvantEDGE. Wherever the down trailer is located, with just one call he is connected to one of the nationwide

authorized service locations for service right away. “When we have an issue, Great Dane is always there,” Chip said. “It's rare, especially these days, to have people standing behind their products the way Great Dane does. We value having a relationship like that.”

With relationships being the big focus for Rudolph Freight, Chip is keen to keep an eye open for technology that will help him run an even better operation. He's currently testing Great Dane's FleetPulse on five of his trailers. FleetPulse is a data-driven solution that uses proprietary information on trailer specifications and design to help you know when to perform maintenance. Chip hopes to see how the trailer telematics system can help him track trailers and potentially reduce the company's maintenance spend.

“We're still in the early stages of seeing what is possible,” he said. “If we're able to get a notification about a failure or even a future maintenance event, then we have a better chance of getting it into a Great Dane dealer and making sure we have the parts to fix it. If you have failure at a truck stop or on the road, that trailer is down days—waiting on parts while the freight is on the trailer. It goes on and on. If there's a way for telematics to alert of us a problem that will allow us to reduce downtime that's a win.”

It's a win for Rudolph Freight, it's a win for its customers, and it's a win for its drivers. Whether its buying trailers, leveraging technology or simply doing the best by the people they work with, Rudolph Freight's focus on relationship will keep them in the game for the long haul. 🚛

# All-Electric Should Mean “All Electric” Even in Refrigerated Applications

## *Great Dane's, Johnson-AE (All-Electric) refrigeration system offers an electrifying solution*

As electric trucks gain traction in the marketplace, their utilization will largely be driven by application. The pick-up and delivery (P&D) segment, which features predictable routes and returns to its base at the end of each day for charging, makes a lot of sense for electric trucks. What doesn't make a lot of sense, is spec'ing an electric truck for P&D, and equipping it with a diesel-powered refrigeration unit, as many do in food and beverage distribution.

Great Dane recognized the need for an all-electric solution and is poised to take advantage of this new trend by expanding the offering of its all-electric refrigeration system, the Johnson-AE Series. The Johnson-AE system utilizes cold plate technology and battery power to provide consistent BTU capacity for most refrigerated applications, all without the need to burn diesel to refrigerate.

While cold plate technology isn't new, the refrigeration engineering team in Rice Lake, Wisconsin, has developed a number of solutions to some of the old pains associated with using cold plates like temperature controls and temperature recovery.

The new Johnson-AE system comes standard-equipped with a programmable logic control (PLC) module that enables the entire system to run more efficiently, using less energy. The

system has a new set of fans that are more powerful than previous cold plate systems. The fan system provides the correct BTU capacity for the specific application and it allows for air circulation through the plates for fast recovery after a stop. If the truck body requires temperature, a battery-powered system can also activate the fan system when the truck is at a scheduled delivery stop or when the truck engine is off. Think of it like your refrigerator at home – it only runs when it's needed. So cross “temperature control” off your list of cold plate concerns.

When it comes to potential cold plate freezing, the Johnson-AE Series is one step ahead of the issue thanks to its automatic defrost system that cleans the plate every time the system is plugged in at a power station. Cleaning the plates is imperative for keeping a cold plate system operating efficiently. If the cold plates are not defrosted, the condensation will make them less efficient. In the past, cold plates were cleaned with water or with a gas sequential system, and older defrost systems were based on a timer when the truck was plugged in, which would reset the auto defrost system when the truck was unplugged and repositioned. With the new PLC, the Johnson-AE system controls the defrost cycle with built-in intelligence that limits the number of times the system defrosts. It only activates the auto defrost when the system and plates require it.







An additional benefit of the Johnson-AE system is that the unit runs completely independent of the chassis power. For trucks that are equipped with alternative fuels like gas or electric power, the Johnson AE system will not tax any of the chassis power.

The Johnson-AE refrigeration system is currently available on all of Great Dane's Johnson Series composite truck bodies: The Johnson C-Series, R-Series and S-Series. Plans are in the works to include this all-electric refrigerated solution in other refrigerated truck bodies like the Alpine. For those interested in exploring the benefits of all-electric refrigeration, please contact the Great Dane Truck Body team at 1-800-922-8360 Ext. 2.

## All-electric refrigeration

The Johnson-AE refrigeration system is offered throughout the entire lineup of Johnson refrigerated truck bodies – from the maximum payload powerhouse C-Series to the thermally efficient R-Series and the compact, temperature-controlled S-Series.

The C-Series bodies are built to protect and insulate. The composite truck body's interiors and exteriors employ white fiberglass that is durable and corrosion-resistant. Its high-pressure foam insulation system produces panels with the highest thermal performance rating in the industry.

The R-Series' low ground-to-floor height helps reduce injuries and lets drivers quickly identify products at ground level. It offers a choice of two, three, four or five doors per side with multi-temperature capabilities. A roof-mounted condensing unit optimizes freezer space.

The S-Series packs a productive punch into the smallest fiberglass composite, temperature-controlled truck body Great Dane offers. This 8-foot long insulated body with a rear access door is engineered to fit in a 3/4-ton or 1-ton pickup truck, depending on the cargo requirements. A perfect option for shorter delivery routes, it's designed for medium and frozen product applications. 🚚



*The AE refrigeration system does not use diesel fuel so it is exempt from all of the California Air Resources Board's (CARB) transport refrigeration unit (TRU) regulations. These systems also do not have moving parts, filters or oils to change, making the operational costs minimal compared to a diesel-powered unit.*

## Solar Solutions


*Shining light on a new way to power refrigeration units*



**T**he sun is one of the most important sources of energy for all life on earth. It can also be a source of power for your all-important refrigerated transportation services. To harness that power, eNow's proprietary, lightweight, flexible, 0.125-inch solar panels – including an ETFE (Teflon) outer layer – capture sunlight and convert it to direct current (DC) electricity. The DC electricity goes to eNow's smart maximum power point tracking charge controller, which maximizes the power output of the photovoltaic panels and then sends the power to an auxiliary load (e.g., HVAC, lift gate, safety lighting, refrigeration) or battery system.

In refrigeration applications, the demand for battery power to keep the refrigeration unit running is at a

premium. Smaller alternators and anti-idling laws can leave your TRU starved for power, resulting in spoiled goods. When the sun rises, eNow's charge controller does a bulk charge to replenish the batteries. Once the charger detects the batteries are fully charged, it goes into a trickle charge (or float) mode. It will continually trickle

charge the batteries during daylight hours, even on cloudy days, and then contributes directly to bulk charging the batteries to replace the energy used as the refrigeration unit works to maintain a stable temperature during deliveries. This all happens automatically with no driver action required and whether the engine is on or off. 



## Lighter. Stronger. Better.

*Trailer flooring's work is never over*


## PROLAM

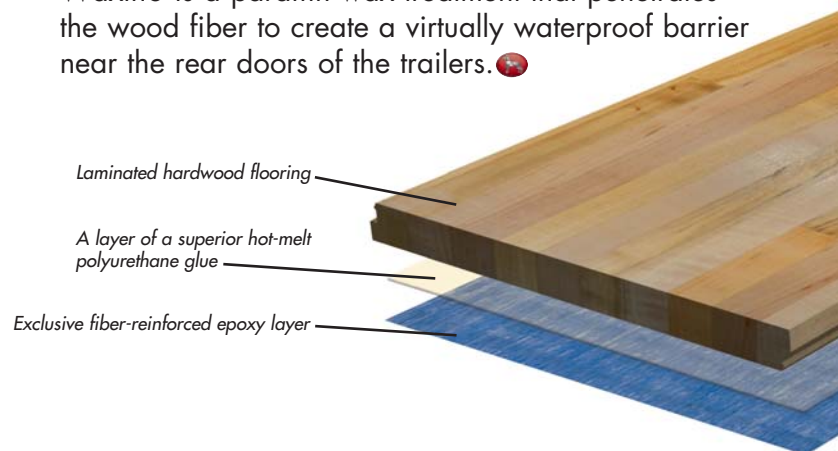
**I**ncreased strength and reduced overall weight – those two benefits may appear to be opposed, but when it comes to trailer flooring, you can have the best of both worlds thanks to composite flooring. While most composite floors would save 200 to 300 pounds, Prolam Wingolite composite floor can save between 300 and 425 pounds compared to a standard oak floor.

But how does it save all that weight?

Composite flooring is a hardwood floor that is supplemented by a fiber-reinforced epoxy layer. This reduces the thickness of the wood, thus reducing the weight. Prolam Wingolite uses an exclusive fiber layer, making it even lighter—110 to 135 pounds

lighter than other composite floor options. The return on investment is even more attractive for heavy cargo applications, such as paper roll, automotive parts, beverage transportation and beyond.

To protect the top surface of its Wingolite floor, Prolam makes its Waxin8 Protection standard. Waxin8 is a paraffin wax treatment that penetrates the wood fiber to create a virtually waterproof barrier near the rear doors of the trailers. 





# Supporting Growth

*Western Flyer Express taps Great Dane's AdvantEDGE program*



**ADVANTEDGE**  
National Aftermarket Parts & Service Program

**P**redictability. It's what every growing business craves, but in our fast-paced world of ever-changing technology, increasing freight demands and competition, not to mention sky-high customer expectations, predictability is in short supply. Every business does what it can to mitigate risk and deal with the unknown. For Western Flyer Express, a privately-owned transportation company located in Oklahoma City, Oklahoma, that delivers freight across the United States, leveraging Great Dane's AdvantEDGE program brings service and peace of mind to its rapidly growing operation.

"Our company is growing at a fast pace with new tractor and Great Dane trailer purchases," said James Bennett, director of maintenance for Western Flyer Express. "We have comfort in the fact that we can count on Great Dane dealers across the country if we are in need. We may not experience many incidents over the road but as the company grows, we have a solid foundation being a part of AdvantEDGE for trailer repairs when needed."

When Rodney and Randy Timms founded Western Flyer Express in 1996, they operated four tractors and four refrigerated trailers. Today, Western Flyer Express fields a fleet of more than 600 tractors and 1,500 trailers.

"The majority of our freight is drop and hook, and our drivers average more than 3,000 miles per week," Bennett said. "We have grown significantly over the last few years and we have diversified freight to include shipping lanes all over the country."

When Bennett joined Western Flyer Express in the fall of 2016, he was excited to partner with Great Dane's AdvantEDGE program after seeing its success with a previous employer. AdvantEDGE provides consolidated invoicing, single point-of-contact, not-to-exceed parts pricing and the peace of mind that comes from clear communication, quality repair services and a nationwide network. The program also offers collision, mechanical, refrigerated unit and tire repair for Class 7 and 8 tractors and trailers at more than 100 AdvantEDGE service locations staffed with trained technicians who are up-to-date on the latest products and repair techniques.

"Locally, Jim Watson has been great to work with to help support our fleet of over 500 Great Dane trailers," Bennett said. "Cliff Varnell, our trailer shop manager with more than 35 years of experience, was excited to get onboard with Great Dane AdvantEDGE to help with parts pricing and superior service. Western Flyer Maintenance Team is excited about the partnership with Great Dane and is looking forward to new trailer purchases for years to come."



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