Evolving Trailer

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Right Moves

Making a Difference In The Environment







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Corrosion Prevention
Solutions for Adding Life, Reducing Maintenance
Costs and Improving Appearance

Rewards & Premiums

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& Trends

Right Moves: Setting Goals for Environmental Stewardship

or all types and sizes of businesses, the adoption of environmentally friendly practices and the development of environmentally friendly products are proving to be the right moves at the right time. From manufacturers to retailers, "going green" is a key part of both short-term and long-term corporate plans.

The trucking industry and government are working more closely than ever to promote environmental stewardship. The U.S. Environmental Protection Agency's SmartWay Transport Partnership— and a similar program in Canada called Canada FleetSmart— are establishing incentives for fuel efficiency improvements and greenhouse gas emissions reductions. Primary components of the program include reducing all unnecessary engine idling and creating partnerships that bring the benefits of management tools, technical support and information to fleets. Great Dane is also addressing

environmental protection challenges in its engineering and manufacturing processes. As the only trailer builder to have an extensive R&D lab on premises, Great Dane uses decades of experience and state-of-the-art computer technology in ongoing programs to research and develop competitive designs in combination with engineering and manufacturing processes that help reduce the industry's environmental footprint.

Among the examples of how Great Dane is achieving this objective are the use of low HAP, VOC compliant and water based coatings where applicable and a reduction in the amount of non-renewable resources used in trailers; the introduction of advanced products like PunctureGuard lining and scuff material and ThermoGuard lining, both made of recyclable materials. In addition, P-101 dry freight van interior panels are made of recyclable plastic, and

HDPE scuffbands are made from recycled plastic containers.

At Great Dane, responsiveness to customer requests for trailers designed to meet environmental initiatives are well underway. Collaborative efforts between Great Dane, its customers and industry partners to improve trailer aerodynamics, reduce drag and gain fuel economy are currently ongoing (see Inside Track: Aerodynamics, pg. 7).

The greening of the trucking and transportation industry is gaining momentum and the work being done to reach that objective is leading to the rapidly increasing adoption of environmentally friendly practices and technologies. The benefits are clear—including fuel cost savings and reduced dependence on foreign oil, and a cleaner world for everyone.

Corrosion Battling an Old Enemy With New Weaponry Contro

rom front walls to rear doors and from the roofline to the road, corrosion is an ever-present enemy to trailers. At Great Dane, however, proactive engineering and trailer manufacturing with corrosion resistance in mind is addressing this problem with a host of technologies and processes.

Great Dane has just introduced a total corrosion protection package, which now includes CorroGuard, a product that is extremely durable and resistant to de-icing chemicals, road debris, climate fluctuations, and ice and snow. Air tight and water tight, CorroGuard will not peel, crack, warp, flake or split under even the harshest of conditions, and it remains pliable over time and will withstand impacts from road debris.

Corrosion-resistant paint products already in use at Great Dane are undercoating compounds like Valspar's Dry-Flex, a soft and flexible film that resists stone chipping and temperature extremes while blocking moisture from reaching the steel components of the underbody. Another is Valspar's R-Cure, a two-step epoxy primer and urethane topcoat for dry freight van rear frames and platform trailers. Great Dane also uses a specially formulated hightemperature, hot-melt wax compound on crossmembers to effectively block corrosion by sealing steel from the environment.

Great Dane works closely with other suppliers to provide anti-corrosion solutions for customers. Prolam floors, Alcoa Wheel Products and Grote are just some of the vendors joining Great Dane on the forefront of corrosion prevention.

"Exposure to ice melting chemicals, stone and gravel impingement, wide temperature variations, rain and snow all contribute to a destructive environment that requires innovative and advanced technology for corrosion control," relates Chris Stolfe, Senior Manufacturing Engineer at Great Dane.

"Great Dane is also working hard to develop new technologies that will further enhance corrosion control," Stolfe adds. "New coatings are currently in testing, and other products and processes that will provide greatly improved corrosion resistance are also under development."





reat Dane is taking a proactive approach to developing, implementing and packaging a new set of high-tech communications options and capabilities currently available on its trailers. These efforts have resulted from working with strategic suppliers to provide a host of next generation on-board technologies.

"The idea behind the array of currently available communications technologies," says Dan Carter, project engineer, "is to develop solutions that are available now and for coming generations of trailer systems. Individually, collectively and by linking them to centralized enterprise management solutions, fleets have better knowledge of trailer operations, control over trailer security and the ability to reduce downtime, risk and costs."

Central to the on-board communications solutions on Great Dane trailers is the Meritor WABCO Enhanced Easy-Stop Trailer ABS ECU with InfoLink™, an information gateway that allows the tractor and trailer to communicate with each other. According to Meritor WABCO, Infolink bridges the gap between the vehicle and third-party

telematics devices and acts as a command center that processes vital information and sends it to computers and cell phones.

Information from the ABS ECU includes malfunction status, diagnostics and descriptions of stored or active faults, trailer mileage, VIN number, and user defined service intervals. Also monitored are brake lining wear and brake actuator over stroke limit warnings, trailer air reservoir supply pressure with a low pressure warning signal, trailer suspension weight and the activation of back up lights, alarms or steer axle lockouts.

Current communications systems allow for up to five additional on-board applications for data sharing. Among the linked on-board systems available on Great Dane trailers are the following:

- Meritor Tire Inflation System (M.T.I.S.) by P.S.I. with ThermAlert to provide the driver warning of low tire air pressure and elevated wheel end temperatures
- QUALCOMM Trailer GPS
 Communications System to offer
 visibility into utilization and security.

Automatic GPS location reports and alerts from cargo and door sensors can be generated and the system can be tied to a geofencing solution for defining approved geographical areas and receiving notification if a vehicle crosses a designated boundary. The GPS Communications System also enables reefer data systems to transmit crucial information such as unit set point, discharge, and return air temperatures and fuel levels.

• Confirmation of slider pin engagement on suspension systems

Great Dane's cutting-edge communications options represent a rolling platform highlighting the most production-ready on-board communications technologies in the industry. By taking advantage of technology that's already available, Great Dane has made the possibilities for enhancing the productivity, efficiency and safety of trucking operations virtually unlimited.

Experimental designs offer practical solutions for reducing drag and fuel consumption

Aerodynamics

eduction of diesel fuel consumption is a critical need from both an economic and environmental perspective for all types of trucking operations. Rising fuel costs, which represent one of the largest expenses for most fleets, require that manufacturers make an ongoing effort to find solutions for reducing this expense.

For many years, Great Dane has teamed with researchers, truck manufacturers and government agencies to develop practical solutions that can lead to fuel savings. The proposed solutions include changes to tractor-trailer designs to improve fuel economy by reducing aerodynamic drag. Indeed, the U.S. Department of Energy reports that a 1% increase in fuel efficiency for long-haul trucks will result in a yearly fuel savings of 100 million gallons of fuel, and more than 50% of energy expenditure by Class 8 trucks is in overcoming aerodynamic drag at highway speeds.

A recent manifestation of Great Dane's aerodynamics efforts is a pair of experimental designs developed and tested in response to customer demand. In collaboration with International Truck and Engine Corp., the OEMs have aimed to reduce fuel consumption by employing improvements in several key areas to effectively reduce drag. In particular, the following special features have been tested in the experimental trailers:

Experimental Design #1

- Side skirts (fairings), which automatically deploy at 35 miles per hour (mph) to reduce aerodynamic drag, but stow below 35 mph to improve ground clearance
- A tapered aft section to help keep airflow attached to the trailer body and a "cavity back" that increases pressure behind the trailer; both details reduce the trailer's "wake" and contribute to reduced drag
- Reduced overall height to limit frontal area and a dropped floor section at the rear to restore cubic capacity
- Smooth wheel covers to reduce drag associated with wheels and tires
- Single, wide-base tires for weight reduction

Experimental Design #2

• Fixed skirts (fairings) applied nearly

- the entire length of the trailer and over wheels to improve aerodynamics, particularly in the presence of crosswinds
- A tapered aft section to help keep airflow attached to the trailer body and a "cavity back" that increases pressure behind the trailer; both details reduce the trailer's "wake" and contribute to reduced drag
- A parabolic-shaped nose to reduce the affect of crosswinds
- Single, wide-base tires for weight reduction

Great Dane continues to work closely with industry leaders and corporate partners to make a difference in our industry and in our environment. As large fleets take the initiative to change, Great Dane is prepared with decades of experience, R&D expertise and cutting-edge technology to provide feasible solutions.



"The Wal-Mart experimental trailer incorporates important aerodynamic concepts into a functional design. While many of its aerodynamic features are experimental, they represent viable solutions that may be widely accepted and available in the future," said Charlie Fetz, vice president research and development at Great Dane.

Trucking Company Taking Care of Business with Super LT Reefers

ven customers have noticed," says Jerry Lovell, referring to the 280 Great Dane Super LT refrigerated trailers that joined the R.E. Garrison Trucking Company fleet in 2006. "Many of them track loads to be sure their products are transported at precise temperatures. In that regard, the performance of the new Super LT reefers we're operating has been exceptional, and when customers are comfortable their loads are being taken care of it can sell a lot of freight service."

For Lovell, a co-owner of Cullman, Alabama-based R.E. Garrison and the executive in charge of equipment purchasing, the approximately 325 Great Dane Super LT models already in the fleet – and more that have been ordered for 2007 – are a perfect fit for the carrier. "Most important," he says, "is the exceptional insulation in these trailers. We haul a lot of produce and the integrity of Great Dane's urethane injection process for insulating trailers creates a design that is free of voids. Combined with the one-piece Kemlite lining material, the design holds temperatures at desired set points."

Lovell also says that the light weight design of the Great Dane Super LT trailers is an effective choice for R.E. Garrison because it allows the carrier to handle heavy loads. "We try to gross 46,000 lbs," he explains, "so we need a trailer that is both as light as possible but also durable. The Super LT models meet those criteria with their combination of 4- and 5-inch aluminum and steel I-beam crossmembers on 8- and 12-inch centers, and the strong 1.38-inch deep, extruded aluminum smooth duct floor."

Other specifications of the Great Dane Super LT reefers at R.E. Garrison include Carrier Ultra XL refrigeration units and Hendrickson HKANT40K sliding axle/air suspension with

the manufacturer's QUIK-DRAW II air-assist pin puller and Surelok dump valve. This system is very popular with drivers, Lovell relates, and especially with the 50 or more females who drive for the carrier. In addition, eliminating the need to manually pull pins cuts down on injuries and workers' compensation costs.

Very pleased with the Super LT trailers as well is Walter Cornwell, Director of Maintenance. "We like the way they're built compared to other makes and models we've operated," he says. "In particular, the stainless steel rear frame and doors hold up very well and require minimal maintenance."

Also specified by R.E. Garrison to help decrease maintenance costs are the Meritor Tire Inflation System (M.T.I.S.) by P.S.I., and a Grote Long Life Light System with LED lamps. "We have not had maintenance concerns since placing these trailers in service," Cornwell states. "Even if we do have an issue, though, we're confident that Great Dane will be there

Great Dane and its Birmingham, Alabama branch in particular get very high marks for service from Cornwell. "Bubba Zaiontz, our sales representative, and all of the service and

parts people at the branch are very good to us," he states. "That's the most important thing – to be able to fall back on your suppliers after the sale – and in that respect Great Dane is exceptional."

With some of its 325 Great Dane Super LT reefers in service for three years, and more scheduled to join the fleet this year, R.E. Garrison is on its way to replacing all of its 800 trailers with Great Dane models. It's planned trade cycle for the units of five to six years puts the company in a position to purchase new Great Danes for many more years to come.

"To some degree shippers are judged by how their product arrives at their customer's facility," Jerry Lovell says. "At R.E. Garrison, we like

> Best Trucking Decision You'll Ever Make' because we believe when a customer entrusts their product to us, we owe it to them to provide durable. efficient and reliable

> > exclusively from Great Dane



Great Dane Super LT **FEATURE BENEFIT** Modular design combined with a Exceptional strength and longevity in a Offers the opportunity for increased lightweight refrigerated trailer payload and a consistently high resale value A competitively priced trailer to meet th demands of the long-haul truckload carri Combines the most popular specifica-ions with a select number of options Fully stainless steel rear frame with Provides maximum strength with recessed lights in the buckplate minimum maintenance; an anticorrosive material ront is covered by an 8.5-inch deep Provides maintenance-free area b Fully-welded heavy duty aluminum Takes the place of traditional steel frames and eliminates corrosion and cooling unit frame bleeding rust streaks that can appear around front wall rivets ive-inch deep extruded aluminum Contributes to a higher live-axle beam crossmembers in the bay area and stronger crossmember without increasing weight Available with ThermoGuard lining, Helps maintain insulation performance as



the trailer ages, lowering cooling unit run-time hours and helps maintain excess capacity; saves on cooling unit fuel



Alcoa Dura-Bright® Wheels with XBR™ Technology

lcoa Wheel Products has introduced its Dura-Bright® wheels with XBR™ technology. The new wheels replace the original Dura-Bright design, and according to the company offer the additional advantages of 53% more reflectivity and 74% more image clarity.

New Dura-Bright wheels with XBR technology feature the same patented treatment as original Dura-Bright wheels. The treatment, the company explains, penetrates the aluminum and becomes an integral part of the wheel, resisting corrosion and eliminating the need for polishing to maintain the shine, even after thousands of miles and many years of use, and hundreds of washes.

The difference between Alcoa's Dura-Bright wheels with XBR technology and other products that use surface coatings is that the Dura-Bright treatment won't chip, crack, peel or corrode.

With Dura-Bright wheels with XBR technology, brake dust, grime and oil residue wash off quickly and easily with a spray of soap and water. The wheels also combat liquid road de-icers and chemicals. Combined, this new technology allows truckers to keep wheels looking their best with less effort than required for any other steel or aluminum wheel.

Dura-Bright wheels with XBR technology also offer fleets and owner-operators all the same advantages and value of Alcoa forged aluminum wheels, including:

- Less weight for increased payload and greater fuel efficiency
- Better heat dissipation for extended tire and brake life
 - One-piece, forged-in-strength that is 4.5 times stronger than steel
 - Higher resale value (historically up to \$1,500 on trucks with regular Alcoa aluminum wheels, according to Alcoa)

Alcoa Dura-Bright wheels with XBR technology come with a five-year limited warranty against defects in materials, workmanship and corrosion. The newest offering from the supplier is the latest in a long line of aluminum truck, tractor and trailer wheels. The company, which invented the first practical aluminum truck wheel in 1948, continues to offer its latest technology – and the

widest selection of wheels and wheel accessories in the industry – to Great Dane customers.

CALCOA SURVEY TO SECURITY CALCOATED CALCOATED

Dura-Bright wheels with XBR technology (right) offer greater reflectivity and image clarity than the original design (left).

For more information on Alcoa Wheel Products, please visit www.alcoawheels.com or call 800-242-9898.



Hendrickson QUAANTUM[™] FX Trailer Suspension

alling it "the next step in suspension integration," Hendrickson Trailer Suspension Systems has introduced its new QUAANTUM™ FX system. The system integrates suspension components, including extended-service brakes and wheel ends, air springs and shock absorbers, in a single unit. QUAANTUM will initially be available in FX5 and FX7 models for vocational trailers and then phased into slider systems with SL5 and SL7 designs.

HENDRICKSON

Covered by a hubcap-to-hubcap limited warranty of five years, QUAANTUM systems feature long-life wheel ends and the proprietary P90TM spindle. The P90 spindle gives fleets the choice to use either wide-base single-tire or traditional dual-tire configurations and is designed to promote even lubrication for bearings. FX5 comes with the HNPTM wheel end, while the FX7 with the Hendrickson Unitized System (HUS®) wheel end extends wheel-end warranty coverage to seven years.

The HUS wheel-end features a unitized system that can extend service brake life, reduce maintenance and increase uptime by eliminating seal and bearing replacement. The HNP wheel-end system delivers a new hub/spindle design that utilizes ADI (Dura-Light) material to reduce weight and incorporates twin "N" inner bearings and an "R" seal to create a completely rebuildable wheel end. Both feature the patent-pending PRECISION320™ nut system and a patent-pending self-centering hubcap.

Factory installation of both HNP and HUS systems, the manufacturer says, helps lock out contaminates from the assembly process to increase bearing life and help reduce maintenance. The systems also employ Hendrickson's patented axle filter for additional protection from contaminates. In addition, the QUAANTUM FX self-centering hubcap features a tapped hole that allows attachment of an alignment tool or hubodometer without jeopardizing the integrity of the seal.

"Our exclusive HNP and HUS hub and wheel-end systems provide the advantage of outstanding versatility to accommodate today's growing complexity of tire technology," reports Jeff Shahan, program manager, Hendrickson Trailer
Suspension Systems.

"With the unique P90 spindle, durable hubs, precision bearings, high quality seals and extended-service brakes, shocks and air springs, Hendrickson's QUAANTUM FX systems create a long-life solution to meet the needs of today's fleets and owner operators."

Hendrickson HNP™ System

For more information visit www.hendrickson-intl.com.



Long Term Partnership: Finding Effective Solutions with Great Dane Trailers

// ith 135 multi-department retail and drug stores in 13 states, ShopKo is a household name for consumers in a number of mid-size and large U.S. cities. Delivering a wide range of goods to those locations is the company fleet of 516 Great Dane insulated dry freight trailers. The operation, which was started 35 years ago, has exclusively operated Great Dane vans since its inception.

"Shopko started specifying Great Dane trailers over 30 years ago," says Dan Tyczkowski, Fleet Manager of SVS/ShopKo Stores, headquartered in Green Bay, Wisconsin. "Almost all of the merchandise sold in our stores is delivered by our trailers and a fleet of 38 tractors from distribution centers in Depere, Wisconsin; Omaha, Nebraska, and Boise, Idaho.

"Our high trailer to tractor ratio is due to our operating structure," Tyczkowski continues. "At the highly automated distribution centers, every door is dedicated to a store and is fed by overhead conveyors. There is a trailer at each door being loaded, at least one trailer at every store and others in transit at all times."

Great Dane vans in the ShopKo fleet date from 1985 to the newest 2007 models. "We plan for a minimum of 20 years of service from our trailers," Tyczkowski explains. "The newest units in the fleet are our 41 i-Van models that were delivered in the fall of last year as replacements for 1984 and 1985 units."

Insulated dry vans have been a mainstay at ShopKo because some of the merchandise hauled in the trailers is temperature sensitive. "With Great Dane's help, first using insulated Classic Freight Van models and now i-Vans designed with press-panel insulated technology and modular wall construction, we found that we could protect the cargo," Tyczkowski relates. "When it

was introduced two years ago, we realized that the standard I-Van model met almost all of our needs."

To address other considerations its has for trailers ShopKo's new i-Van models feature Great Dane's PunctureGuard scuff band, which helps protect walls during loading and unloading. Another concern for the fleet is corrosion because of the northern climates it operates in regularly.

"We spec Todco Weather Tite roll-up rear doors and stainless steel rear frames, headers and bumper assemblies to help fight corrosion," Tyczkowski explains. "We also paint upper and lower rails and install double Mylar tape on all steel to aluminum bottom rail connections as extra protection.

"Previously," Tyczkowski continues, "our trailers were specified with a painted undercarriage to add an extra layer of corrosion protection where road debris chips the surface and opens the door to moisture. On the new I-Vans, we've specified Valspar's Dry-Flex undercoating, which is flexible. It can even be hit with a hammer and not expose bare metal.'

Dan Tyczkowski, Fleet Manager with SVS/ShopKo Stores, stands by his Great Dane i-Vans

ShopKo's trailer specifications also address the fleet's desire to eliminate as much maintenance as possible. "Our goal is to minimize service needs and only perform routine maintenance annually on our trailers,"

> Tyczkowski notes. "For that reason we've specified items such as a Truck-Lite sealed wiring harness and LED lamps, as well as the Meritor Tire Inflation System (M.T.I.S.) by P.S.I.'

Meritor is also the supplier of ShopKo's TP trailer axles and its RHP-11 slider/air suspension package, as well as its EX225 disc brake package. "As a trailer ages," Tyczkowski notes, "S-cam

bushings and slack adjusters can rust, but the Meritor disc brake is an enclosed unit, in which all mechanisms are lubed and sealed at the factory. In addition, frozen lower brake shoes are fairly common during colder months in this part of the country but the disc brakes are not known for freezing."

Decisions like those made to adopt disc brakes are a clear indicator of the forward thinking that makes ShopKo such a valued customer, says Ron VanderMause, VP at Trudell Trailer Sales' Green Bay branch. "ShopKo is a very professional company managed by quality people," he states. "They

have been a true business partner for many years, and throughout our long standing partnership we've enjoyed working with them."

"Great Dane trailers have been the best choice for our operation," Tyczkowski concludes, "because the manufacturer has the capability to build what we need and because of the excellent long term partnership ShopKo has with Trudell Trailer Sales. Everyone in their sales, service and parts departments works hard to meet our needs. With Great Dane, there's never an issue, only solutions."

"With Great Dane, there's never an

issue, only solutions."

Dan Tyczkowski, Fleet Manager

Great Dane i-Van **FEATURE BENEFIT** Modular design with press-panel Provides the smoothest flattest technology walls in the industry with minimum interior fasteners, as well as the most thermally efficient insulated van in the industry Standard fiberglass reinforced Significantly reduces the number plastic lining installed the full of fasteners as well as the maintelength of the trailer nance time and cost over traditional plywood lined insulated vans Traditional comb-style rear frame Provides protection for hinges, lights, lock rods and door hardware, while also providing super or stiffness and rack resistance Submerged roof bows on 32-inch Reduces heat transfer and provides maximum strength and centers thermal efficiency, since the roof bows do not contact the roof skin Optional one-inch dyplast foam Provides a more thermally effiinsulation in floor in cient insulated floor versus a tracombination with a 4.25-inch ditional spray foam between upper coupler crossmembers .050-inch PunctureGuard liner Provides puncture-resistance in available as an option an ultra-thin liner to extend the life of the trailer



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Corrosion Prevention

Solutions for Adding Life, Reducing Maintenance Costs and Improving Appearance

id you know that Great Dane now offers a complete package of comprehensive corrosion prevention solutions, including:

- CorroGuard coating for superior longterm protection from rust and corrosion on suspensions and support gear
- Alcoa Dura-Bright Wheels, now featuring XBRTM technology, a patented treatment that penetrates the aluminum and becomes an integral part of the wheel, resisting corrosion
- Grote Long Life Light System with LED lights; a completely sealed system that prevents moisture intrusion
- Stainless steel rear frames, which are rust resistant to help ensure reduced maintenance, longer life and a superior appearance
- Composite swing-type rear doors on dry freight vans have galvanized steel exterior and interior skins and a resilient polymer core, which eliminate corrosion issues associated with moisture absorption in plywood cores.

Great Dane's R&D, engineering and manufacturing experts are dedicated to helping combat corrosion and its detrimental effects on your trailers. New and already available corrosion solutions from Great Dane will add life to trailers, reduce costs and provide for a superior appearance and image on the road.



CorroGuard provides superior protection from corrosion on suspensions and support gear.

Advantages of CorroGuard

Did you know . . . that CorroGuard is extremely durable and resistant to deicing chemicals, road debris, climate fluctuations, and ice and snow?

Did you know . . . that CorroGuard is air tight and water tight, and will not peel, crack, warp, flake or split under even the harshest of conditions?

Did you know . . . that 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?

Did you know . . . that CorroGuard remains pliable over time and withstands prolonged UV exposure?

Did you know . . . that CorroGuard is 100% solids, does not contain VOCs (Volatile Organic Compounds) or solvents so it is not carcinogenic, ozone depleting, or harmful if inhaled?

