Developing a Nose for Business
Electrical Box Design Improves

Making the Competition “Green” with Envy
Great Dane’s ThermoGuard Liner

Blowing Past the Competition
Foam Insulating Agents Meet Higher Environmental Standards
Innovation Drives 
Greener Products 
and Superior Quality

Dear John,

Protecting the environment is becoming of increasing importance, and at <<location name>>, our goal is not only to provide our customers with superior quality products and service but also more energy-efficient technologies developed by the industry’s most advanced Research and Development team.

Already, Great Dane is taking steps to reduce its environmental footprint. In this issue of Evolving Trailer Technology, our engineering experts share how our foam insulation process on reefer trailers is changing to meet new environmental protection standards. Great Dane’s exclusive ThermoGuard lining for reefer further adds the benefit of increased fuel efficiency. Other topics include understanding flatbed ratings and improved electrical connection options, both of which can extend a trailer’s service life.

Some of our loyal customers are featured in our case studies, and they continue to depend on Great Dane to provide reliable, quality trailers. Our commitment remains strong to living up to our reputation as the industry leader in innovation and technology.

Our ongoing collaborative efforts with our customers and industry partners to develop “greener” products and trucking solutions only strengthens our dedication to exceeding your expectations while contributing to a brighter future for us all.

Regards,

Name
Contents

Volume • 9 / Issue • 4

8 Melton Truck Lines
Top 5 Flatbed Company Puts More than 350 Great Danes to Work

4 News and Trends
Running Clean to Go Green: EPA SmartWay Designation to Mark Most Fuel-Efficient Vehicles

5 Inside Track:
• Foam Blowing Agent
• Electrical Nose Box
• Flatbed Ratings

8 Melton Truck Lines
Great Dane Combo-Flatbeds Provide Years of Reliable Service

10 Vendor View:
• Overseas Hardwoods Company
• Grote Industries

12 Akin and Porter
Great Dane Super Seal Adds Shine to Company’s Image

14 Did You Know?
ThermoGuard: A Durable, "Green" Option to Extend Life of Trailer

14 Did You Know?
Thermally-Efficient ThermoGuard Reduces Fuel Consumption

15 CorroGuard
Protect Your Image with Great Dane’s Newest Defense Against Corrosion

12 Akin and Porter
Family-Owned Business is World’s Largest Okra Seller

Comments for the editor?
E-mail: ett@greatdanetrailers.com
Or write to:
Evolving Trailer Technology
Great Dane Trailers
P.O. Box 67
Savannah, GA 31402

Evolving Trailer Technology is published by Great Dane Trailers.
The benefits are as clear as a bright blue sky. Fleets taking part in the U.S. Environmental Agency’s SmartWay Transport Partnership and Natural Resources Canada’s (NRCan) FleetSmart program are realizing improved fuel efficiency, reducing their environmental footprint and earning the respect of customers, lowering energy consumption and helping enhance national security, and demonstrating corporate citizenship that brings about well deserved distinction and recognition.

SmartWay is an innovative market-based partnership between EPA and the freight industry designed to increase energy efficiency while significantly reducing greenhouse gases and air pollution. EPA and NRCan have joined forces to encourage voluntary action by the international freight industry that will result in measurable fuel savings, verifiable emissions reductions, energy security and improved public health. In Canada, FleetSmart, a component of the ecoENERGY for Fleets program offered by NRCan, is introducing fleets to energy-efficient practices that can reduce fuel consumption and emissions.

As key partners in the programs, trucking companies commit to measuring and improving the efficiency of their freight operations, in part by adopting tractor and trailer systems and components that can significantly lower emissions and fuel consumption. With the help of manufacturers, performance specifications for new and existing tractors and trailers have been developed.

Those include aerodynamic devices for trailers, which reduce drag and in turn engine load. Fairings, for instance, can be added to the front, sides, underside and rear of trailers to improve airflow. Some of these options, which have been showcased by Great Dane on experimental trailers for customers like Wal-Mart, are undergoing evaluation. Other fuel-saving technologies are already available from Great Dane. For example, single wide-base tires that replace traditional dual tires save fuel by reducing weight and rolling resistance, and there is a slight aerodynamic benefit to this technology as well. Automatic tire inflation systems, such as the Meritor Tire Inflation System (MTIS) by P.S.I., eliminate fuel efficiency losses caused by under inflated tires. Tools developed by EPA-developed can help quantify the benefits of these fuel-saving options.

The three-year-old SmartWay Transport program has already conserved more than 600 million gallons of diesel fuel per year—saving the industry nearly $2 billion in annual fuel costs—and has eliminated nearly seven million metric tons of carbon dioxide (CO2) emissions. By 2012, the initiative aims to reduce between 33 and 66 million metric tons of CO2 and up to 200,000 tons of nitrogen oxide (NOx) emissions per year. At the same time, the effort will result in fuel savings of up to 150 million barrels of oil annually.

SmartWay partners can also apply 2007 SmartWay Trailer and Tractor logos to their equipment, identifying them as the cleanest, most fuel-efficient vehicles on the road and sending a clear message to customers and the public that they are taking action to save energy, reduce emissions and protect the environment.
In effect since January 1, 1989, the “Montreal Protocol on Substances That Deplete the Ozone Layer” is an international treaty designed to protect the ozone layer by phasing out the production of substances believed to be responsible for ozone depletion. While those products include the gases or foam blowing agents used to manufacture insulated trailer panels, Great Dane has risen to the challenge, meeting new requirements that help protect the environment while maintaining the highest levels of thermal efficiency in trailer design.

Foam blowing agents are used in a wide variety of applications, including insulated trailer manufacturing. The agents, which are typically classified as Ozone Depleting Substances (ODS), are used to propel foam for insulation and can function as an insulating component of the foam as well.

The ODS blowing agent family used by Great Dane until the early 1990s consisted of chlorofluorocarbon-based products such as CFC-11 and CFC-12. Use of those agents was phased out in compliance with the Montreal Protocol, and from the early 1990s until about 2003 Great Dane and much of the trailer manufacturing industry used products such as HCFC-141b. In 2003 many trailer manufacturers were forced to change the material used for foam blowing once again, in this case to HCFC-22. For a second time the phase-out of materials in use mandated changes in foam systems in order to reduce their Ozone Depleting Potential (ODP), and reduce the possibility of atmospheric damage and global warming.

While the use of HCFC-22 as a blowing agent was scheduled to be allowed until 2010, the deadline for its discontinuation has been pushed up to March 2008. By that time, supported by the work being done by allied industries in the chemical and foam manufacturing sector, Great Dane will be using the next generation of less harmful foam blowing agents, including HFC 245fa.

Staying ahead of the curve, Great Dane has been evaluating HFC-245fa in multiple trials on test and production trailers for quite some time. Test results indicate that in addition to offering environmental protection, this blowing creates insulating foam with an excellent cell structure and a low thermal conductivity.

Due to this proactive approach to meeting environmental protection standards, new insulated trailers from Great Dane will utilize state of the art foam systems with optimal thermal efficiency. The changes will also bring added value transparently, making this effort a win-win for customers and the environment.
Beginning in November 2007, whenever interior lights and/or a pintle hook are specified by customers, Great Dane Classic Reefers, SLT Reefers and Classic Dry Vans will feature an improved, larger electrical nose box. The new box, supplied by Grote Industries, provides more room for making connections and for the increasing number of light and accessory wires being used by many customers.

In many applications, the current 28-pin nose box has become overly crowded. The new box provides 42 bullet connections (12 white, 10 black, and 4 each blue, green, yellow, brown and red). The new design will also increase reliability and serviceability. To simplify and aid field repairs, for example, one pin on each circuit will also accept a ring terminal.

Improvements to the design of electrical nose boxes on Classic Reefer and Dry Van and SLT Reefer models also benefit installation processes. While the current design required extra slack in wires to make connections while the box was not attached to the trailer, the new design enables the box to be bolted to the front wall before any connections are made. All connections are then made on the stationary rear of the mounted box, which also eliminates the need to fold excess wire into the box.

Another important change being made to electrical nose boxes include a hinged front panel with a J-560 receptacle that can be replaced without disconnecting the wiring harness. Additionally, on all Great Dane refrigerated models the nose box and air couplings will now be mounted on a stainless steel hat. Also improving trailer nose box electrical connections is a decision to use solid pin connectors exclusively. While the original intent of split pin designs was to provide outward force that would assure the integrity of electrical connections, real world use has proven that over time the electrical cord tension band crushed the split pins, resulting in loose rather than tighter connections. With solid pins, outward force is provided by a ring/sleeve assembly in each of the sockets, keeping tension on the connection without causing pin damage.

Improved Electrical Box Design Reduces Pin Damage
The foundation of a platform trailer—its main load-carrying component—is its beams. Most models are built using I-beams, which consist of top and bottom flanges connected to a thin web. In use, beams convert the vertical loads of the cargo into tensile forces on the bottom flanges and compressive forces on the top flanges. For a higher strength platform trailer beam, the usual method is to increase the thickness of the flanges, although that comes at the cost of increased weight.

One of the ways flatbed manufacturers refer to the strength of their trailers is in beam ratings. A beam rating is a theoretical calculation of the structural capability of the platform trailer's beams. Beam Ratings are a function of Trailer Length, Kingpin and Suspension locations, Beam Design, Flange and Web Strength, Flange Thickness, and Type of Loading (evenly distributed or concentrated).

Manufacturers can determine beam ratings in different ways. For example, an OEM may choose to calculate a beam rating based on static loading. While this will result in a very high rating, it may have little relationship to the trailer’s actual load carrying capability. Similarly, the rating for a beam used on a 45-ft trailer can be vastly different than the rating when that same beam is used on a 53-ft model. And a large beam rating is not an indication that the load can be carried legally or without overloading axles or suspension components.

A more realistic way to evaluate a trailer’s carrying ability is to use GVWR (Gross Vehicle Weight Rating) and GAWR (Gross Axle Weight Rating). GVWR is the maximum rated combined weight of a trailer and its payload based on its structural capabilities. GAWR is the rated load-carrying capacity of an individual axle and wheel assembly restricted to the lowest working rating of any component in the system.

Great Dane calculates each platform trailer's GVWR using methods approved by the Truck Trailer Manufacturers Association. This methodology takes into account the limitations of the GAWR to avoid misleading customers into loading a vehicle in a manner that would cause components to be overloaded.
Melton Truck Lines
Great Dane Combo-Flatbeds Provide Years of Reliable Service

With a large and growing fleet of late model equipment, Tulsa, Oklahoma-based Melton Truck Lines, Inc., is one of the nation’s top five flatbed trucking companies and a recognized leader in providing air-ride service in its market segment. Helping Melton achieve this status and manage consistent growth are the newest trailers in its fleet—Great Dane combo-flatbed models.

“We started buying flatbeds from Great Dane in 2001,” says Jeff Robinson, Vice President of Maintenance, “and we have increased the size of our fleet considerably with them. We now have over 350 Great Danes in operation.”

In business for over 50 years, Melton services over 5,000 shippers of general commodities, building materials and steel in the U.S., Canada and Mexico. The company bases equipment at offices and terminals in Tulsa, Birmingham, Ala., and Dallas, Laredo and El Paso in Texas. Recently, the carrier celebrated the addition of its 1,000th tractor, and also the Tulsa Branch and with many people at the Huntsville, Tennessee plant where our trailers are built. Everyone has been especially helpful with us to deliver new trailers on a schedule that makes the most sense.

“The Great Dane combo-flatbed is an excellent trailer for us, not just because it’s favorably priced but also because its quality lets us reach our replacement goals at the lowest possible operating and maintenance costs,” Robinson states. “We feel that a properly maintained trailer in our operation can provide ten years of reliable service and we see no reason that the Great Danes won’t reach or exceed that goal.”

The 48-ft by 102-inch Great Dane combo-flatbed trailers in the Melton fleet feature Hendrickson AANT-23K air ride suspension, spread-axle running gear designed to meet Bridge Formula Laws in states like California. Other specifications include Meritor brakes and the Meritor Tire Inflation System (MTIS) by P.S.I., Bridgestone trailer tires and Grote LED lights.

“Great Dane supports us in many ways,” Robinson says. “We have excellent working relationships with Grant Pankratz at the Tulsa Branch and with many people at the Huntsville, Tennessee plant where our trailers are built. Everyone has been especially helpful when we’re considering new trailer specifications and when we need them to work with us to deliver new trailers on a schedule that makes the most sense for us. We also have great relationships with Great Dane dealers located near our terminals who help with maintenance and parts needs at those locations.

“Melton takes great pride in providing shippers across North America with consistent, on-time service,” Robinson states. “We have a 98% on-time pick-up and delivery record that’s possible in part because we operate a fleet of the highest quality vehicles on the road today. With companies like Great Dane supplying that equipment, we fully expect to maintain our excellent record and continue to be successful for many years to come.”

“The Great Dane combo-flatbed is an excellent trailer for us, not just because it’s favorably priced but also because its quality lets us reach our replacement goals at the lowest possible operating and maintenance costs.”

Jeff Robinson
Vice President of Maintenance,
Melton Truck Lines

FREEDOM Platform Trailers
A Strong, Economic Option

Great Dane’s most popular platform trailer, the FREEDOM, a steel-aluminum combo-flatbed, is available with 12-inch crossmember spacing for extra strength in forklift operations and with 16-inch crossmember spacing for heavy-load hauling. The trailers feature a near crossmember constructed of extruded aluminum and double plates to provide reinforcement of crossmember punches and transition areas. Low maintenance and modular construction that makes repairs easy are part of the design as well.

A key feature of the FREEDOM line are cargo restraint options. The trailers’ standard extruded aluminum side rails are designed to provide an almost infinite number of cargo restraint locations. With built-in tracks, any number of industry-standard “Double-L” winches can be installed at any location on either or both sides of the trailers and allows an anchor point on the other side for flat beds. Users can simply hook at any point along the trailer’s length to secure loads. The built-in winch track was thoroughly tested in Great Dane’s Research and Development Center and meets or exceeds U.S. and Canadian requirements.

As part of an “in stock” program that produces multiple units with standard specs, Great Dane FREEDOM trailers offer long-lasting benefits at a highly competitive price. The design and engineering of the line of straight frame and drop-deck platforms combines lightweight, strength, durability, low maintenance, appearance, versatility and innovation to meet the needs of today’s platform trailer user.

www.greatdanetrailers.com
Celebrating its 40th year in business, Overseas Hardwood Company (OHC) has been supplying platform trailer flooring to Great Dane since 1974. Since late 1994, the company has provided its Road Load Tested® (RLT®) Flooring that is standard on all flatbeds now built in the Huntsville, Tennessee plant. OHC also provides wood floor sills used under aluminum floors on Great Dane refrigerated trailers, and trailer and container flooring and dry van liners to the Aftermarket Parts group.

OHC’s RLT Flooring is produced in a patented process that delivers trailer length planks designed to match platform specifications for all trailer sizes and applications. The one-piece planks provide for streamlined and faster installation processes for Great Dane.

For customers, RLT Flooring can extend platform flooring and trailer service life, reduce maintenance costs and downtime for repairs, and increase safety by eliminating locations where most deterioration takes place. The use of trailer length planks eliminates all interior board ends and more than 100 screw holes that can create maintenance problems and areas in conventional trailer flooring that are subject to rot, wear and damage from forklifts.

RLT Flooring is tested to meet and exceed Truck Trailer Manufacturers Associations recommended load ratings during the manufacturing process. Only RLT planks that have passed rigid testing are accepted. RLT Flooring is also monitored in on-the-road service as OHC routinely tracks its performance with manufacturers and motor carriers. RLT is specified by many fleets and is the floor of choice for U.S. Military applications.

OHC is a leading supplier of trailer flooring. This year, the company reached two milestones, delivering its one-millionth flatbed floor and its 250,000th RLT floor. Built with the highest quality hardwoods, RLT Flooring from OHC is a key part of Great Dane’s effort to use the best materials available and build the industry’s strongest, longest lasting platform trailers.
Now featured on Great Dane Classic Reefers, SLT Reefers and Classic Dry Vans is the Grote Industries J-560 Ultra-Box Receptacle. Larger in both size and capacity, the new electrical nose box features 39 pin connections, instead of the industry standard 28, and accepts a variety of manufacturers’ plugs.

Features of the J-560 Ultra-Box Receptacle include accommodating an industry trend toward providing additional ground return systems for cleaner power, a push-on plug function, a glass-filled nylon housing, and insert-molded pins that seal out moisture and corrosive materials. Molded, threaded brass inserts ensure that the nose box is locked down to a special mounting gasket that protects against moisture intrusion.

On the Grote J-560 the main power cord hatch is replaceable. The main receptacle can also be changed, in as little as 10 minutes, compared to 45 minutes for the current standard receptacle, so service requires only minimal downtime.

As a result Grote manufactured the larger Ultra-Box with the capacity to accommodate future wiring needs associated with new components and systems. The Grote Ultra-Box Receptacle was also designed to minimize wiring mistakes and make it simpler and faster to install. Despite its larger dimensions, the J-560 uses the same four-hole mounting footprint as previous designs, making it easy to retrofit on existing trailers.
Akin and Porter

Great Dane Super Seal Adds Shine to Company’s Image

“Our equipment is our publicity,” says James Porter. “Our trailers project an image of our company to our customers. With Great Dane Super Seal reefers we think we have the best looking—and most reliable—refrigerated trailers available.”

A produce broker and the world’s largest seller of okra, Greenfield, Tennessee-based Akin and Porter uses the 130 tractor-trailer combinations in its private fleet to haul products to customers from its distribution facilities in Tennessee, Thomaville, Georgia, Lakeland, Florida, and Chicago, Illinois. To help lower costs and reduce empty mileage, the vehicles also backhaul freight for other shippers.

Still active in the business he founded with his brothers in 1955, Porter handles all fleet purchases personally. “We’ve only operated Kenworth tractors, and since 1958 every trailer in our fleet has been a Great Dane model,” he says. “That’s because the manufacturer has stayed a step ahead of its competition by offering not only the best trailer on the market but also the best service and support. From the factory to the Memphis branch we’ve done business with all these years for sales, service and parts, Great Dane treats us right all the way through the company.”

The latest trailers to join the Akin and Porter operation are 53-ft by 102-inch Stainless Steel Super Seal reefers. On average, the company operates trailers for seven years and replaces between six and 12 units annually. Standard specifications include Thermo King refrigeration units and six-finger ceiling mounted ducts, Hendrickson axle, brake and air suspension systems, and 1HR24.5 Michelin tires mounted on aluminum disc wheels.

Essentially a break bulk operation, Porter makes specific choices for his fleet’s Super Seals to help offset the wear that can be caused by forklifts and very frequent loading and unloading. For example, an Extreme Heavy Duty duct floor and a 16-inch high scuffband on walls are specified, while angle braces are also added to the top corners of rear frames.

For the past two years, Akin and Porter has also been specifying Great Dane’s PunctureGuard scuffbands and interior lining. The lightweight option is a strong, remarkably rigid and incredibly thin damage barrier created from a unique and innovative manufacturing process that thermally joins woven polypropylene and glass fibers into continuous rigid panels. Also, because PunctureGuard does not contain fillers such as glass spheres or clay that confine dirt and other contaminants, cleaning the trailer interiors to ensure product integrity is much easier.

“Great Dane Super Seals bring us many advantages because of its strength in a very demanding application and because its stainless steel finish helps boost our company’s image,” Porter states. “At the same time, we like to maintain relationships with suppliers that support us in addition to providing excellent equipment. For almost 40 years we’ve only operated Great Dane trailers because they pay off for us in the long run in many ways.”

CorroGuard

A New Defense Against an Old Enemy

Proactively addressing the problem of corrosion on trailer suspensions and support gear, Great Dane’s engineering and manufacturing experts have developed and adopted a host of technologies and processes. As a result, Great Dane now offers a complete package of comprehensive corrosion prevention solutions.

Now available as an option on Super Seal reefers is CorroGuard, a spray-in-place thermoplastic coating for superior long-term protection from road abrasion and corrosion. This extremely durable product is highly resistant to de-icing chemicals, road debris, climate fluctuations, and ice and snow. In fact, when applied over Great Dane’s standard epoxy primer, CorroGuard produces superior results in ASTM testing for Hardness, Elongation and Adhesion.

CorroGuard is also air tight and water tight, and will not peel, crack, warp, flake or split under even the harshest of conditions. It is rapid curing and does not require humidity or moisture to cure so it can be applied in cold temperatures and will not bubble in climates of high humidity. CorroGuard remains pliable over time and withstands prolonged UV exposure, and because it is formulated from 100% solids and does not contain VOCs (Volatile Organic Compounds) or solvents, it is not carcinogenic, ozone depleting or harmful if inhaled.
Thermally-Efficient ThermoGuard Reduces Fuel Consumption

Great Dane’s Exclusive Liner Makes Others “Green” with Envy

Made exclusively for use as an original equipment option on Great Dane refrigerated trailers, ThermoGuard is not just the only liner that helps maintain insulation performance for the life of a trailer, extending vehicle life and enhancing resale value. It is also an environmentally friendly solution made from recyclable materials that provides the added and highly valuable benefit of reduced fuel consumption.

ThermoGuard is a glass-reinforced, thermoplastic liner. Incorporated into the revolutionary design is a composite layer that seals the trailer’s insulation, enhancing the insulation’s thermal efficiency and helping maintain excess cooling capacity. Year after year, that advantage leads to reduced cooling unit run-time, saving fuel. Over the course of five years, ThermoGuard can potentially reduce cooling unit run time by more than 1,000 hours.

To reduce cooling unit run time and in turn fuel consumption, ThermoGuard addresses the thermal degradation that occurs in the polyurethane foam insulation used in all traditionally lined refrigerated trailers. While lightweight and providing for excellent insulating performance in a wide variety of applications, polyurethane foam insulation injected into walls, floors and ceilings is subject to a chemical reaction. During this process, insulating gas in the foam expands and is retained in the cell structure of the polyurethane. Over time, some of the cell gas escapes from the foam and air migrates into the cells.

As more of the insulating cell gas escapes and air gets into the cells, as well as from trailer damage, moisture intrusion or air loss, the polyurethane foam loses its insulating capacity. When insulation performance suffers, longer cooling unit run-times are required to make up for the subsequent loss of thermal efficiency.

Durable, and nearly impossible to penetrate, ThermoGuard can also lower operational costs by cutting maintenance and repair needs. Incredibly thin, this strong, lightweight lining is superior to traditional liners used in most refrigerated trailers and can save up to 200 additional pounds as well.

ThermoGuard helps save cooling unit fuel and extends the useful life of a refrigerated trailer, making it a very valuable trailer option for the bottom lines of both fleets and the environment.
Your Image is Everything. Protect it with CorroGuard

CorroGuard, Great Dane’s newest defense against corrosion, is a spray-in-place thermoplastic coating that protects trailer underbodies from extreme conditions. Moisture, severe temperatures, road abrasion, winter road traction and de-icing materials – CorroGuard can withstand them all.

Advantages of CorroGuard

- CorroGuard is extremely durable and resistant to de-icing chemicals, road debris, climate fluctuations, and ice and snow*
- CorroGuard is air tight and water tight, and will not peel, crack, warp, flake or split under even the harshest of conditions
- CorroGuard is rapid-curing and does not require humidity or moisture to cure so it can be applied in cold temperatures and will not bubble in climates of high humidity
- CorroGuard remains pliable over time and withstands prolonged UV exposure
- CorroGuard is 100% solids, does not contain VOCs (Volatile Organic Compounds) or solvents so it is not carcinogenic, ozone depleting, or harmful if inhaled

* Now available as an option on Super Seal reefers; CorroGuard is a featured part of Great Dane’s Total Protection Package of corrosion prevention solutions that add life to trailers, reduce costs and provide a superior appearance on the road.

* When applied over Great Dane’s standard epoxy primer CorroGuard produces superior results in ASTM testing for Hardness, Elongation and Adhesion.
Lose the Weight.
Not the Value.

No matter how heavy or how big the load, you can count on Great Dane’s line of FREEDOM straight frame and drop frame flatbeds to complete your delivery. With its aluminum construction, FREEDOM flatbeds help lighten the load without sacrificing value. For strength, low maintenance, durability and innovation, the FREEDOM is the industry’s highest quality flatbed on the road.

We’ve gone to great lengths to ensure our flatbeds add value to your business, while also watching your operation’s waistline.

For more information about how FREEDOM flatbeds can add value to your operation, visit www.greatdanetrailers.com