EXTRA MILE

Carrier TRANSICOLD
Turn to the Experts.™

2006 - Issue 2

Introducing Niagara™

The New Workhorse in Trailer Refrigeration

Powerful and proven performance.
A modern new look.
Solid construction.
Enhanced sound quality and superior service access.

Those terms describe the Niagara™ trailer refrigeration units unveiled by Carrier Transicold at the 2006 Truck Show in Las Vegas.

The first evolution of Carrier's highly successful X-Series single-temperature trailer refrigeration series since it was introduced in 2000, Niagara builds on a tradition of reliability and durability and, once again, sets a new standard in transport refrigeration.

Niagara units have improved sound quality due to use of integrated door seals, acoustic insulation, a redesigned grille and quieter gearbox.

"Without losing one iota of the current X series' benefits and reliability, the new units feature improved aesthetics and superior serviceability," said Mike Murdock, product manager – Trailer Products.

"The current X series set a standard for performance in conventional refrigeration technology," Murdock added. "Now Niagara takes it to a new level."

Unifying refrigeration units in the X series with a single name, four models will succeed the current versions when the Niagara units go into full production later this year. The new models are the Niagara 2500A, Niagara 2100A, Niagara 2100 and Niagara 1800, replacing the Ultima XTC™, Ultra XTC™, UltraXT™, and Extra XT™, respectively. The model numbers relate to capacity in BTUs at deep-frozen. Carrier opted for the simplified naming convention, based on dealer and customer feedback.

Beauty More than Skin Deep

No mistaking their new appearance, two Niagara units were unveiled at the Truck Show: one with a standard matte-white finish and black grille and one with a smooth high-gloss white finish and optional chrome grille, befitting the glittering Las Vegas location of the show.

The Niagara unit's new skin package is a redesigned housing with panel doors made of an improved material. Body panels are made of advanced DuraShell™ 2 material, a Thermoplastic Olefin (TPO) composite that has structural integrity comparable to the original DuraShell, but

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with triple the impact strength, double the UV light resistance, 50 percent more thermal stability and 20 percent better heat resistance. The DuraShell 2 twin-sheet panel construction, acoustic foam on the door interiors and integrated door seals help to contain noise output.

Whether standard black or optional chrome, the grille has wider openings that reduce airflow resistance, helping to improve sound quality. For additional sound reduction, a composite bottom panel is available as an option.

Service technicians will appreciate the improved access to mechanical parts. Side doors open all the way to the top of the unit, an exclusive from Carrier, and each opens with a single latch. Front door panels swing open from the center with a single latch release.

Performance of a Champion

Carrier's X series units have long had a reputation for solid performance, high capacity, exceptional durability and reliability. Niagara models continue that tradition.

All deliver high capacity that can be matched to the job at hand. Niagara 2500A and 2100A are equipped with the industry-leading Advance™ microprocessor control. Niagara 2100 and 1800 come with the standard control. Whether equipped with a standard control or the Advance microprocessor, the control box is larger with a tilted display that is easier for drivers and technicians to read.

Niagara units continue the fuel-saving tradition inherent in the design of Carrier X series systems. It starts with the combination of a high-performance compressor and a fuel-efficient 2.2-liter DI (direct injection) engine. With its six cylinders, the compressor can move more refrigerant, while the engine runs at 15 percent lower RPMs on average. Lower RPMs keep fuel consumption down, but the greatest fuel economy comes from shorter run cycles resulting from the high-performance cooling system. Carrier's air management systems and UltraFresh 3™ are key to this high performance.

The air management system generates both high airflow and "air throw," creating more capacity, faster pulldown and faster recovery from door openings. By cooling the trailer faster, the refrigeration system requires less engine operating time and, hence, less fuel. UltraFresh temperature management plays a role in reducing fuel consumption, using microprocessor-based logic to sense supply- and return-air temperatures to modulate refrigerant flow and control the displacement of the compressor. It has the unique ability to throttle down or "unload" two or four of the six cylinders to reduce capacity when not required. This results in 33-percent and 66-percent reduced-capacity states for increased fuel economy in continuous-run operation.

Carrier's proven formula for fuel efficiency and product protection gets pushed further with the Advance control's programmable IntelliSet™ option, which harnesses the ProductShield™ temperature monitoring capability to fine-tune operation and performance.

With ProductShield, a Carrier exclusive, strategically placed temperature sensors monitor conditions inside and outside of a trailer so that the Advance microprocessor can judge when it's time to use continuous-run mode or when auto-start/stop is best for a given commodity being hauled at any given time of year in any climate. This automatic, intelligent control provides unsurpassed fuel management – the kind that's only available from an X-series unit *of any generation.*

Get the Latest Software for Your Advance™ Microprocessor

Do you generally upgrade your PCs with the latest operating software – be it Windows, Mac or Linux? What about your trailer refrigeration systems?

At its heart, Carrier Transicold's Advance™ control is a computer – a microprocessor that is programmed just like a computer operating system. That means functionality and enhancements can be added through software upgrades.

The "firmware" that runs the Advance microprocessor has been improved multiple times since the Advance micro was first offered. And the latest system generation – firmware update 4.04 – is now available through Carrier Transicold dealers or via download from Carrier's TransCentral™ Web site.

"The new software provides more than a dozen worthwhile improvements and tweaks to the Advance control," said Mark Fragnito, product manager – Electronics.

Chief among them are refinements to the ProductShield™ feature's settings, giving greater operational customization by the user. When using the feature's Econo mode, "off" is now a variable that can be applied when setting maximum and minimum ranges. In other words, the user can opt to not have either a minimum or a maximum point at which the unit switches from start/stop operation to continuous run. This variable can result in added fuel savings in certain situations, according to Fragnito.

Additionally, new logic enhances temperature control, "making the system smarter about determining if the temperature is moving up or down inside the trailer," Fragnito added.

Other enhancements aid technicians in remedying certain fault conditions. For example, in the event of a low or dead-battery, improved MessageCenter™ display descriptions help technicians make faster diagnoses. The "Check at Next Service Interval" message for general, non-critical conditions can now be changed to any user-defined message, using the ReeferManager™ program, version 3.02.

New control logic has been added to the pretrip self-diagnosis function, providing extra protection against a user hauling a load when an alarm condition has not been remedied. Also, the way the system handles Low-Oil and Low-Coolant level sensors has been changed so that once either of these alarms is triggered on, they remain active until the alarm is cleared or the unit switch is turned off.

As the only trailer refrigeration control that uses PC card simplicity for software upgrades, operating parameter setup and data downloads, Advance firmware can be easily installed by a dealer, or user, via a Program PC card. The firmware can be obtained through the TransCentral site using the ServiceManager™ or ReeferManager programs.

Carrier Transicold Recognized for Performance and Products

No doubt about it, Carrier Transicold is on a winning streak.

Outstanding performance on behalf of the entire dealer network was driven home by "Winners. Never Quit," the theme of the annual dealer meeting and a mantra for the year ahead. During the meeting, 32 North American and Latin American dealerships were recognized for sales performance, significant investments in facilities and achievement of business development goals.

Continuing that winning theme, Carrier Transicold recently received significant accolades from outside of the organization.

At its 2006 Annual Maintenance Council Meeting, Penske Truck Leasing named Carrier Transicold its Most Improved Vendor – Accessories, a category that includes refrigeration units, lift gates and general service vendors. Carrier was selected based on improvement in systems and procedures, improved service performance and increased field training exceeding 5,700 man-hours in 2005.

"We are thrilled to receive such an endorsement from a customer with the high standards of Penske," said Tom Ondo, general manager, Truck/Trailer/Rail Americas. "It's really a tribute to our dealers, whose enthusiastic and strong support of Penske field locations is without equal."

Carrier also received its first Technical Achievement Award from the Truck Writers of North America (TWNA) for its Deltek™ hybrid diesel electric technology. In selecting its annual winner, TWNA seeks innovative products that became commercially available in the previous calendar year and advance the art of trucking in some significant way.

Putting Vector 1800MT™ Units to the Test

Maines Paper & Food Service Pilots Program Proving Effectiveness of Electric Transport Refrigeration Units

One of the top independent food service distributors in the country, Maines Paper & Food Service, is playing a leadership role in identifying new technologies and methods to save energy and reduce exhaust emissions through a demonstration project backed by the U.S. EPA and the State of New York.

The project is the first of its kind to supply grid power to electric hybrid trailer refrigeration units, or eTRUs. And Vector 1800MT™ multi-temperature units from Carrier Transicold are playing a key role, potentially saving thousands of gallons of fuel per year for Maines. By its conclusion, the study may ultimately lead to a transformation of how food distribution centers and others manage the loading process for perishable products.

The project is being implemented at Maines' flagship distribution center in Conklin, N.Y., a facility located near Binghamton along the Susquehanna River in south central New York, just north of the Pennsylvania line. It is being put together with co-funding assistance from the U.S. EPA and the New York State Energy Research and Development Authority (NYSERDA).

When the installation is complete later this summer, Maines will be able to start documenting its ability to reduce air pollution, noise and diesel fuel use for NYSERDA and the EPA, agencies that support a variety of trucking industry-related initiatives aimed at meeting current and future environmental and energy needs.

The project brings together numerous leaders in the transport industry working cooperatively on Maines' behalf: Shurepower LLC serving as general contractor; New West Technologies LLC for engineering and consulting services; New York State Electric & Gas Corp. providing three-phase power to the site; Great Dane supplying the trailers, and Carrier Transicold.

"It's all about partnerships," explained John Penizotto, Carrier's regional sales manager on the project.

From Loading Docks to Ship Docks

From nine distribution centers Maines supports restaurants, healthcare and educational facilities and other food service customers in 35 contiguous states throughout the Northeast, Mid-Atlantic, Gulf States and the Midwest. The Conklin facility, which is also headquarters for Maines, is a major provider to the cruise ship industry operating out of the ports in Boston, New York, New Jersey and Philadelphia.

In Conklin, Maines is upgrading and installing electrified loading docks and 10 parking spaces for eTRUs as part of the demonstration project. Ten Vector 1800MT units are being added to the Maines fleet, installed on Great Dane trailers based at the facility.

Claude Boisson, vice president of operations for Maines, has high expectations for the project. He sees it especially helping with the cruise ship work, which "doesn't fall into the mold of regular business."

Trailers destined for ocean liners start loading early in the week for weekend delivery to the ports. "There is a lot of attention to detail," Boisson explained, "double checking and triple checking for accuracy." And all throughout that time, the trailer refrigeration systems need to run to protect the cargo. Without electrification, that means burning diesel.

Vector Technology Makes it Possible

The Vector 1800MT unit is Carrier's new hybrid diesel-electric system for the North American marketplace. It does away with conventional mechanical components such as belts, pulleys and clutches and instead uses electricity from a high-performance generator to run the compressor, evaporator and condenser fans and the heating system.

Because the Vector 1800MT unit is electric, it can be plugged into an AC power supply when the trailer is parked, and the diesel motor that drives the generator can be shut down, totally eliminating fuel consumption and emissions from the refrigeration system. A 460-volt power supply and proper connections are all that are required.

That's where Shurepower comes into the project, according to Joe Licari, director of Eastern Operations for Shurepower, a company known for its shore-power truck electrified parking system that provides long-haul drivers with grid-based electricity, cable TV and Internet connections so they eliminate idling and save fuel during mandated rest periods – a similar concept.

Maines already had some existing electrical connections, but they needed to be modernized and upgraded for a higher amperage load. Additionally, cabling needed to be run from the Vector units to the back of the trailers so that the units can be plugged into receptacles when backed into the loading docks. Carrier Transicold of Upstate New York handled the trailer wiring needs.

Accountability is Key

For Maines, Shurepower is also setting up a control system to monitor electric consumption and provide third-party verification of emissions reduction.

While fuel savings were a driving force in the rationale for the project, the continued increases in the price of diesel fuel simply strengthen the case.

In laying out the rationale for NYSERDA and the EPA, Shurepower's feasibility study included an economic analysis of the fuel savings likely to result from the project.*

According to the report, a single eTRU switching to shore power during mandated 10-hour rest periods will realize a diesel fuel savings of approximately 2,200 gallons per year. Even after the cost of electricity is factored in, a savings of $3,284 to $5,489 per year, per truck is estimated. The report also points out that because eTRUs require less maintenance than conventional mechanical refrigeration units, the anticipated maintenance costs will be an estimated 30 percent less, resulting in further savings.

With such potential savings, as well as reducing emissions and sound output from idling trucks, it's no wonder Boisson said, "We're eager to start the testing."

**See the full project proposal, including detailed economic analysis, by checking the link at www.shurepower.com/shureRD.htm.*

Maines' flagship distribution center in Conklin, N.Y

With Pre-Owned Trailer Units

C-P-E-C Spells "Confidence"

Carrier Transicold introduced Certified Pre-Owned Equipment Coverage (CPEC) several years ago to give customers added comfort with and confidence in the purchase of used Carrier trailer refrigeration units.

Starting this year, CPEC (pronounced SEE-pek) has been improved and expanded. Here, Joe Hock, national service manager and the architect of Carrier's entire RoadCare™ customer support program, of which CPEC is a part, explains how the program works.

EM: What exactly is CPEC?

Hock: CPEC is unlike any existing coverage program in the refrigerated transport industry. It provides major component coverage on previously owned trailer units, with service anywhere Carrier Transicold dealers are found in North America.

EM: For whom is this coverage intended?

Hock: Everyone who purchases a previously owned Carrier single-temperature trailer refrigeration unit should consider it. This can be an owner/operator buying a single unit or a trucking firm purchasing an entire fleet of second-hand units from another firm.

If you are a seller, you should also consider adding the coverage, which is then transferable to the buyer.

Buyers will enjoy the security of knowing that if anything goes wrong with the covered major components it will be taken care of, just as it would with a new unit under warranty. No one else in the business offers this kind of coverage.

EM: How long is the coverage?

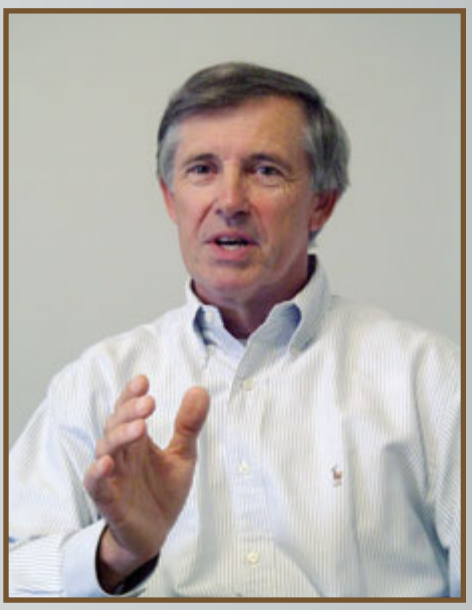
Hock: The program is available in two tiers. Most will want to consider the standard one-year/2,000-hour coverage. It covers parts and labor for engine and compressor, less accessories, and the microprocessor. Progressive damage and consumables related to a repair caused by a covered failure are included. The short-term CPEC for 90 days/500 hours is our value-oriented component-coverage option. In both cases you are covered for whichever comes first, the time period or engine hours.

EM: What's new about CPEC?

Hock: For one, we've lowered buyer cost significantly. We've also raised the threshold ceiling on the program. The original program only certified equipment that was up to five years old and had less than 8,000 engine run-hours. Now coverage can be extended through a unit's eighth year and up to 16,000 engine run-hours. That's entirely a reflection of the high reliability of Carrier units.

EM: What does it cost?

Hock: Charges for the coverage vary depending on the term length – regular or short-term – and the age of the equipment. And, there is a nominal charge that covers a very rigorous 37-point qualification inspection performed by the dealer. The cost of this varies somewhat, depending on the type of controller used – standard or Advance™ microprocessor. Also, units with more than 12,000 engine run-hours require an engine compression test, which also helps assure reliability, but adds a small amount to the qualification.



Joe Hock

It's best to talk about pricing with a dealer, who will explain how the fees break out based on the particular equipment being purchased. But as I indicated, we've lowered the prices, and we believe most everyone will consider them very reasonable.

EM: Is there a deductible?

Hock: Yes, $500, and it's applicable to component repair or replacement that may cost as much as $10,000 or more.

EM: What's the bottom line for the customer?

Hock: You get the ultimate peace of mind from knowing that the unit has had a very thorough examination by trained professionals and that it met strict performance requirements established by Carrier. Plus, in the event that it's needed, you'll get warranty service and major-component repairs virtually anywhere in North America. For sellers, CPEC can also add to resale value of a unit, because the warranty is transferable.

And, did I mention that CPEC is exclusive to Carrier?

EM: Yes you did, thanks.

ComfortPro™ Cruisin' Around

Round, round, get around. I get around, Yeah!
Get around, round, round. I get around.

While it will take a lot to match up with the Beach Boys' seasonal touring regimen, Carrier Transicold has hitched a ride on the bandwagon of America's Traveling Truck Show, going from town to town, now and right on through the endless summer of 2006.

Billed as the longest, largest trucking industry trade show, it hauls an exhibit for a 5,000 mile road trip, setting up in 19 states to reach thousands of over-the-road drivers at truck stops, their homes away from home. Having started where the California girls live back in April, the show hit the East Coast this month and will work its way down through the southern states, arriving in Texas by mid August.

In addition to music, entertainment and fun, the events showcase new Class 8 trucks, engines, trailers and towing products, components such as suspension and braking systems, and services. Carrier's new ComfortPro™ Auxiliary Power Unit (APU) stars in 10 of the 20 tour destinations, which take place at select Petro Stops.

Based on proven technology, the ComfortPro APU is an anti-idling, fuel-saving solution that provides sleeper cab power and climate control – both heating and air conditioning. Made under exclusive arrangement with Teleflex, Inc., it is the culmination of four generations of products with more than 130 million operating hours in the field – more than any other APU. With the Carrier name behind it, when the ComfortPro APU air-conditions the sleeper cab, drivers will sing "In My Room" in cool comfort.

Because the show takes place out of doors, drivers can do more than just a little tire kicking. Instead of looking at static exhibits, they can hear the engines and watch the equipment run. For Carrier's part, a custom-made sleeper cab with a fully functioning ComfortPro APU is featured. Drivers can try the control module, feel the air conditioning, and learn first-hand about the ComfortPro APU's other features, such as battery charging, engine heating and exclusive WinterWatch™ protection.

While attending America's Traveling Truck Show, drivers also have a chance to enter the Trucker's Dream Package Sweepstakes, which includes in its prize package, a $5,000 rebate on a ComfortPro APU. Other prizes include $5,000 in cash, NASCAR tickets, Petro Cash Cards, a 32-inch flat-screen television and much more.

America's Traveling Truck Show, which continues through August 17, was put together by Randall-Reilly, publishers of Commercial Carrier Journal, Overdrive and Truckers News, and producers of the Great American Truck Show. For more information, visit www.etrucker.com/atts/index.html. Click on the Trucker's Dream Package logo for information about the sweepstakes.

Finally, if you can't catch the wave when ComfortPro tours, don't worry, baby. Just cruise on over to your local Carrier Transicold dealer for a demonstration.

Schedule of remaining Truck Stops on next page.

AMERICA'S TRAVELING TRUCK SHOW

TRUCKER'S DREAM PACKAGE

Upcoming ComfortPro™ Tour Dates at America's Traveling Truck Show

June 13, 14, 15	PA, Carlisle	I-81, Exit 52 & I-76, Exit 226
July 5, 6, 7	NC, Mebane	I-40/85, Exit 157
July 11, 12, 13	SC, Florence	I-95, Exit 169 at TV Road
July 18, 19, 20	GA, Atlanta	I-285, Exit 12 at Donald Lee Hollowell Hwy
August 1, 2, 3	MS, Jackson	970, I-20 at West Frontage Road
August 15, 16, 17	TX, Weatherford	I-20, Exit 409 at Clear Lake Rd.

Show hours at all stops are from 1 to 7 p.m. and there is no admission charge.

Carrier Names Eduardo Andrade to Lead Auxiliary Power Unit Business

With a career at Carrier Corporation spanning more than a decade, Eduardo Andrade has been promoted to business manager – Special Products for Carrier Transicold. In this capacity he leads the new auxiliary power unit business by providing strategic direction for design, sales, marketing and service. He took on the new responsibilities in May, but has been active in Carrier's pursuit of an APU business for several years, having led related market and product analysis initiatives.

Eduardo Andrade

Andrade joined Carrier in 1995 as a development engineer in the Corporate Technology group, investigating applications of alternative refrigerants, among other projects. In 1997 he moved into the transport refrigeration business, leading a Carrier Transicold team developing a new unit targeting the European market. As a senior project leader, he later managed the core development team that introduced the Advance™ microprocessor controller.

Later positions included marketing manager, for Carrier Refrigeration Operations; product manager – Truck Products for Carrier Transicold North American Truck/Trailer; general manager, Carrier Transicold Brasil, Ltda.; and most recently, Carrier Transicold global product manager – Large Bus.

He received his Bachelor of Science degree from Universidade Católica, Rio de Janeiro, Brazil, in 1992, followed by a master's degree in mechanical engineering from Purdue University in 1995 and an M.B.A. from Syracuse University in 1999.

The Extra Mile

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Visit our website at: www.trucktrailer.carrier.com

Please send your comments and story ideas to:

Editors: Anthony D'Angelo
anthony.dangelo@carrier.utc.com

Don Mansfield
don.mansfield@carrier.utc.com

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