

# *Evolving Trailer Technology*

Volume • 10 / Issue • 1

## *Lacking Chemistry*

CorroGuard Helps Fight Corrosion

## *Enhanced Strength and Protection*

The High Value of Galvanneal Rear Frames

## *Lower Costs Without Losing Power*

Technology Helps Extend Reefer Battery Life



*Great Dane Trailers*

# CALENDAR

## April

April 2 – 5, 2008

Trailer Rental and Leasing  
Association Annual Conference  
(TRALA)

Arizona Biltmore, Phoenix, AZ

April 17 -19

Truck World  
International Centre, Toronto,  
Canada  
Booth #3033

April 2 – 29

National Private Truck Council  
Annual Conference and  
Exhibition (NPTC)  
Duke Energy Center, Cincinnati,  
OH

Booth #126

April 30 – May 4

Truck Trailer Manufacturers  
Association (TTMA)  
Westin-La Quintera Resort, San  
Antonio, TX

## May

May 23 -24

Winnipeg Truck Show  
Winnipeg Convention Center  
Winnipeg, Manitoba

## June

June 8 – 9

The Atlantic Truck Show  
Moncton Coliseum, Moncton, N.B

June 26-28

The Great West Truck Show  
Las Vegas Convention Center,  
Las Vegas NV  
Booth #1527

### Visit us at

[www.myettnews.com](http://www.myettnews.com)

- Update your reader profile
- Send comments to the editor
- Request product literature
- Locate your Great Dane branch or dealer
- Link to the Great Dane home page

To find your personal ETT profile or  
register as a new subscriber,  
visit [www.myettnews.com](http://www.myettnews.com) and  
log in using the password below:

X X X X X X X



# Delivering Innovative and Energy-Efficient Solutions

Dear,

Delivering solutions through proven and innovative methods to meet our customers' needs is our top commitment at <location name>.

This issue of Evolving Trailer Technology explores several energy efficient and environmentally friendly strategies. Our engineering experts share a new technology that powers accessories without draining a reefer unit's battery, which can help reduce fuel consumption. Corrosion is a costly concern, and strategies for fighting it can include CorroGuard as well as other solutions for adding protection to your investment.

Whether an operation calls for a semi-insulated trailer to ensure quality delivery of its products or simply wants to take measures to lower maintenance costs, Great Dane provides innovative and cost effective strategies.

Our ongoing research and design efforts result in a number of technologies that can help meet the changing needs of our customers' operations, making Great Dane a comprehensive source for answers when you need them.

To better serve your operation, let us put our knowledge and innovation to work for you.

Regards,



# 8 Stroehmann Line Haul

Great Dane SSL Rises to Challenge for George Weston Bakeries, Inc.



## 14 Did You Know? LED Lamps Get the Green Light



## 12 Martin's Famous Pastry Shoppe

Great Dane Insulated Trailers Deliver the Perfect Solution for Nearly 25 Years

# Table of Contents

Volume • 10 / Issue • 1



4

### News and Trends

New CARB Diet a Costly Concern: Regulations Require Reefer Engine Compliance

5

### Inside Track:

• Corrosion • Galvanneal • Battery Technology

8



### Stroehmann Line Haul

Great Dane SSL Rises to Challenge for George Weston Bakeries, Inc.

10

### Vendor View:

• Carrier • ACCU-SHIELD

12



### Martin's Famous Pastry Shoppe

Great Dane iVan Trailers Offer Solutions for 25 Years

14

### Did You Know?

LED Lamps: Energy-Efficient Options Enhances Safety and Lower Costs

15

### THERMOGUARD

#### 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.

# New CARB Diet a Costly Concern

*Regulation Requires Reefer Engine Compliance*

**O**n February 26, 2004, the California Air Resources Board (CARB) adopted the Transport Refrigeration Unit (TRU) Airborne Toxic Control Measure (ATCM). Designed to reduce harmful emissions from refrigeration units, the new regulation will impact Great Dane customers that operate refrigerated trailers in California, including those based outside the state.

The CARB ATCM will force operators of refrigerated trailers to adopt new technology at an estimated cost of more than \$5,000 per unit. Beginning December 31, 2008, model year 2001 and older transport refrigeration units must meet performance standards. Model year 2002 engines must comply by the end of 2009. This pattern continues for subsequent model years, with mandatory compliance by the end of the seventh year after each engine model year.

Engine compliance is possible in three ways, including retrofitting with appropriate verified controls such as exhaust aftertreatment devices, using a refrigeration unit engine that has been tested for compliance or by adopting

technologies like electric standby, cryogenic temperature control or CARB-approved alternative diesel fuels.

Under the new law, owners of units based in California must also apply for CARB identification numbers and submit operator reports by January 31, 2009. For units based outside California, identification numbers are voluntary but highly recommended to reduce inspection times at border crossings, scales, terminals and distribution centers.

One remaining hurdle to implementation of the California ATCM is a pending decision by the U.S. Environmental Protection Agency on a CARB request to grant a waiver of preemption under the federal Clean Air Act, enabling the state to supersede federal law. EPA, which was expected to make a decision by the end of 2007, has not taken any action. Meanwhile, CARB plans to aggressively implement the TRU ATCM and is now urging truckers with transport refrigeration units to pay attention to upcoming deadlines and comply with the new regulation to avoid penalties. There is no provision in the law for extensions.

It also appears unlikely that reefer operators will see relief from the new regulation.

While promoting environmental protection by establishing emissions standards is laudable, the new CARB regulation impacting refrigeration units is troubling because it punishes operators for purchases of equipment that were originally in compliance. Instead of establishing regulations for new equipment, like EPA has done with the engine emissions regulations, CARB is reaching into the past, and in the process, putting a financial burden on many Great Dane customers. 



# Trailers and Corrosion Lack Chemistry

*CorroGuard Helps Provide Effective Barrier  
Against Equipment Deterioration*

**R**ust or corrosion, whatever you call it, it's a problem that, according to the U.S. Federal Highway Administration, costs the transportation industry more than \$30 billion annually. But what is it, what causes it and what can be done about it?

"In simplistic terms, think of rust like a battery," says Chris Stolfe, Sr. Manufacturing Engineer. "The iron on a trailer is the anode, oxygen in the air is the cathode and moisture is the electrolyte. The electrochemical reaction between these elements, which produces power in a battery, causes corrosion on trailers."

At the same time, road debris, sand, gravel and de-icing materials can sandblast vehicle underbodies and coatings, leaving areas left exposed to the corrosive environment, and the problem today is far worse than in the past. "For more than 50 years," Stolfe explains, "sodium chloride (Rock Salt) has been used for de-icing roadways. Now, Magnesium Chloride and Calcium Chloride have become widely used options due to ease and speed of application, as well as their effectiveness at lower temperatures. These newer road surface treatments are especially destructive because they cling to the underbody of a vehicle and adsorb moisture, even at relatively low levels of humidity, and that multiplies their corrosiveness."

By understanding the causes of corrosion, Stolfe notes, Great Dane is finding solutions. For example, corrosion-resistant materials such as stainless, galvanized and Galvannealed steels are effective and durable barriers. Soft film barrier solutions are also commonly used, such as the Valspar ValFlex and DryFlex coatings that are standard on Great Dane trailers. These cost-effective corrosion preventive compounds are effective because they adhere to surfaces, displacing water and preventing one of the necessary ingredients for corrosion, water, from reaching the metal, even when the film above it is damaged or partially removed.

Even more advanced is the latest available corrosion control technology from Great Dane. CorroGuard™, a spray-in-place thermoplastic elastomer coating that is an option on a growing number of models, was developed specifically for trailer suspension and support gear protection from rock and stone impingement, extreme weather conditions and all current de-icing chemicals. It will not cut, peel, chip, blister or corrode under normal operating conditions, providing superior long-term protection.

Through its understanding of the underlying causes and science of corrosion, Great Dane Trailers is using its experience to find the strategies and technologies that can be implemented to control this costly problem. 



*A key component of Great Dane's  
Total Protection Package*

# Enhanced Strength and Corrosion Protection

*The high value of Galvanneal rear frames explained*

W

hat provides greater corrosion protection on rear frames than galvanized steel and costs less than stainless steel? The answer is simple—Galvanneal steel frames that are available as an option on all Great Dane trailer models. Perhaps not so simple, however, is to understand the proven process behind Galvanneal and the reasons why this upgrade is a very worthwhile investment.

Galvanneal steel offers both highly effective corrosion protection and excellent paint adhesion. “Even the best galvanized and painted steel will rust when forklift damage and impingement by road debris chip away at the protective coating,” explains Chris Stolfe, Sr. Manufacturing Engineer. “With Galvanneal we change the steel physically and chemically, and in turn provide corrosion prevention properties that are even better.”

While it may be tempting to think of Galvanneal in the same terms as galvanized steel, the two are actually quite different. Galvanized steel is a

surface treatment of zinc over steel. Galvanneal steel is produced by putting a zinc coating on both sides of a carbon steel sheet, which is then passed through a furnace where a temperature of about 1,000 degrees F is maintained for a few seconds to create a zinc-iron alloy.

There are three primary benefits of using Galvanneal in place of galvanized steel on rear trailer frames, Stolfe reports. For example, the zinc-iron alloy generally has better welding characteristics than pure zinc coatings like those used in galvanized steel, ensuring greater integrity.

Another key advantage of Galvanneal is its hardness. A galvanized coating is not as easily scratched when handling or under heavy use or impact as a softer galvanized coating. Greater resistance to chipping and flaking means the zinc-iron alloy leaves fewer unprotected areas on trailers.

Galvanneal steel also offers superior paint adhesion. While galvanized coatings have a sheen that produces a poor surface for paint, the Galvanneal process creates a surface that enables greater adhesion, offering a better overall appearance for long periods of time.

For these reasons, Galvanneal steel is becoming more popular in the construction of trailer rear frames. Also less costly than stainless steel, it is especially cost effective when the expense and downtime of repainting steel surfaces is considered. In this case, spending more upfront for Galvanneal rear frames is without doubt a very worthwhile investment. 





# Lower Costs Without Losing Power

*New Technology Helps Extend Reefer Battery Life*

**T**he next time you pass by a new Great Dane reefer equipped with a Thermo King refrigeration unit, take a minute to look at the front wall. What you may see is a small box housing a battery, and if so you're looking at a relatively new technology from Thermo King called the EON battery, which is used to power accessories such as interior lights.

"With EON, fleets don't have to connect the trailer to a tractor or operate refrigeration units to provide electrical power for interior lighting in an untethered trailer," says Dan McCormack, Great Dane Product Engineer. "This not only eliminates the cost and complexity of connecting lights through the seven-way tractor connector or directly to the refrigeration unit battery. It also means less fuel consumption and run time for the reefer and eliminates the possibility of

draining its battery to the point where it doesn't have enough power to start the unit."

EON is connected to the Thermo King refrigeration unit with two wires. The system is designed so the battery is charged when the unit is already running and is disconnected when the reefer is off. The new battery employs Absorbed Glass Mat (AGM) technology to offer deep cycle and cranking power capabilities in one package. The five-second cranking power of the EON is double to triple that of equally sized conventional batteries, even at extremely low temperatures. The EON also features a 200-minute reserve capacity. Backed by Thermo King with a full-replacement four-year warranty, the EON battery is designed to last five times longer than a wet cell battery.

In the near future, McCormack relates, EON will also be able to charge liftgate batteries, an additional benefit for Great Dane reefer customers. Those batteries are generally charged today through the seven-way or a secondary connector using tractor power.

Available on all Great Dane reefers equipped with Thermo King refrigeration units, the EON battery is installed by dealers, who coordinate with the plant to ensure that the proper wiring is in place when the trailer is built. Already realizing growing interest among customers, EON batteries are likely to be a more common sight on Great Dane reefers. 

# Stroehmann Line Haul



Great Dane SSL Rises to Challenge for George Weston Bakeries, Inc.



From its cakes, cookies and donuts to a variety of breads, the products of Pennsylvania-based George Weston Bakeries have been favorites with generations of consumers. Among them are well known brand names, including Arnold, Boboli, Brownberry, Entenmann's, Freihofer, Maier's, Stroehmann and Thomas' English Muffins.

Inside the operation as well, another brand name is also highly popular— that of Great Dane Trailers. Over the past few years, Great Dane has supplied over 400 trailers to Stroehmann Line Haul, the company's private distribution fleet. Included are more than 300 SSL dry freight vans and about 100 other Great Dane models.

Most recently, Stroehmann purchased 104 48-ft SSL vans equipped with pintle hooks for use in New York State Thruway and Massachusetts Turnpike doubles operations of Freihofer and Entenmann's bakeries. There was also an order of 100 53-ft SSL's that are used to haul bread products for other parts of the operation. Spec'ed identically, the SSL's have hardwood floors and are fitted with insulated roofs to protect the sensitive cargo from heat damage.

"Our fleet hauls baked goods on rolling racks from our plants to distribution locations where delivery trucks carry it to stores," explains Richard "Skip" Dunkelberger, regional fleet manager based in Reading, Pennsylvania. "The SSL has been our trailer of choice since 2005 because it provides the interior width we need to maximize load configuration and productivity, and because its unique interior lining eliminates the need to use wood on sidewalls, which can cause damage to bread packages. In my opinion, the SSL is a breakthrough in trailer technology."

## Superior craftsmanship

There are other reasons that Stroehmann buys Great Dane trailers for its operation, according to Dunkelberger. "One of those is the overall superior craftsmanship of the trailers," he says. "That level of quality means the trailers will last longer, which is especially important to us as our business continues to grow."

"Another factor in our decision making process is the company behind these trailers," Dunkelberger concludes. "The people at the Mount Joy factory branch have been very helpful every step of the way and the plant staff in Danville, Pennsylvania – where the SSL's are built – ensured that everything went perfectly with our trailer orders. We toured the plant before we ordered these trailers and again during the build and both times we left very impressed by the efficiency of the manufacturing operation. As a partner, Great Dane is with us every step of the way."

*"That level of quality means the trailers will last longer, which is especially important to us as our business continues to grow."*

Skip Dunkelberger  
Regional Fleet Manager



## SSL

Setting the standard for strength and durability



With the unique construction of its single sided laminate interior lining, the Great Dane SSL is quickly becoming the trailer of choice for a growing number of fleets. Far more capable than plywood or plastic linings, the tough, one-of-a-kind steel lining provides superior protection against forklift damage, which can damage cargo and leave scarring that is visible on the outer wall.

The durable construction of the SSL's interior lining—in either standard natural gray or optional white finishes—consists of a layer of .019-inch steel over a rigid core. The steel layer wraps the edges of the core to create an anti-sag surface. A rigid core bonded to the steel ply assures the interior will not wrinkle or easily crumple from repeated forklift impact.

When it comes to measuring the SSL's interior lining strength, the numbers speak for themselves. With a lining puncture strength nearly six times greater than .25-inch domestic plywood and over four times greater than MDPE plastic, the Great Dane SSL provides unmatched durability.



# Carrier Transicold Vector Unit

*Electric Standby Conserves Fuel and Reduces Maintenance*



Carrier

**TRANSICOLD**

The industry's first trailer refrigeration unit with built-in electric standby, Carrier Transicold's Vector™ 1800MT multi-temperature model features Deltek™ hybrid diesel-electric technology. Matched with Carrier single- and dual-discharge evaporators, the Vector 1800MT is offered in 11 different trailer configurations.

The Vector 1800MT unit's electric standby capability allows a parked unit to be plugged into an AC power source, eliminating the need to run the diesel engine. While the ability to run a conventional transport refrigeration unit from an AC electrical source requires a relatively complex add-on motor assembly with lower capacity, the Vector 1800MT has built in high-capacity 460-volt electric standby capability.

Electric standby is growing in importance to refrigerated carriers for its ability to conserve fuel, a savings estimated at greater than 60 percent. The technology also reduces emissions, which can help comply with new regulations, especially in California where use of electric standby at loading docks is one of the approved methods for compliance. The capability also eliminates engine noise during loading and unloading. The hybrid diesel-electric architecture also reduces maintenance costs by an estimated 30 percent. The design of the Carrier Vector 1800MT eliminates most mechanical components common to conventional trailer refrigeration units and uses an ultra-high-performance generator driven by the diesel engine to power the all-electrical refrigeration system.

Reduced componentry and engine use translates into less maintenance.

## Leading Technology

The Vector 1800MT is also the first multi-temperature trailer unit to use Carrier's Advance™ microprocessor control, joining the Carrier X2 Series of single-temperature refrigeration units equipped with leading technology. Advance provides nearly 50 different operating parameters that allow user-customized refrigeration configurations for any commodity. The patented ProductShield™ feature allows the unit to smartly switch between start/stop and continuous run based on ambient temperature, saving fuel and maintenance while preserving product temperature. 



X2 models of Carrier refrigeration units also now have the newly enhanced IntelliSet™ option that makes programming for optimum fuel efficiency as simple as finding a named commodity on the Advance control's scrolling display and pushing a button. The latest version of IntelliSet software includes eight templates for most applications, including fresh and frozen commodities.



# Accuride ACCU-SHIELD

*Lightweight Wheel Benefits Industry  
and Environment*



**A**ccuride Corporation's commitment to customer satisfaction goes beyond the development of quality products that offer comfort and reliability. Accuride's product development focus is extended to developing products that offer solutions to customers' wants and needs. As such, Accuride's product line-up includes alternatives that allow the customers to make environmentally conscious choices when equipping their trailer.

"To address drivers' desire to purchase environmentally friendly products, Accuride offers products that allow drivers to reduce their overall vehicle weight and thus reduce fuel consumption," explained Tony Pape, Accuride's Vice President of OEM Sales. "Our steel and aluminum wheel offering allows owners to choose from a variety of products that can save 16 to 344 pounds on trailer applications, compared to standard steel wheel applications. With our extensive product offering, owners can choose the product and weight savings they want, all from a brand that they trust."

Additionally, in response to the industry's desire for an aluminum wheel that cleans easily without harsh chemicals that could potentially impact the environment, Accuride developed ACCU-SHIELD aluminum wheels. ACCU-SHIELD aluminum wheels are easily cleaned with mild soap and water. "ACCU-SHIELD aluminum wheels have a protective coating which we believe makes them the lowest maintenance aluminum wheel in the industry without sacrificing the

appealing shiny appearance," explained Pape. "The wheels provide superior shine that is simple to care for and durable enough to perform beyond the expectations of our customers." Furthermore, the ACCU-SHIELD protective coating does not affect the ability of the aluminum wheel to be eventually recycled and should in fact help to keep it on the road even longer while still looking great.

Accuride also offers and recommends the use of Wheel-Guard separator plates for use in all dual-wheel applications. The plate is mounted between the two wheels and protects the inner and outer wheels from coming into direct contact with each other, thus reducing surface abrasion and wear.

"At Accuride, we realize that each driver and each application is unique. For these reasons, our focus is on offering an extensive line-up of quality products that provide consumer choices and ultimately solutions to the dilemmas they may face," summarized Pape. 

**ACCURIDE**<sup>®</sup>  
**WHEELS**

# Martin's Famous Pastry Shoppe, Inc.

*Great Dane Insulated Trailers Deliver the Perfect Solution for Nearly 25 Years*

**CASE STUDY**



**"Great Dane trailers have been absolutely essential to our ability to transport and maintain product integrity."**

Ron Gipe  
Executive Vice President

**Martin's**



From left: Jim Martin, President, Ron Gipe, Executive Vice President and John Gossert, Transportation Manager count on Great Dane to deliver quality for Martin's Famous Pastry Shoppe, Inc.

Headquartered on Potato Roll Lane in Chambersburg, Pennsylvania, there's no doubt about what makes Martin's Famous Pastry Shoppe famous. Since the 1950s, when Lois and Lloyd Martin perfected the potato roll that bears their name, the family owned and operated business has grown from its local Pennsylvania roots into an instantly recognizable brand name on store shelves up and down the East Coast.

"We're in a very competitive arena with a very narrow, niche product line," says Ron Gipe, executive vice president. "The freshness and integrity of our products is of the utmost importance. An effective and efficient distribution system, and especially a fleet of the right trailers, is vital."

Great Dane trailers have been the mainstay of the Martin's fleet for the past 24 years. Among the 110 units now in operation are the ten newest, a group of 2006 i-Vans, as well as a large number of insulated Classic dry freight vans. The Great Danes carry freshly baked goods from the 223,500-sq ft bakery to company warehouses and to distributors and wholesalers from Virginia to Maine, and in parts of Florida and North Carolina.

"Our products leave the plant the day they are baked and have to be sold within three days," Gipe explains. "Insulated trailers keep them from freezing and prevent the heat of our freshly baked goods from reacting to cooler outside temperatures, which would create condensation inside the packages. Great Dane trailers have been absolutely essential to our ability to transport and maintain product integrity."

John Gossert, manager of the Martin's Transport Department, made the initial recommendation to buy only Great Dane trailers for the fleet. "As a former trucker, I knew that the best products in the market needed to be hauled by the best trailers on the road," he states. "The choice of Great Dane trailers was the right one, and the support we have received from the manufacturer, and especially from its factory branch in Mount Joy, Pennsylvania and our sales representative, Glenn Landis, has been just as important to us."

One form of that support, Gossert points out, is Great Dane's ability to supply 96-inch wide trailers in varying lengths from 48 to 53 ft. Loaded with pallets of packaged bread products, the different length trailers are required to productively service the company's distribution needs in different markets, balancing demand with the ability to deliver fresh goods in full trailer loads.

"A few years ago," Gossert also relates, "we found that we had a need for longer trailers to handle larger loads bound for new markets in Florida. With Great Dane's capabilities at our disposal, and because even our oldest trailers were still very durable and reliable, we began a program to extend 48-ft models into 53 footers. The Great Dane branch service department has stretched about 30 trailers so far, and we are very pleased with the results."

Those trailers have joined the newest in the Martin's fleet, the 2006 i-Vans built in the Great Dane Brazil, Indiana plant. Specifications for the trailers include Neway air ride suspensions, LED lighting and LongLife harnesses, interior dome lights and Kemlite interior lining. Like all Martin's trailers, the newest units

are equipped with Walco or Maxon rail style lift gates to provide flexibility in unloading operations.

All 110 Great Dane trailers in the Martin's fleet and its 92 tractors are maintained in a company shop. Trailer parts, including supplies needed by the fleet's body shop, are provided by the Great Dane branch location.

"We maintain our fleet to ensure that we deliver fresh goods on time," says Ron Gipe. "For the same reason, we're passionate about the appearance of our trailers. We believe in word-of-mouth advertising, so beyond in store promotions and some very limited radio ads our trailers are the biggest exposure we have to our customers. To send that message, we use reflective Scotch Brite decals on the trailers and make sure they are always clean and in excellent condition."

For over 50 years Martin's has stood true to its founders' belief in striving for perfection and only selling products of which they could be proud. That uncompromised dedication to quality has not changed, nor has the use of Great Dane trailers exclusively for almost half of the company's existence.



## i-Van Semi-Insulated, Full Value



Described by many as the "perfect solution," the Great Dane i-Van incorporates features of the Classic dry freight van and Classic reefer lines to create a highly versatile trailer designed specifically for temperature-sensitive loads. And while keeping perishable cargo at ideal temperatures is the i-Van's greatest strength, this innovative trailer also weighs less than more traditional insulated sheet and post models.

Key to the i-Van's value is the combination of the traditional sheet and post construction of a van with the press-panel insulated technology of a reefer. The result is a modular wall construction design that does not require the need to spray and shave urethane insulation prior to trailer completion, something that can cause an opening in the cell structure and weaken insulation integrity. In the i-Van, insulated side and roof panels are placed above a standard van floor, which can also be insulated on request.

Press-panel technology in the i-Van also helps provide the flattest walls possible with minimum interior fasteners. In place of traditional plywood, the i-Van comes standard with a fiberglass-reinforced plastic lining installed full length to the front wall. The flat, smooth, bright interior lining significantly reduces maintenance time and costs.

All things considered, to meet the needs of temperature sensitive loads not requiring heat or refrigeration, the i-Van offers fleets value that can't be overlooked.



# LED Lamps Get the Green Light

*Energy-Efficient Option  
Enhances Safety and  
Lowers Costs*



**A** mature technology, and one that has been increasingly adopted by many fleets, LED lighting offers long-term value. Far more robust than incandescent lamps, LEDs lower costs by lasting longer and requiring less power consumption, benefits for both customers and the environment.

Available for stop/tail/turn, clearance/marker, side turn, license plate and interior lights on Great Dane trailers, LEDs use much less power than incandescent lamps, more than 90 percent less in some applications. For example, a typical marker incandescent lamp can draw up to 10 watts of power while an LED producing the same amount of light uses only 0.5 watts. Similarly, LED stop/tail/turn lamps use about 6 watts compared to 27 watts for incandescents.

On an entire trailer, LEDs will draw up to 48 watts vs. 330 watts for incandescent lamps. All of that lower power usage translates into fuel savings because lower wattage may reduce engine RPMs necessary to produce electricity. By one estimate, a trailer outfitted completely with LEDs can save one gallon of fuel per year compared to a trailer with incandescent lamps.

LEDs also have a much longer service life than incandescent lamps, which not only lowers operating costs but also means less waste and fewer failed lights going into landfills. LEDs are also mercury free and have minimal caustic impact to the

environment compared to incandescent lamps. Enhanced safety is also an advantage of LED lighting. LEDs produce light that is richer than incandescent and reach full intensity almost immediately, in 3 milliseconds compared to 200 milliseconds for incandescent technology. Put another way, if you are following a vehicle equipped with LED stop lamps at 60 MPH (88 ft per second) the advantage equals about 20 extra ft of stopping distance.

For the savings they offer and the benefits of enhanced safety and lower costs, many Great Dane fleets are already adopting LED technology, and in the process becoming more efficient and a little bit greener. 🚗

LED lamps (right) when compared with incandescents are brighter, use less voltage, require less maintenance and last longer.



# Performance Without A Melting Point

*Increased Thermal Efficiency Helps Keep Reefers as Cold as Ice*

ThermoGuard, Great Dane's exclusive, revolutionary glass-reinforced thermoplastic liner, adds years to the useful life of a refrigerated trailer by helping maintain thermal efficiency as it ages. Less maintenance downtime and extended performance that keeps its cool means more revenue for your operation. Reduced cooling unit run time means greater fuel efficiency - a solution that benefits you and the environment.



## Advantages of ThermoGuard

- Helps maintain excess cooling capacity
- Reduces operational costs by helping reduce cooling unit run-time, reducing cooling unit maintenance, and saving cooling unit fuel
- Helps maintain insulation performance as the trailer ages
- Can potentially reduce cooling unit run time more than 1,000 hours over the course of five years
- Helps to extend the useful life of the trailer, increasing trailer productivity, and improving resale value
- Lightweight - saves up to 200 additional pounds
- Strong, durable, and puncture resistant



## HERMOGUARD

*Great Dane Trailers Corporate Headquarters*  
*P.O. Box 67*  
*Savannah, GA 31402*  
*912-644-2100*

**Visit us at**  
**[www.myettnews.com](http://www.myettnews.com)**

To find your personal ETT profile  
or register as a new subscriber,  
visit [www.myettnews.com](http://www.myettnews.com)  
and log in using the  
password below:  
X X X X X X X X

# Protection You Can't Afford to Resist.



A key component of Great Dane's  
Total Protection Package

*Corrosion can eat away at your operation. Untreated chips to paint on the undercarriage of a trailer can snowball into equipment deterioration and increased maintenance costs. But a trailer protected with Great Dane's exclusive CorroGuard, with Technology by GatorHyde, creates the ultimate impact-resistant barrier against de-icing chemicals, road debris and climate fluctuations. With corrosion a costly threat to trailers, this extremely durable undercoating provides protection you can't afford to resist.*



**Great Dane**

A Division of Great Dane Limited Partnership

[www.greatdanetrailers.com](http://www.greatdanetrailers.com)



*This Great Dane newsletter is printed entirely on Forest Stewardship Council certified paper utilizing soy inks. FSC certification ensures that the paper used for this folder contains fiber from well-managed and responsibly harvested forests.*



© **Mixed Sources**

Product group from well-managed forests, controlled sources and recycled wood or fiber

[www.fsc.org](http://www.fsc.org) Cert no. XXX-XXX-000  
© 1996 Forest Stewardship Council

