

APRIL 2013



# ContainerLINE®

Outsold  
the competition  
five years  
in a row.

PRIME LINE



**The Champ**



## Winning Sprints and Marathons



As the message on our cover suggests, in the first five years since we introduced the energy-efficient PrimeLINE® container refrigeration unit to the marine shipping world, it has left all rivals in its wake.

In that relatively short sprint, the installed base of PrimeLINE units grew to become the second largest, only behind the long-time industry-leading Carrier ThinLINE® unit, thanks to broad customer support for the PrimeLINE's technology and reliability.

While we are proud of PrimeLINE's sales leadership, to our customers there is an even more meaningful measure by which PrimeLINE wins: Performance, which is why we've dedicated our cover story to this topic (page 3). Fleets throughout the world have come to depend on the PrimeLINE unit to protect refrigerated cargo while helping to hold the line on energy costs and improve their environmental profiles.

By choosing efficient refrigeration units, shipping lines reduce the amount of power generated to run them and cut a proportionate amount of emissions related to power generation, while also conserving bunker fuel.

Again, take a look at the PrimeLINE's track record. The global fleet of PrimeLINE units commissioned just over the past five years has already saved untold tons of bunker fuel while, by our estimates, will eliminate roughly 5 million tons of carbon emissions in their lifetime of use relative to prior standard performance. Fuel savings, emissions reduction and PrimeLINE's outstanding refrigeration performance – it's a triple win for our customers!

Carrier Transicold is solidly vested in the global container shipping industry, and as leaders – in both technology and customer base – we can make a difference when we develop greener solutions, as our PrimeLINE and PowerLINE platforms (story page 6) prove and our award-winning NaturaLINE™ platform is demonstrating in its sea trials.

Providing winning solutions for our container customers is something we've done for more than 40 years. As with track and field events, there are sprints, marathons and many tests of skill and strength. Carrier Transicold products, like our all-around athlete the PrimeLINE unit, perform like champions for our customers from the starting block to the finish line.

**Kartik Kumar**  
Director of Marketing and Strategic Planning  
Global Container Refrigeration

## NaturaLINE™ Technology Named Innovation of the Year



Carrier Transicold's NaturaLINE™ natural refrigerant container system was recognized as the Innovation Technology of the Year at the prestigious Containerisation International 2012 Awards ceremony.

The 2012 program had a record number of high-quality entries across all categories, according to Containerisation International, a leading monthly magazine published by Informa Plc.

Carrier Transicold's NaturaLINE system was the only refrigeration technology recognized in the program, which was judged by a seven-member panel representing a cross-section of the supply chain, logistics and shipping industries.

"The judges were impressed with the breakthrough technology encompassed in the design of this new product, which will contribute enormously to reducing carbon emissions while allowing more cargo to move in maritime containers," according to the publisher.

"NaturaLINE responds to our customers' need for increasingly sustainable shipping options," said Kartik Kumar, Global Container Refrigeration director of marketing and strategic planning. "Having made a significant investment into the design innovation, engineering and manufacturing processes that went into the development of the NaturaLINE unit, it is especially rewarding to achieve this industry recognition."

The award was presented in October during a program commemorating the 45th anniversary of the Containerisation International Awards. Paul den Houdijker, Container Products Group managing director, EMEA, accepted the award on behalf of Carrier Transicold.

The Containerisation International award is not the first for NaturaLINE. Last fall, the NaturaLINE unit also achieved "Highly Commended" recognition in the Lloyd's List Global Awards program, and the year prior, NaturaLINE technology won the 2011 Innovation Award for a New Product in the IFW Awards program.



Carrier Transicold's Paul den Houdijker, center, accepts the Containerisation International Innovation Technology of the Year award from Richard Meade, editor of Lloyd's List (left) and Gavin Esler, BBC journalist and host of the 45th annual Containerisation International Awards program.

# The Champ

## 5 Years Since its Introduction the PrimeLINE® Unit Leads



Only the Olympic decathlon winner earns the distinction, “World’s Greatest Athlete.”

A grueling and highly competitive test of strength, endurance and skill, the decathlon challenges participants to perform at their best in 10 events. Only the strongest, nimblest, toughest and best all-around performer wins.

Such is the case with Carrier Transicold’s PrimeLINE container refrigeration unit. By nearly all measures it is best-in-class, leading the industry as the champion all-around performer in a field of “wannabes.”

Smart fleets select the PrimeLINE unit for its winning refrigeration performance and its energy efficiency. Five years after its introduction, PrimeLINE is still the pacesetter, while others lag behind.

### Energy Efficiency



Since its introduction, the PrimeLINE unit has left others in the dust as the most energy efficient container refrigeration unit ever offered. Today, the PrimeLINE unit still commands a lead where it matters most.

“To understand energy efficiency in container refrigeration systems, you must consider both part-load and full-load performance,” said Kartik Kumar, director of marketing and strategic planning, Global Container Refrigeration. “Full-load performance is the most demanding part of the refrigeration process and always consumes the most power.

“No refrigeration unit on the market today provides full-load performance as energy efficiently as PrimeLINE. Anyone can deliver efficient part-load performance, when the refrigeration system is essentially coasting, but when you take the voyage in its entirety of full-load and part-load performance, the PrimeLINE unit wins.”

The PrimeLINE unit’s efficiency is attributed, primarily, to its significantly advanced digital scroll compressor – the only one on the market designed for R-134a in a container application. Exceptional efficiency results from its digital modulation (unloading), which minimizes energy usage, and its vapor injection system, which delivers more cooling capacity.

### Capacity



“Refrigeration performance is where the PrimeLINE unit truly excels,” said Kumar. “Compare PrimeLINE’s specifications to any other R-134a unit on the market – none deliver more cooling power than PrimeLINE.”

Additionally, the PrimeLINE unit’s best-in-class deep frozen capacity among R-134a units provides cooling down

to -31°F (-35°C), made possible, in part, by its electronic expansion valve.

“Some competitors tout low power consumption as a smoke screen to mask their inferior cooling capacity, which doesn’t match up,” Kumar said. “The PrimeLINE unit delivers powerful refrigeration capacity plus energy efficiency.”

### Pulldown



“The sooner that perishable cargo reaches the temperature setpoint, the better it will be for its overall quality, shelf life, sugar content and weight,” said Jim Taeckens, Carrier Transicold senior product manager.

The PrimeLINE delivers best-in-class pulldown – as much as 30 percent better than some units and about 10 percent better than its nearest competitor. Also the PrimeLINE unit achieves pulldown more energy efficiently than its competitors.

“The PrimeLINE unit easily bests all contenders when it comes to pulldown,” Taeckens said. “Its powerful hot-load pulldown capability is one of the leading reasons it’s a favored unit among the banana trade.”

“Refrigeration performance is where the PrimeLINE unit truly excels,” said Kumar. “Compare PrimeLINE’s specifications to any other R-134a unit on the market – none deliver more cooling power than PrimeLINE.”





# The Cham

## Temperature Control



“If there was just one thing that all container systems were good at, you would expect it to be the ability to precisely control temperature,” said Taeckens. “After all, isn’t this their main function?”

But temperature management for a diverse range of cargoes being transported through all latitudes of climate is anything but simple.

“Here again is another area where the PrimeLINE unit excels,” Taeckens said, noting that the unit’s electronic expansion valve and Micro-Link® 3 control software work together to manage stable temperatures within tolerances as narrow as +/- 0.25°C.

“Other systems struggle with temperature control,” Taeckens said. “We’ve seen some newer systems that purport to deliver a high level of control, but in test situations the tolerance has been shown to be +/- 1.5°C, which customers tell us is simply unacceptable.

The ability to heat is not always a first consideration when choosing a refrigeration system. With PrimeLINE units, an all-electric heating system provides efficient, quick heating when necessary, as opposed to hot-gas heating systems, which tend to be less effective in the coldest ambient conditions when heating is most needed.

“Customers looking for superb temperature management will always choose the PrimeLINE unit,” Taeckens said. “This is one of those cases where Carrier Transicold’s more than 40 years of leadership in container refrigeration results in the most accurate temperature control performance.”

“The PrimeLINE unit has been a solid performer,” said Ryusuke Kimura, senior vice president – Global Reefer Management, MOL Liner Ltd. “Its reliability has helped us hold the line on our maintenance budgets.”

## Airflow



Airflow is another area where the PrimeLINE unit commands undisputed leadership. With its aerospace inspired fan designed for optimized performance, the PrimeLINE unit is the only container refrigeration unit capable of providing airflow of 5,440 cubic meters per hour, cycling cool air the entire 40-foot container length to help minimize and eliminate potential hot spots.

“That’s 8 to 11 percent better than other units on the market,” said Taeckens, adding, “The more cool air circulating around the cargo maintaining its temperature, the better it is for the cargo, helping to prevent decay and loss of moisture and weight.”

## TCO, M&R, ETC!



As a system, PrimeLINE also performs consistently, making it one of the most respected units in terms of reliability. This is critically important to protecting cargo, whether it’s a \$10,000 load of bananas or \$1 million worth of pharmaceuticals.

“The PrimeLINE unit has been a solid performer,” said Ryusuke Kimura, senior vice president – Global Reefer Management, MOL Liner Ltd. “Its reliability has helped us hold the line on our maintenance budgets.”

“TCO combines acquisition cost, energy costs and M&R over the life of the unit,” said Taeckens. “As fuel prices have risen, energy has become the main contributor to the TCO of a container refrigeration unit. Only 10 years ago, acquisition cost was the largest part of TCO at around 57 percent, and energy’s share was about 28 percent, with maintenance and repair costs accounting for about 15 percent. Today’s fuel prices put energy costs at about two thirds of the TCO.”

Carrier’s more than 40 years of experience in container refrigeration also pays off in terms of the PrimeLINE unit’s rugged design to help hold the line on maintenance costs. For example, Carrier’s time-tested and patented eight-step electro-coating process, or E-coating, protects condenser coils against corrosion from salt, water and air, and degradation by UV light. The compressor and receiver have aluminized coatings for corrosion resistance.

Additionally, the PrimeLINE unit is supported by Carrier’s global network of nearly 430 Authorized Service Centers in every major and developing port.

“An investment in PrimeLINE technology is an investment in low-TCO – both in terms of efficiency and M&R,” Taeckens said. “And that can save significantly over the life of a unit – as much as 13 to 47 percent.”

## V for Victory ... and Versatility



Several additional factors help to further distance the PrimeLINE unit from the field, providing even greater versatility.

For example, with the addition of a humidity sensor, the PrimeLINE unit delivers dehumidification capability down to 50 percent, without breaking a sweat on energy consumption.

In customer tests, the PrimeLINE unit has demonstrated that it not only attains low humidity levels, but it maintains them consistently,” Kumar said. “Competitive units struggle to attain dehumidification setpoints, with wide variances once they reach the lowest levels they can go.

The PrimeLINE unit’s excellent energy performance can be further boosted with the addition of the optional QUEST power-saving mode. Where conventional refrigeration systems

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# Power Factor - Know the Facts!

control the supply air temperature, QUEST mode uses software controls to maintain the actual temperature of the commodity, reducing system runtime and saving energy in the process.

Additionally, PrimeLINE units can be equipped with eAutoFresh™ automatic fresh air ventilation, which saves energy by ventilating only “on demand” rather than constantly, as occurs with manual ventilation methods.

Just as PrimeLINE units circle the world in service to shipping lines of all sizes, they also run circles around the competition when it comes to the challenges that are most meaningful to our customers. By every important measure, the PrimeLINE unit is the reigning champion of the high seas.

## DEFINING A CHAMPION PERFORMER

|   |   |
|---|---|
| Exceptional Energy Efficiency                     | ✓ |
| Best-in-Class Capacity                            | ✓ |
| Deep Frozen Performance to -31°F (-35°C)          | ✓ |
| Best-in-Class Pulldown                            | ✓ |
| Best-in-Class Temperature Control to +/-0.25°C    | ✓ |
| Efficient Electric Heating                        | ✓ |
| Best-in-Class Airflow                             | ✓ |
| Total Cost of Ownership                           | ✓ |
| M&R Reliability                                   | ✓ |
| Best-in-Class Durability and Corrosion-Resistance | ✓ |
| 430 Authorized Service Centers                    | ✓ |
| Best-in-Class Dehumidification Option             | ✓ |
| QUEST Power-Saving Mode                           | ✓ |
| Automatic Fresh Air Ventilation                   | ✓ |



The term “power factor” has recently been tossed about by some container refrigeration system manufacturers when discussing refrigeration unit energy performance, and it seems to be creating some confusion within the market.

“Power factor is not the same as energy efficiency, and the two should not be lumped together,” said Kartik Kumar, director of marketing and strategic planning, Global Container Refrigeration.

“The power factor is a ratio of kilowatts to kilovolt amperes,” explained Suresh Duraisamy, Carrier Transicold senior product manager. “As such, power factor is something that changes based on variables such as load conditions.

“From an engineering perspective, the PrimeLINE unit’s power factors are appropriate for its design, but this is not a measure that we would compare against other units – our own or competitors – because it’s somewhat meaningless,” Duraisamy said.

“In simple terms,” he explained, “it’s like comparing the energy spent in climbing a 10-foot wall by going vertically up a 10-foot ladder, versus climbing a 15-foot ladder on an incline. The identical result is achieved, and the energy required is the same. The ladder represents the power factor, and for purposes of this example its size is of no consequence.”

“Moreover,” Kumar added, “we’ve seen competitors claiming their refrigeration systems have the highest power factor, but some of these claims are based on part-load operation, rather than a full range of load conditions.”

“Interestingly, some claim that their power factors allow more reefers to be used on a vessel or terminal, but they have ignored the kilowatt limitations of typical electric generators,” Duraisamy said. “This creates hypothetical, but unrealistic or wholly impossible scenarios.”

“When making decisions about container refrigeration systems, customers need to consider energy consumption based on real-world operations,” Kumar explained. “There is no single-number answer to what makes a great container refrigeration unit. Customers need to consider the full range of criteria, including refrigeration performance.”

# More Choices, More Fuel Savings With PowerLINE® Gen



For 2013, the PowerLINE® generator set platform has been expanded with two new models that are Carrier Transicold's most fuel efficient to date and also respond to new emissions standards in the United States.

The new models incorporate ecoFORWARD™ technologies that can reduce fuel usage by about one third compared to prior standard units, reducing operating costs and significantly extending distances generator sets can travel before refueling.

New PowerLINE units also comply with the 2013 Tier 4 emissions standard from the U.S. Environmental Protection Agency, which is required for new generator sets used in the United States and Canada. Carrier Transicold customers elsewhere in the world have the opportunity to choose between either the new 2013 models or the previous models, which were designed for compliance with the 2008 U.S. EPA standard known as the Tier 4 *interim* or Tier 4i standard.

"The diesel emissions standards for most of the world differ from the U.S. and Canada," said Charu Mahajan, generator set business manager. "In markets where the Tier 4i standard already meets or exceeds local emissions requirements, we will continue to provide our Tier 4i models for export as long as customer demand continues."

## What's New for 2013

A benchmark for the industry, PowerLINE diesel generator sets provide uninterrupted power to operate 460-volt ISO container refrigeration systems when used over land in intermodal applications. They are available in models that either mount underneath a container chassis (UG version) or clip onto the front of a refrigerated container unit (RG).

"Our approach with ecoFORWARD technologies was to take a holistic view of the system to improve overall performance while also achieving emissions compliance," said Mahajan, "The resulting generator sets do much more, while consuming less fuel."

The 2013 models introduce:

- Standard implementation of enhanced FuelWise™ functionality, a fuel saving technology that automatically switches the generator set between two speeds via a simple black box controller.
- A new ultra-high-efficiency 15 kW custom-designed permanent magnet generator (PMG) that pushes efficiency well beyond conventional generators.

While actual fuel consumption depends on real-world conditions, cargo and the specific refrigeration unit used,

Carrier's preliminary testing shows that the fuel savings on the new models ranges from 32 to 34 percent, testing in ambient conditions of 100°F (38°C), resulting in relatively short payback periods.

The new PowerLINE units also weigh about 30 pounds (14 kg) less than the previous units, helping to lighten the transit load.

Common to PowerLINE systems with ecoFORWARD technologies is a familiar 2.2-liter diesel engine based on Carrier Transicold's current engine line with its well-accepted speed sensor and electronic governor, enhancements introduced in 2008.

"Providing customers with a familiar, reliable engine was key," Mahajan said. "This helps our customers, who do not have to learn, operate and deal with complex new engine technology in the field. Equally important for our customers was to improve fuel economy for lower total operating costs."



*The new Tier 4 compliant PowerLINE generator set for undermount applications.*

## Achieving Compliance in North America

Performance improvements from the application of ecoFORWARD technologies reduced the required engine power by more than 20 percent putting the PowerLINE engine within the scope of EPA's Tier 4 standard for non-highway engines rated at 11 to 25 horsepower (8 to 19 kW). Under the EPA regulation for this class, particulate emissions must not exceed 0.4 g/kWh and NOx, and hydrocarbons cannot exceed 7.5 g/kWh. PowerLINE units not only achieve this, but also offer greenhouse gas reductions of up to 34 percent relative to previous standard units, as carbon footprint is commensurate to fuel consumption.

"The 2013 PowerLINE platform is also compliant with California standards upon purchase and for seven years thereafter without further modification," Mahajan said.



# ings erator Sets

## How FuelWise Works

After seven years, the California Air Resources Board (CARB) requires further emissions reductions for the engine class for units operating there. In response, Carrier Transicold is developing an optional engine emissions system (EES) for the 2013 Tier 4 PowerLINE models, designed to achieve compliance with CARB's ultra-low diesel emissions standard known as ULETRU. Tier 4 PowerLINE units will need to be fitted with the EES option by the end of the seventh year, if they are to remain in use in California.

### Current PowerLINE Model Line-up

*FuelWise*

#### 2013 Tier 4 Compliant

- RG15 Clip - ecoFORWARD\*
- UG15 Undermount - ecoFORWARD‡

**Standard**

#### Tier 4i Export

- RG 15 Clip\*
- UG15 Undermount‡

**Optional**

\* Integral fuel tank for the 2013 Tier 4 model is 120 gal. (454 liter), and 130 gal. (492 liter) for the Tier 4i model.

‡ Integral fuel tank: 68 gal. (257 liter); Options: 50 gallon (189 liter), 80 gallon (303 liter).

### Export Model Performance

The highly successful Tier 4i PowerLINE models have proven themselves to be workhorses of the industry.

The Tier 4i generation of PowerLINE units brought significant emissions improvements when they succeeded the earlier Tier 2 platform early in 2008. Later that year, the dual-speed feature, known today as FuelWise, was introduced and over the last several years became the most popular option for PowerLINE units.

"Fuel savings of about 27 percent are achievable with the Tier 4i units that leverage FuelWise option," said Mahajan, "Although that's less than our 2013 Tier 4 units with built-in FuelWise functionality, it's still quite significant."

"Therefore, for customers outside of the U.S. and Canada who continue to purchase Tier 4i units, we highly recommend specifying the FuelWise option," Mahajan said.

While actual fuel consumption and commensurate greenhouse gas reductions will depend on real-world conditions, such as cargo and the refrigeration unit is used, important benefits can be achieved with both the new high efficiency Tier 4 models with built-in FuelWise functionality and Tier 4i models with the FuelWise option.

"Regardless of which Carrier Transicold solution our customers choose for a particular region and its emissions standards, they will find that we offer a unit and solution where the investment in fuel-savings technology will result in a relatively short payback period," Mahajan added.

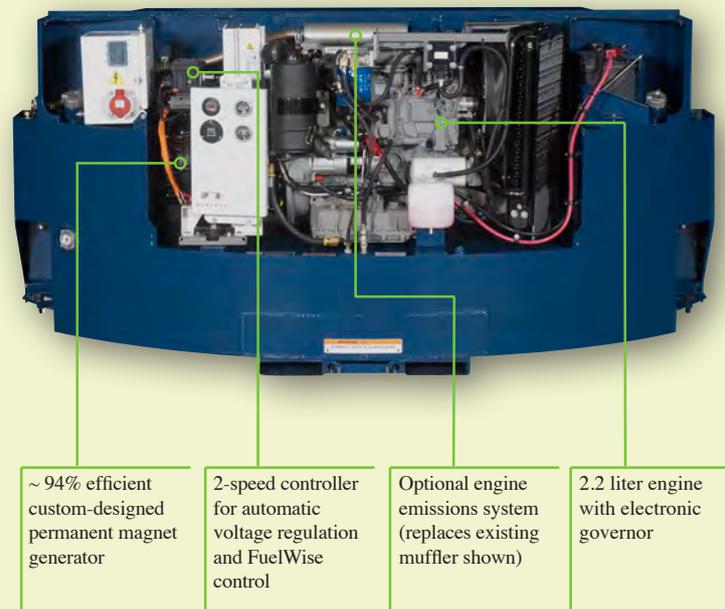
Whether included standard with the 2013 Tier 4 units or chosen as an option on Tier 4i export models, the FuelWise option achieves fuel efficiency by enabling the generator set to run at two speeds: 1800 rpm corresponding to 60 Hz, and 1500 rpm corresponding to 50 Hz.

"Once the engine slows down, the fuel savings begin," said Dave Smith, program manager.

"The original FuelWise option used with the Tier 4i models automatically switched the engine to 1500 rpm after the initial startup period," Smith explained. "In our Tier 4 models with built-in FuelWise functionality the generator set runs at 1500 rpm preferentially with the controller determining when to switch speeds, thus maximizing fuel savings while delivering requisite power and voltage for refrigeration unit operation."

Previously Carrier Transicold tested fuel consumption of Tier 4i PowerLINE units using commodities such as bananas, mangoes and melons at typical refrigerated setpoints. On average, fuel consumption was reduced by 26 to 28 percent using the FuelWise option. The permanent magnet generator of the new Tier 4 models with built-in FuelWise delivers a fuel efficiency boost of approximately 6 percent compared to Tier 4i compliant PowerLINE units fitted with FuelWise option.

"By reducing fuel consumption, distances traveled on a tank are extended and carbon footprint is reduced," Smith added. "Given the cost of diesel fuel and customer interest in environmentally sound choices, we always recommend the FuelWise option for Tier 4i units."



~ 94% efficient custom-designed permanent magnet generator

2-speed controller for automatic voltage regulation and FuelWise control

Optional engine emissions system (replaces existing muffler shown)

2.2 liter engine with electronic governor



# The Cold Reality of Sustaining Life in Antarctica

Sometimes Carrier Transicold container refrigeration systems are found where you least expect them.

One such location is among the most remote outposts on the planet, a small scientific research base called Palmer Station located on Anvers Island just west of the Antarctic Peninsula, the part of the polar continent that stretches up toward the Drake Passage and southernmost tip of South America.

Palmer Station is home to two 20-foot containers with new ThinLINE® units that serve as full-time stationary freezers for food storage. Installed in 2011 to replace aging units, they provide a vital service for a small, transient population that ebbs and flows each year like the ice in the frigid waters that surround the tip of the rocky jut where the base is located.

Palmer Station has been in operation for about 45 years and since 1990 has been part of the National Science Foundation's Long Term Ecological Research Program, a multi-disciplinary program that studies the effects of changing sea ice cover on the region's ecosystem, including marine bacteria, plankton and seabirds.

On-site instruments measure seismic activity, atmospheric characteristics and radio waves. Less than a mile away, on Torgersen Island, Palmer Station's solar-powered "penguin cam" keeps watch on a colony of 2,500 Adélie penguins.

Back at the base, the human population ranges from a

low of 16 in winter to as many as 44 in the austral summer when researchers flock to Palmer. They stay in dormitory-style bedrooms and eat in a cafeteria-style dining hall that is supported by a small kitchen. That's where the ThinLINE units play a role.

"The two milvans sit side-by-side near our main building and are used strictly for food storage," said Robert Farrell, Palmer area manager for Antarctic Support Contract, the prime logistical contractor to the U.S. Antarctic Program. "Milvan" or just "van," short for military van, is the nickname the staff has given to the refrigerated storage units at the station.

"We also have a walk-in freezer in our building, but the bulk of our frozen food storage is in those two vans. We keep about a six- to eight-month supply of food storage on station," Farrell said.

If you think freezers at the bottom of the Earth are unnecessary, you would be right. Palmer Station (64° 46'S, 64° 03'W) is not quite at the bottom. It's situated north of the Antarctic Circle, on a part of Antarctica that is relatively mild compared to the international research operations that ring the continent at latitudes further south.

"The United States has three permanent research stations in the Antarctic and two research vessels," Farrell explained. "Palmer is the farthest north and also the smallest of the three.



We have a station at the South Pole (Amundsen-Scott Station) and McMurdo Station on Ross Island, which is south of New Zealand.”

At the South Pole’s elevation of 9,301 feet (2,835 meters), where the annual mean temperature is -56°F (-49°C), Farrell said that mechanical refrigeration is not needed for the bulk of the frozen food. Further to the north at McMurdo, the largest U.S. Antarctic research station and a small city with its population just under 1,000, food is shipped-in via freezer containers once a year and stored in a large freezer building.

Thanks to the warmer ocean water, winter temperatures at Palmer Station average 14°F (-10°C), seldom go below 0°F (-17°C), and don’t stay there long. During the research season, temperatures average 36°F (2°C).

“In the summer, temperatures get into the 40s fairly often,” Farrell says. “A 45-degree day is pretty warm and a 50-degree day feels balmy.”

Concrete blocks and a steel and wooden deck support the Palmer Station milvans, which have wooden storage shelves inside. The ThinLINE units are set to maintain internal temperatures at -5°F (-20°C). The freezers store “beef, poultry, vegetables, fruit and ice cream – everything you would keep in a normal freezer,” Farrell said. Water is one commodity the station does not need to import. Fresh drinking water is “harvested” locally from seawater, which is pumped in and run through a reverse osmosis system to create fresh water.

In the summer, when the station population peaks, two chefs manage the food service operation. In the winter, only one chef is needed. Except for Sundays, they serve three meals a day.

Now, as the research program transitions into winter mode, this dedicated pair of ThinLINE units will revert to lighter, yet still vital, duty.

Said Kartik Kumar, director of marketing and strategic planning, Global Container Refrigeration, “While the vast majority of containers refrigerated by Carrier Transicold equipment travel the world transporting food across the oceans, we are delighted to know that these units are helping to support the ecological research initiatives of the scientists at Palmer Station, who in turn, are helping us to better understand our world and environment.”



*Looking across the tops of the Palmer Station milvans, investigators can be seen sampling water from a Zodiac boat.*



*The Palmer Station dining hall and kitchen.*



*Two 20-foot containers hold enough frozen food to support station operations for six to eight months.*

# Top Performers Recognized In Asia-Pacific Region

**Eastern (1961) Co. Pte. Ltd.** recently received the 2012 Carrier Transicold Top Performer Award for the Asia-Pacific region. The award is the third Top Performer Award for Eastern, and it came just as the company entered its 30th year in the refrigeration service business.

“The key to Eastern’s repeated success is embracing change,” said Hai Kuan Lee, Carrier’s regional service manager for Asia-Pacific Operations (APO). “Eastern stays one step ahead by constantly assessing the ever-changing environment and focusing on how best to improve service offerings, inventory, technical knowledge and internal processes to exceed customer expectations.”

“They endeavor to keep their employees and facilities ahead of the curve. A strong infrastructure enables them to provide customers with best-in-class service, technical expertise and innovative solutions time after time.”

The Singapore-headquartered company, with operations in seven strategic locations throughout the Pacific Rim, also received the Top Performer award in 2000 and 2007. The company was founded in 1961, but changed its focus to refrigeration service in 1983 under the leadership of Willie Goh, who accepted the 2012 Top Performer award from Chou Fun Sin, president of Carrier’s Container Products Group, during the APO regional service meeting in Bangkok.

Also recognized at the event were: **Sinotrans Xiamen Greating-Fortune Refrigeration Engineering Co. Ltd.**, Xiamen, China, and **Ho Chang Machinery & Electricity Co.**, Kaohsiung, Taiwan, both for customer satisfaction; **TRG**

**Eastern Co. Ltd.**, Bangkok, for most improved service center and **S&T Contemp Co. Ltd.**, Bangkok, for workplace safety.

Other recognition went to **Ming Fung Reefer Container Service Co. Ltd.**, Hong Kong, and **Yong Moon Co. Ltd.**, Busan, South Korea, both for employee development, and **Qingdao Xin Sanly Reefer Container Technical Co. Ltd.**, Qingdao, China, and **Tianjin Yuanchang Reefer Container Service Co. Ltd.**, Tianjin, China, both for replacement components.



*Chiu Fun Sin, president, Global Container Refrigeration (left), presents the 2012 Top Performer award for the Asia-Pacific region to Willie Goh, managing director of Eastern (1961) Co. Pte. Ltd.*



*Representatives from Carrier Transicold and the Asia-Pacific region service center network gather during the 2012 meeting in Bangkok.*

# Service Centers Shine At Americas Meeting



Attendees at the joint North America - Central America regional service meeting in Orlando, Fla.

The Container Products Group's longest-serving authorized service center, **Transport Refrigeration Inc.** of Jacksonville, Fla., received the Top Performer Award for the North America region, and **Costa Rica Container Service S.A.** of San Jose, Costa Rica, was recognized as the Top Performer for Central America. The awards were presented during the joint meeting of representatives of Carrier Transicold's North America and Central America service centers.

Both firms are also Premium Support Centers, reflecting the highest commitment to Carrier Transicold service and employee excellence.

"Since 1976, Transport Refrigeration has provided service for Carrier Transicold customers exclusively, delivering excellent support to important customers based at and serving the port of Jacksonville," said Jose Alonso, Carrier Transicold service manager for the U.S. Gulf Coast, Florida, the Caribbean and "cap" of South America.

The latest Top Performer Award is the second one for Costa Rica Container Service, which was also recognized in 2000. "They are committed to constant improvement," said Jorge Bazán, Carrier Transicold service manager for Mexico and Central America. "They adapt to the market requirements and always go the extra mile to satisfy all customers. We are grateful to count them as part of the Carrier team."

More than 50 representatives from 34 service centers in North America and Central America gathered in Orlando, Fla., for the two-day informational meeting and awards presentation.

Other accolades for the North America region went to two service operations based in the United States, **Tri-State Refrigerated Inc.** of Philadelphia, Pa., for field programs support, and **International Refrigeration Support** of Wilmington, Calif., for parts sales.

Leaders within the Central America region included **Honduras Container Service**, recognized for field programs support provided by its two locations in Honduras; and for parts sales, Guatemala-based **Sinducsa**, a premium support center with three locations.



Accepting the Central America Top Performer award is Edgardo Alpizar, operations manager of Costa Rica Container Service (second from right), with Carrier Transicold's Jeff Neuss, Jorge Bazan and Zvonko Asprovski.



Josh Allen, owner of Transport Refrigeration, Inc. (second from right), accepts the Top Performer award from Carrier's Jeff Neuss, Zvonko Asprovski and Jose Alonso.

# Welcome Aboard And "Ahoy!" to our New Premium Centers

With this issue, we're welcoming nine new Authorized Service Center locations and reintroducing four of our long-standing service centers as "Premium Support Centers."

Premium Support Center is a new designation for those service operations that demonstrate a level of commitment that goes beyond our traditional rigorous service center requirements. Premium Support Centers provide warranty service exclusively for Carrier Transicold-branded refrigeration equipment, although they can service all brands of container refrigeration equipment outside of warranty.

Premium Support Centers also demonstrate the highest level of technical proficiency. All service personnel at Premium Support Centers are required to hone their skills through participation in Carrier-authorized training and update programs at least every three years. (Carrier's three-year training standard for Authorized Service Centers applies

to 75 percent of each center's service personnel.)

In periodic business practice audits administered by Carrier Transicold, Premium Support Centers must also achieve and maintain scores at a level above the threshold required for Authorized Service Centers. And, becoming a Premium Support Center is strictly voluntary, again demonstrating a special level of commitment.

As with Authorized Service Centers, Premium Support Centers also provide warranty service for all Carrier units and 24/7 mobile service.

Today, Carrier's comprehensive sales and service network includes nearly 430 container refrigeration support, service and repair centers worldwide in all major and developing ports. Discover Carrier-authorized locations online by clicking on the Service Center Locator button found on [www.carrier.com/container](http://www.carrier.com/container).

## NEWLY DESIGNATED PREMIUM SUPPORT CENTERS

### Jacksonville, Florida – United States

Transport Refrigeration Inc.  
Contact: Mr. Josh Allen  
[josh@trigts.com](mailto:josh@trigts.com)  
+1 (904) 751-1800

### Limon

#### San Jose – Costa Rica

Costa Rica Container Service S.A.  
Contact: Mr. Edgardo Alpizar  
[crcontainer@racsa.co.cr](mailto:crcontainer@racsa.co.cr)  
+506 22907473

### Puerto Barrios

#### Tiquisate

#### Guatemala City – Guatemala

Sinducsa  
Puerto Barrios Contact: Tomas Nunez  
[nunez.tomas@gmail.com](mailto:nunez.tomas@gmail.com)  
+502 71481546  
Tiquisate / Guatemala City Contact: Mr. Gerardo Vettorazzi  
[gerardo.vettorazzi@sinducsa.com](mailto:gerardo.vettorazzi@sinducsa.com)  
+502 24740506

### Puerto Bolivar

#### Guayaquil – Ecuador

TASESA C.A.  
Contact: Mr. Juan Jurado Von Buchwald  
[jjurado@tasesa.com](mailto:jjurado@tasesa.com)  
+593 (4) 2489134

## NEW AUTHORIZED SERVICE CENTERS

### Melbourne – Australia

CRM Refrigeration Pty. Ltd.  
Contact: Mr. Craig Singleton  
[rcsingleton@bigbond.com.au](mailto:rcsingleton@bigbond.com.au)  
+61 (419) 444552

### Qingdao – China

Singamas Logistics (Qingdao) Co. Ltd.  
Contact: Mr. XinDe Guo  
[xinde.guo@slqc.singamas.com](mailto:xinde.guo@slqc.singamas.com)  
+86 (532) 86058699

### Shanghai

#### Yangshan – China

Greating Fortune (Shanghai) Container Service Co. Ltd.  
Contact: Mr. Minzhong Chen  
[mzchen@unigreating.com.cn](mailto:mzchen@unigreating.com.cn)  
+86 (21) 68489989

### Xiamen – China

Xiamen Xiangyu Singamas Container Co. Ltd.  
Contact: Mr. Paul Wen  
[zr.wen@xscl.singamas.com](mailto:zr.wen@xscl.singamas.com)  
+86 (592) 5628966

### Piraeus – Greece

Marketos Talaros Ltd.  
Contact: Mr. Stefanos Marketos  
[service@marketostalaros.gr](mailto:service@marketostalaros.gr)  
+30 2103456016

### Saint Petersburg – Russia

RefExpressService LLC  
Contact: Mr. Andrey Popovich  
[popovich@avroraref.ru](mailto:popovich@avroraref.ru)  
+7 (812) 319-34-44

### Barcelona – Spain

Depot Zona Franca S.A.  
Contact: Mr. Jaume Vilardebó  
[jaume@cimat.es](mailto:jaume@cimat.es)  
+34 (93) 4790606

### Miami, FL – USA

Rava Group Container Services Inc.  
Contact: Mr. Randy Vargas  
[ravagroup@bellsouth.net](mailto:ravagroup@bellsouth.net)  
+1 (305) 805-6938

## ContainerLINE

Please send your comments and story ideas to:  
[karolina.marcinkowski@carrier.utc.com](mailto:karolina.marcinkowski@carrier.utc.com)

ContainerLINE

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