

THE FORECAST IS BRIGHT FOR A CHANGED COLD CHAIN



Operators around the world reflect on the pandemic's impact on operations, markets and the future.

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The Future Has Never Looked Brighter

WITH ALL THE CHALLENGES OF COVID-19 AND THE NEED FOR CONTINUITY AND STABILITY IN VOLUNTEER LEADERSHIP, IT IS MY GREAT HONOR TO BE ELECTED TO A SECOND TERM AS IARW CHAIRMAN BY THE BOARD OF DIRECTORS.

As we emerge on the other side of the pandemic, warehouse operators and industry leaders agree the cold chain has been profoundly impacted by the pandemic and as a result the industry has changed in many ways. At the same time, we also agree that the future for the cold chain has never been brighter. See the cover article on page 12.

In order to embrace the challenges of the past year and move towards the future, I have been working along with other members to advance the 2020-2021 IARW-WFLO Strategic Plan's goals in market intelligence, global advocacy, industry promotion and workforce innovation.

The Strategic Plan's market intelligence initiatives provide member companies with data to improve operational productivity; understand key industry trends and market factors to better guide business decisions; and improve service through an enhanced understanding of customer business needs. This data is collected through research initiatives such as employee turnover surveys, productivity and benchmarking studies, as well as a global capacity report. Market intelligence findings will be delivered at various upcoming GCCA meetings and conferences such as the Cold Chain Policy Forum Institute, 2021 IARW-WFLO Convention and the CEBA Conference & Expo – all face-to-face events! See the calendar on page 36.

The strategies behind the global advocacy efforts in the Strategic Plan are to develop and adopt industry best practices and standards; mitigate the impact of regulations on the industry while achieving public policy objectives; proactively influence rules and regulations; and lead the dialogue on issues impacting the cold chain. An Advocacy Fund was initiated this year to support these expanded advocacy efforts. To find out more about GCCA's efforts to promote and protect our industry and the cold chain, I highly recommend reading the

government affairs articles authored by Lowell Randel, Senior Vice President, Government and Legal Affairs. See page 8.

Workforce innovation initiatives will provide skill-building education and other resources to support GCCA member companies recruit and retain skilled warehouse associates and technicians; train and educate employees in technical, operational and managerial roles; utilize automation and technology to augment workforce needs; and showcase career development pathways for warehouse associates and managers. In this issue, GCCA's Director of Training and Talent Development teams up with his counterpart at a member company to offer best practices on managing employee performance. See page 26.

The goals of our industry promotion initiatives are to enhance customer perception of the cold chain's critical role in delivering safe, quality food to consumers; increase our value through expanded service offerings and achieve financial outcomes consistent with demand for those services; and lead the industry in sustainability and promote the impact to customers. We're taking every opportunity to provide more exposure of GCCA member company expertise to our customers, so our customers have a comprehensive listing of the leading cold chain experts in the industry at their fingertips, the next time they are seeking a 3PL partner.

All the Strategic Plan's goals are intended to help us build strong partnerships, provide exceptional customer service and be the foremost experts in food safety. It is what differentiates GCCA's 1,300 member companies in 85 countries and transforms our services from a commodity to a value-added component of our customer's operations.

The future has never looked brighter. ☺



RON BUFORD
IARW CHAIR

COLDFACTS

COLD FACTS magazine is published every other month by the **Global Cold Chain Alliance (GCCA)**, an organization that unites partners to be innovative leaders in the temperature-controlled products industry. The GCCA Core Partners are:

The **International Association of Refrigerated Warehouses (IARW)**, which promotes excellence in the global temperature-controlled warehouse and logistics industry.

The **World Food Logistics Organization (WFLO)**, which delivers education and research to the industry and empowers economic development by strengthening the global cold chain.

The **International Refrigerated Transportation Association (IRTA)**, which cultivates, fosters and develops commercial and trade relations between all those engaged in the transportation and logistics of temperature-controlled commodities.

The **Controlled Environment Building Association (CEBA)** represents the design and construction industry specializing in temperature-controlled facilities that prioritize product safety best practices. We are the source for best practices of building and maintaining the thermal envelope.

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OSHA RAMPS UP COVID ENFORCEMENT

Changes include updated guidance, focused enforcement, accelerated inspections and potentially a temporary standard.

By Lowell Randel

Responding to the COVID-19 pandemic continues to be a high priority for the Biden Administration. Despite increases in vaccinations and lower cases in many parts of the country, President Biden is calling on the Occupational Safety and Health Administration (OSHA) to ramp up its enforcement efforts to regulate workplaces. Biden was critical of OSHA during the Trump Administration for not being aggressive enough in protecting workers from COVID-19.

The Department of Labor's Office of Inspector General (OIG) recently issued a report on OSHA's COVID enforcement in 2020 that supports Biden's contentions about OSHA enforcement last year. The report found that onsite inspection and travel restrictions led to a dramatic decrease in inspections. Comparing inspections over an eight-month period in 2019 and 2020, OIG found that OSHA conducted more than 26,000 inspections in 2019 compared with approximately 13,000 inspections in 2020. The OIG report also noted that OSHA received 15% more complaints in 2020 but performed 50% fewer inspections. The OIG concluded that these factors led to, "an increased risk that OSHA has not been providing the level of protection that workers need at various job sites." Among the OIG's recommendations was for OSHA to issue an Emergency Temporary Standard (ETS) to establish enforceable requirements.

Updated OSHA COVID-19 Guidance

Shortly after taking office, the Biden Administration initiated a series of actions to increase its COVID-19 policies and enforcement. One of its first steps was to update OSHA's COVID-19 guidance to employers. While not an enforceable standard on its own, the guidance sets the agency's expectations for how employers address COVID-19 hazards. The updated guidance emphasizes the importance of implementing COVID-19

prevention programs. Key elements of prevention programs include:

- Assign a workplace coordinator
- Identify where and how workers might be exposed to COVID-19 at work
- Identify a combination of measures that will limit the spread of COVID-19 in the workplace, in line with the principles of the hierarchy of controls
- Consider protections for workers at higher risk for severe illness through supportive policies and practices
- Establish a system for communicating effectively with workers and in a language they understand
- Educate and train workers on company's COVID-19 policies and procedures using accessible formats and in a language they understand.
- Instruct workers who are infected or potentially infected to stay home and isolate or quarantine
- Minimize the negative impact of quarantine and isolation on workers
- Isolate workers who show symptoms at work
- Perform enhanced cleaning and disinfection after people with suspected or confirmed COVID-19 have been in the facility

COVID National Emphasis Program

In addition to updating COVID-19 guid-

ance, OSHA has also implemented a National Emphasis Program (NEP) to focus enforcement activities related to the pandemic. The goal of this NEP is to significantly reduce or eliminate worker exposures to COVID-19 by targeting industries and worksites where employees may have a high frequency of close contact exposures and therefore control the health hazards associated with such exposures. This goal will be accomplished by a combination of inspection targeting, outreach to employers and compliance assistance. The NEP augments OSHA's unprogrammed COVID-19 inspections by adding a component targeting specific high-hazard industries or activities where the disease hazard is prevalent. The NEP targets establishments that have workers with increased potential exposure to this hazard and includes provisions to ensure that workers are protected from retaliation related to COVID-19 issues.

The NEP will be implemented by OSHA Area Offices and equivalent programs will be administered by state plan states. OSHA is expected to continue prioritizing COVID-19 fatalities, complaints and referrals through unprogrammed inspections. However, the NEP adds programmed inspections to the agency's pandemic-related activities. The NEP includes lists of targeted industries that OSHA has identified as being at higher risk for workplace transmission of COVID-19. The identified targeted industries include several



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categories impacting the cold chain including warehousing and storage, meat and poultry processing and grocery stores.

Programmed inspections can be conducted either on-site or a combination of on-site and remote methods. GCCA members with multiple facilities should be aware that OSHA will provide a letter to the corporate entities regarding the COVID-19 inspection. It is important that any identified deficiencies during an inspection also be addressed in other facilities within the company. Failure to abate known hazards in another facility could result in a repeat or willful citation.

Emergency Temporary Standard

When this article was written in late May, the Biden Administration was contemplating the issuance of an Emergency Temporary Standard (ETS) specific to COVID-19 in the workplace. An ETS would go into effect immediately upon issuance and be in effect for six months. It is expected that OSHA may also move forward with a rulemaking to establish a permanent infectious disease standard.

President Biden directed OSHA to determine whether to issue an ETS by March 15, 2021. However, the process was delayed as newly confirmed Labor Secretary Marty Walsh requested additional review of the data and science related to the pandemic before moving forward. The ETS was transmitted to the White House Office of Information and Regulatory Affairs (OIRA) on April 26, 2020. The final review generally takes around two weeks, but the process has taken longer as OIRA has accepted over 40 meetings with interested stakeholder on both sides of the ETS issue.

GCCA joined with partners in the food industry in expressing concerns with a potential ETS. The group asserted to OIRA that given increased vaccination rates and falling caseloads, an ETS is not needed at this time. GCCA and its partners stated that should an ETS be issued, it would need to provide sufficient flexibility to account for the broad diversity of operations across the food industry and allow for changes as guidance from the Centers for Disease Control (CDC) continues to evolve.

Further complicating the OIRA review is updated guidance from the CDC that fully vaccinated individuals can largely resume their pre-pandemic normal activities, including that mask usage is no longer needed for those fully vaccinated. OSHA has acknowledged the new guidance from CDC and has indicated that it is reviewing its materials in light of the new information.

While uncertainty remains with the fate of an ETS, the COVID-19 NEP gives clear indications that OSHA will be accelerating its pandemic-related inspections. Regardless of the status of the ETS, GCCA members are strongly encouraged to review the current OSHA and CDC guidance and their own protocols and be prepared for increased OSHA enforcement activity. GCCA will continue to actively engage with OSHA and the Biden Administration as the process moves forward and update members as COVID policies evolve. 🔄

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THE FORECAST IS BRIGHT FOR A CHANGED COLD CHAIN

Operators around the world reflect on the pandemic's impact on operations, markets and the future.

This time last year, the world felt altered. Warehouse operators everywhere reported the global pandemic had reshaped and changed their operations. In early summer of 2020, COLD FACTS interviewed cold storage operators about their current conditions and up-at-night issues. These ranged from supply chain disruptions to the emotional and physical care of their employee community, creating a safe work environment and meeting customer expectations ... and at that point, securing PPE was still a cause for anxiety.

One year on, we check back with these same operators to get their account of how systems and operations weathered the pandemic maelstrom, whether they are readdressing strategic planning or reconsidering business models post-COVID-19 and their outlook for the global cold chain industry.

A Profound Impact

The pandemic has had a profound effect on the temperature-controlled supply chain, according to Ken Johnson, Executive Vice President, Warehousing Group at RLS Logistics. This time last summer he was focused on his customers' inventory levels, among many other things.

"While some of the changes were a reaction to the new environment we were all operating in and were temporary, some changes will be permanent," Johnson points out. "The shift of demand from the food service side of our business to retail upset the flow for numerous logistics businesses, from warehousing to transportation."

He adds that warehouses are full throughout the United States and the labor market has tightened up tremendously.

In Europe, customers and supply chain participants are now even more focused on investing in automation to minimize the risk of not having enough people on the job because of a potential pandemic or other factors impacting the labor supply, says Niels Lundgaard-Svenstrup, Nordic Network & Business Development Director at Lineage Logistics. "The global supply chain – including the European supply chain – requires steady and smooth operations, uncompliments a complicated process and has redundancies built in. We are more focused than ever on how we can invest in automation and technology."

"The pandemic highlighted the need for resilient and flexible supply chains," says Matt Reed, General Manager of United States Cold Storage Minooka. He shared his concerns, last year, with maintaining best practices in keeping his teams safe and socially distanced in the face of changing government guidelines.

"As our partners and customers faced the same challenges at the same time as our industry, trusted supply chain partners were essential to keeping food on our families' tables. We all had to be accommodating and patient in navigating the new norms." Reed says the shared experience of facing the

challenges of the pandemic strengthened the partnerships with customers and partners in the supply chain. "These relationships benefit us all in the long run as we continue to find ways to adjust to future disruptions."

"The global supply chain has most definitely changed – we're seeing shortages in materials used in the manufacturing of goods as a result of inventory redundancies across many sectors of the supply chain," notes Stephen Draper, Regional Vice President – Southeast, Americold. "In my opinion, most goods are getting to the consumer quicker while still moving through 3PLs but, given the current demand because of the raw material shortages, we'll see some delays for a few more months."

"In Australia, there has been a strong and steady grocery supply chain, while food service has moved up and down more with the pandemic because of forced lockdown situations," reports Tom Kennedy, General Manager of Americold's facility in Murarrie, Australia.

Mauricio Barrera, Chairman of Qualianz in Mexico, concedes the global cold chain is not the same since the pandemic. "Although we're seeing a healthy and steady level of demand for temperature-controlled food products – geographical distribution, product mix and certain seasonal products have all suffered changes, much like in many other industries."

As the pandemic spread through Brazil in the summer of 2020, Gustavo Labate, Operations Director of Superfrio, was focused on communicating with, and motivating, his teams and keeping up morale. "All the health safety criteria we have implemented like providing employee transportation, hygiene and cleaning and PPE all add up to higher operating costs as a result of the pandemic," says Labate. "We also have to figure in the high absenteeism rates for sick leave from confirmed and suspected cases of COVID-19."

Manoel Honorio, Operational Manager at Brazilian company Friozem, admitted his greatest challenge last summer was containing panic when someone at the company became ill, regardless of the cause. "The cold chain has experienced the same changes as supply chains overall because of the pandemic, but we have the additional changes in the level of health requirements. Also, the pandemic has shown the importance of using technologies to support operations that are increasingly fractioned, complex and on really short deadlines."

New SOPs

As an essential industry, RLS had to provide safeguards to all its employees, whether that was shifting to work at home, providing additional cleaning regimens and supplies or placing barriers between workers that had to be on-site, says Johnson. "Some, if not all, will remain as part of our SOPs moving forward. It has certainly made us a more professional industry by forcing us to deal with all of the adversity we have had to over the last 18 months."

Draper notes while they have always had emergency preparedness and business continuity plans, they have seen benefits from the safety protocols enacted with the pandemic. "We are absolutely adding best-in-class measures to better react in the future."

United States Cold Storage used data science to develop new tools to enable business resilience planning and intelligent appointment scheduling explains Reed. "Those tools have been successfully deployed across our network, and we plan to continue to design data-driven decision-making tools to enhance our flexibility and adaptability to changing business environments."

"Our goal has been to prevent COVID from coming into the workplace," says Kennedy. "Some of the changes that are now SOPs include working with our casual labor suppliers to ensure they are in line with Americold's COVID programs."

Lundgaard-Svenstrup reports a tremendous demand for process automation and as customers are starting to see digitization efforts as a core component of their overall strategy. "For example, the pandemic forced us to reinvent how we interact with our drivers. We implemented a contactless driver check-in and check-out process and launched our driver mobile app to facilitate the operation."

Growth of E-Commerce

In March 2020, consumers, forgoing public venues and eating at home, stocked up on groceries and supplies, boosting sales for the month by 29% over the prior year, according to Supermarket News. Meanwhile, sales declined at restaurants, fast-food locations, coffee venues, and casual-dining locations by 27% that month.

"The growth and demand in the temperature-controlled market doubled almost immediately," recalls Johnson. "The demand

eased a bit as people started to eat out more and travel, but it has still remained high.”

One of the biggest impacts of the pandemic on the cold chain has been the growth of direct-to-consumer e-commerce and Johnson says the shift is driving a lot of changes in the industry. “Consumers flocked to the direct-to-consumer offerings and our industry has benefited tremendously. While the demand has eased up post-pandemic, it is still much higher than pre-pandemic.”

At the same time, Johnson says, the labor market has tightened tremendously as businesses are opening up and the demand for labor has increased. “Unfortunately, we are all fighting for the same pool of warehouse workers and drivers, which is driving up overall labor costs,” he points out. “Decisions will have to be made as to who will bear this additional expense in the long run.”

The growth in online food shopping, of course, is not just a North American phenomenon. “Online food shopping appeared quite quickly as a trend in Brazil,” says Honorio. “Several retail companies have created exclusive channels for this purpose, and e-commerce has increased significantly.”

Henry Ha, CEO of Metcold in China, noted in 2020 how surprised he was at the magnitude of the shift in consumer habits that was accelerating fresh food e-commerce sales. Now, he says the latest statistics put e-commerce sales at about 30% of the overall grocery market in China, up from 5% in 2018. “The rapid growth of these new retail channels is reshaping supply chains and raising new demands for more efficient and flexible services,” says Ha.

Inventory Challenges

“Since last year when countries were forced to close down industries due to COVID-19, we have explored the need, and potential demand from our customers, for ‘extra safety stock’ to provide a buffer to supply chain challenges,” explained Lundgaard-Svenstrup. “Food manufacturing and retailers are looking to mitigate the risks of not having enough product in storage, or not having it stored in the right locations.”

“Certainly, we have seen a tendency from our clients to prioritize inventories,” says Barrera. “As market conditions and demand dynamics become less predictable, the importance of healthy inventory levels will remain key for our clients in order to maintain high

“As our partners and customers faced the same challenges at the same time as our industry, trusted supply chain partners were essential to keeping food on our families’ tables. We all had to be accommodating and patient in navigating the new norms.”

MATT REED, *United States Cold Storage*

levels of service demanded by their consumers.”

Draper says he definitely sees nuances in how the supply chain is reacting to the pandemic and is interested in a couple of shifts. “First, I’m curious to see if supply chains continue to embrace the Just In Time (JIT) methodology or if inventory levels increase given producers hesitancy to experience disruptions like we’ve seen the last 14 months,” he admits. “Second, with limited access to labor and the demand on retail sectors, I’m curious to see if manufacturers reduce the number of SKUs to ensure materials are available for top sellers.”

In Australia, Kennedy notes customers are requiring more flexibility from their warehouse operators, especially when potential lock downs can cause uncertainty with consumers and cause impact buying. “It’s important to be in communication with customers so we can be ready to assist.”

The Outlook is Bright

“The COVID-19 pandemic focused a spotlight on the food supply chain, as it rapidly created challenges in food supply and accelerated the adoption of online grocery shopping, fueling greater demand for cold storage facilities,” says Lundgaard-Svenstrup. “The pandemic also showed how the cold storage industry can readily adapt to new customers and environments, and we are very optimistic about the future.”

Johnson believes the past year has helped solidify the continuing need for temperature-controlled logistics and will be a driving force in new players entering the market while consolidation of existing operators will continue as well. “The pandemic has made us better operators, and I believe we passed this difficult test with flying colors. Good things are happening for all of us who have had the ability to weather this storm.”

“The future of the cold chain is bright,” Reed believes. “We have proven that our industry is

an essential component of the consumer food chain and we have a revitalized commitment to safely storing and transporting the food our American families love to eat.”

Kennedy points out that temperature-controlled storage remains a critical front-line service, and even as Australians get vaccinated, the temperature-controlled supply chain remains critical infrastructure. He expects to see continued stronger demand. “This is especially true in Australia, where we have strong import and export food supply chains – our future looks quite positive.”

“In China, we are seeing rapid growth in demand for temperature-controlled storage and operating/sorting/processing facilities,” explains Ha. “We are very confident that the growth trend will continue for the foreseeable future.”

In Brazil, Honorio believes the cultural shift towards consumers replacing non-refrigerated products, such as those sold in traditional markets, with refrigerated products, will grow more and more. “This growth is motivated mainly by the confidence consumers have in the processes of the cold chain that guarantees more demanding health protocols.”

“There will always be a need for services in the temperature-controlled space because the demand for food doesn’t change much, even if the end point of consumption varies,” reasons Draper. “No matter where a french fry ends up – in a retail grocery store, at a restaurant or exported overseas – it needs a home at 0 degrees along its journey in the food supply chain. The cold chain is ready to deliver and better prepared than ever.”

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IT'S BOOM TIME FOR BUILDING

New parties show unprecedented interest in cold storage construction since the pandemic.

By Keith Loria

The cold storage construction industry is booming. A record number of projects are in development and a plethora of new companies are entering the industry.

“It is definitely busier than it has been in the entire 27 years I have been in the industry,” says Jake Stefan, CEO of ARCO Design/Build. “There’s a lot of activity from those that have been in the industry for years, and a ton of excitement and interest on the part of those who have been on the outskirts and have money to invest.”

The design firm Ware Malcomb currently has large cold storage builds and food processing projects with cold storage components under construction in a number of large markets. “Anywhere there is a growing

population, cold storage seems to be growing too,” says Kate Lyle, Studio Manager, Industrial Cold and Food, Ware Malcomb. “There are concerns current spikes in materials pricing, particularly steel, as well as long lead times, might temper the construction boom. On the other hand, vacancy rates in cold storage as low as 2% are encouraging developers to move forward despite possible challenges.”

Ware Malcomb designed what it believes was the first U.S. speculative cold storage building based on a unique design prototype in Fort Worth, Texas, in 2018. Lyle says since

that project, the interest in speculative cold storage grew exponentially. “While part of that is a result of increasing acceptance by capital markets, it’s also encouraged by low vacancy,” she says. “And while speculative cold construction rushes to fill demand, end users continue to look towards the more traditional build-to-suit green field projects, dry-to-cold conversions and remodels and additions to address their needs.”

Industry watchers attribute a number of drivers to the low vacancy and high demand. Some long-term trends, like the increasing consumer desire for fresh and frozen goods, merged with more recent drivers, like e-commerce, are feeding demand. And of course, all that demand was further impacted by pandemic panic buying causing a turn away from just-in-time logistics.



A fully automated mobile racking system in a -10F freezer space. The mobile rack system moves on steel rails embedded into the floor system and is designed for one forklift aisle in every column bay. (Photo courtesy of ARCO Design/Build.)

“All in all, it is the busiest I have seen cold storage design and construction in the past decade,” Lyle says.

Rob Adams, Partner with Tippmann Innovation, agrees the level of interest is off the charts, and he’s seeing more building activity than ever before. “We have more opportunities of green field, redevelopments, the box in the box — these are the immediate needs companies are showing.”

The Pandemic Effect

A lot of what is taking place in cold storage construction in the summer 2021, can be traced back to the impact of the COVID-19 pandemic. During the pandemic when everyone was worried they would be stuck at home and things would be hard to come by, panic buying was extreme, stretching both the supply chain and the quantity of product that had been produced.

“The idea of just-in-time deliveries has really been challenged, stretched, and in a lot of ways, broken,” Stefan says. “All the data collected about people’s purchasing habits never accounted for hoarding and panic buying.”

“What the pandemic did was highlight that there’s not really a perfect system when it comes to the balance between overstock or supply left in storage versus the amount you need at any one given point and time,” Stefan says. “You’re seeing the response to that in a lot of ways, with a greater focus on having food processing located closer to its point of consumption.”

In addition, a stressed labor market with just about every industry looking to hire has made things challenging as well for cold storage construction.

Designing Differently

It is not unusual for companies involved with designing and building cold storage facilities to seek cutting-edge technology and take advantage of new innovations.

In 2021, companies are watching innovations in new energy systems and flexible spaces. The pandemic accelerated these two trends, but it was not the only driving force for change.

“It’s just part of the natural progression of our industry in a growth mode,” Stefan says. “If you look back at the cold chain over the last five years, it’s been growing fairly consistently. And with that growth, there has been a lot of development in refrigeration technologies, energy efficiencies, lighting and automation in the warehouses.”

It’s the latter point where the pandemic may have had the deepest impact, as the need for automation has intensified this past year.

“From a reliability standpoint, you don’t have to worry about automation and robots getting COVID,” Stefan says.

Adams notes e-commerce opportunities and last-mile factors have increased the need to utilize buildings in a better and more flexible way. “In design, we’re using different styles of racking, semi-automated and fully automated being all in play now,” he says.

“Depending on the location and product and who is going to be in the building, you have to weigh all those factors. From a cold storage standpoint, over the next few years, a lot of building styles and designs will be vetted out.”

Moving forward, Adams expects to design in a way that can accommodate full aspects of semi-automated mobile racking and other automated features that allow for greater throughput.

Whether it is mobile racks, case stacking processes, conveyor systems or autonomous self-driving forklifts, automation is affecting almost every area of a cold storage facility.

Automated storage retrieval systems (ASRS) are quite common in Ware Malcomb’s cold storage projects. Lyle notes they are often combined with conveyor systems, which meets the common goal of designing as many pallets into as small a refrigerated footprint as possible. “We’ve also completed projects utilizing semi-automated pallet shuttles for the same reason,” she says.

According to Lyle, last-mile facilities have two aspects that set them apart from other buildings in the supply chain. First, the land available in the best locations is often smaller lots. Second, those smaller lots often have to accommodate a large quantity of delivery vehicles, such as sprinter vans.

“It’s a challenge to get a lot of building and a lot of loading into a small space, so we are often designing around ASRS material handling systems and increasing vertical storage,” she says. “We design multistory warehouses for non-refrigerated storage, but at the moment it is cost prohibitive to add the cold storage component. Because of this, we have also developed a prototype for a single-story warehouse that combines multi-level loading decks with mezzanine loading and ASRS, a hybrid that is well suited to cold storage last mile.”

Additionally, the pandemic resulted in the development of “dark stores,” a more low-tech, low-profile solution for last-mile delivery. While there are zoning challenges to the concept of expanding across retail land, it does provide a very different possibility for last-mile distribution as a low-profile pick operation.

Increased Partnerships

The industry has seen a number of new partnerships between cold storage construction companies, REITs and developers to build networks closer to population centers.

“There are a lot more people shining a light on this industry,” Stefan says. “I can’t go a week without someone calling to talk about cold storage, and that’s a lot of REITs, a lot of venture capitalist and public equity companies. There’s just a lot of buzz.”

He explains that to build one of these facilities, it is very hard to make them flexible for all the different cold chain uses.

“Whether use is for temperature-controlled storage, food service distribution or food processing, these all require distinctively different buildings,” he says. “That’s a typical thing to design without spending a tremendous amount of money and potentially having a very large carry on your funds.”

Of the majority of temperature-controlled facilities, there are very few that are truly built on spec. The majority of the time, a tenant is lined up and the purpose of the building is



known from the start. Stefan says he is having many conversations about this.

Tippmann Innovation recently partnered with global real estate investment manager BentallGreenOak, which will provide capital to fund cold storage development. In Phoenix, Arizona, United States, the company is developing a state-of-the-art cold storage facility with nearly 177 million cubic feet of storage space, 40,000 pallet positions, a 60-foot-deep refrigerated dock and a 40-foot-deep refrigerated rail dock that is fully convertible to refrigerated/frozen space.

“As we looked at how to build buildings that are desperately going to be needed, already having capital in place to quickly deploy a building is necessary, and we’ve been working on setting this up for the last 18 months,” Adams says.

Ware Malcomb is currently working with numerous developers exploring speculative cold storage development, and the big demand for cold storage seems to match those strong population centers.

“While there are also more remote multimarket distribution sites, a lot of sites

are closer to major cities,” Lyle says. “These include suburban distribution centers, smaller last-mile facilities and for those markets with ports – gateway facilities.”

Tippmann Innovation has had multiple companies reach out over the last 18 months about entering the cold storage construction field.

“We’ve talked with more folks from capital markets and they have been very actively trying to tap into our industry in a bigger way,” Adams says. “Our buildings are very specific and specialized, and it’s been an education for capital markets getting into our space, but the interest is far and wide.”

Looking Forward

Given that interest, ARCO Design/Build remains very optimistic about what’s ahead for cold storage construction.

“These projects don’t just happen overnight. Because of the complexities of these buildings and the challenges in how you design and construct them, they have a fairly lengthy conceptual phase,” Stefan acknowledges. “Because of that, we’re talking with

potential clients, and we feel very good about the outlook for our industry for the next 12 to 18 months, if not longer.”

The view at Ware Malcomb is similar. “The high demand for cold storage is going to continue to keep us very busy,” Lyle says. “It’s an exciting time to work in cold storage, and I’m looking forward to seeing many more speculative cold developments, and seeing some of our prototype ideas become real buildings.”

KEITH LORIA is an award-winning journalist who has been writing for major newspapers and magazines for close to 20 years, on topics as diverse as sports, business and technology.

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ELECTRIFYING THE REEFER FLEET

The transition from diesel to electric-powered trucks and refrigeration units is happening.

By Gina Veazey

As a decarbonization movement gains steam in trucking and elsewhere, some cold chain suppliers and operators have already made the leap into alternative power and fuels.

These early adopters are harnessing the efficiency and sustainability of electricity to power refrigerated trailers and Transport Refrigeration Units (TRUs) – and in many cases, using alternative fuels to power tractors.

Climate Tops the Global Agenda

A growing number of regulations and financial incentives, a shifting social and political landscape and a strong business case are driving the transition toward a greener future.

“The [electric vehicle] and decarbonization effort crept up on us very fast,” says Glen

Kedzie, Vice President, Energy and Environmental Counsel with the American Trucking Associations (ATA).

Big changes on the U.S. political front rapidly created an environment for electrification initiatives to advance, says Kedzie. Control of both houses of Congress and of the

White House is now in the hands of Democrats. “There’s a philosophy totally unlike the last administration – science, climate change and terms like ‘environmental justice’ are discussed.” Kedzie also observes there has been a shift in the social consciousness, with the public more interested in sustainability initiatives and corporate America increasingly concerned about the risks of climate change.

These forces are not unique to the United States. “The industry, as we’ve known it up to now, will be different in the future,” commented Victor Calvo, President, International Truck & Trailer, Carrier Transicold, in a video briefing in April 2021. He cited the European Commission’s 30% CO₂ reduction target by 2030, low- and no-emission zones and low-noise regulations as some of the regulations moving the industry away from fossil fuels

The Vector® eCool, is a fully electrical and autonomous trailer system that uses an energy recovery and storage system to charge batteries. (Photo courtesy of Carrier Transicold.)

and into alternatives including electricity and, in the future, hydrogen.

Eyes on California

Even though decarbonization has advanced considerably in recent months, there are still many more questions than answers about how a transition to electrify the trucking fleet, let alone reefer trailers, will play out. “It’s not just about flipping switches and traditional fossil fuels go away,” Kedzie says. “This is going to take a long period of time, especially in the trucking sector because the trucking sector is so diversified.”

In the United States, California is the petri dish for innovation, points out Kedzie. “In the past, we always said ‘be aware of what is happening in California since their proactive approaches could spread throughout the country.’ Historically that hasn’t happened at warp speed, but the times they are a changin.”

As an example, California is currently creating new TRU regulations, a process closely watched as other states may adopt the regulations as part of their decarbonization efforts. California plans two TRU regulations – first priority is a regulation for TRUs on straight trucks, and in the future, the state is expected to develop a regulation for TRUs on trailers. Kedzie says there are very stringent requirements, and phase-ins are going to be very tight. He expects costs of compliant TRUs, trailers, and tractors to rise with implementation of the regulations.

At the federal level, there are a wide range of issues surrounding zero-emission vehicles. These include financial incentives for new equipment and the build-out of a new fueling infrastructure, weight exemptions for battery packs and fuel cell technologies ensuring there are no competitive advantages for specific fueling types, and many others.

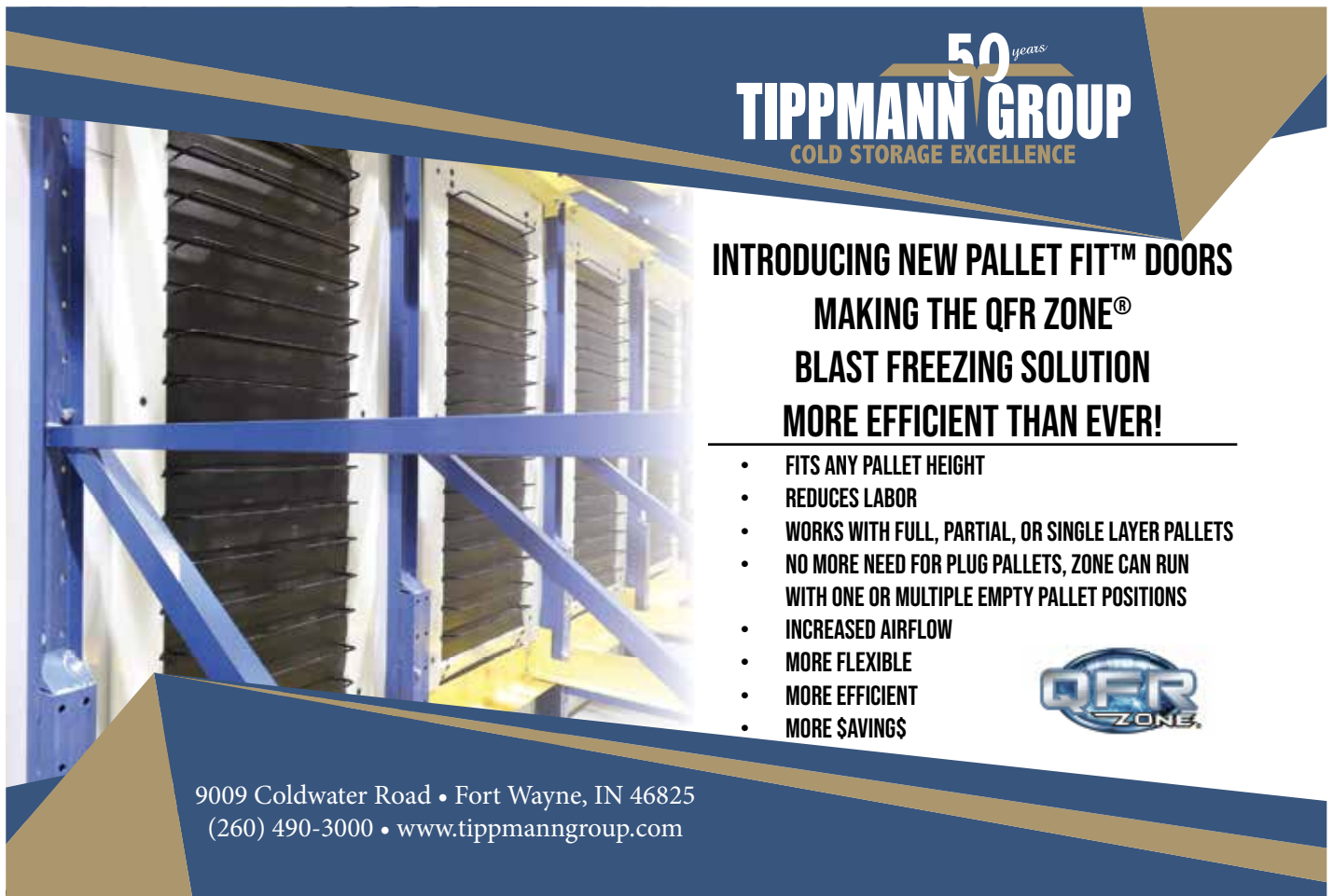
Turnkey Solutions

From zero-emission vehicles (ZEVs) to hybrid-electric and solar to telematics and shore power solutions, today’s early adopters say there are many benefits to electrification.

Here’s what a few transportation companies are doing to make today’s refrigerated fleets more sustainable.

PLM Fleet offers a hybrid-electric TRU and a zero-emission eTRU solution. The latter is powered by lithium batteries and augmented by power from solar panels and a momentum generator, allowing it to achieve 30 hours of runtime without a charge.

With access to robust telematic data about the performance of its ZEVs, PLM and its customers have been able to keep tabs on nearly every aspect of their operation. PLM says its test and trial results have shown the operational savings associated with a ZEV can be as high as 93% as compared to




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diesel. “We’ve been very impactful working with many of our customers in creating the sustainability reports that their customers are looking for,” says Don Durm, PLM Fleet Vice President, Customer Solutions and Vice Chair of the International Refrigerated Transportation Association (IRTA), a core partner of the Global Cold Chain Alliance.

Importantly, the telematic system allows customers to set alarms according to specific operational parameters, a capability that helps them easily identify and address exceptions. This includes information about:

- When and how long the doors were open
- When and how long the unit was on charger and running
- When the unit was taken off charger
- When the unit departed
- How many stops the unit made along its route
- When the trailer was in motion
- Battery status along the route
- Ambient temperature along the route
- Payload compartment temperatures

Despite these and other benefits, some constraints remain. Specifically, these systems work best for fleets that can return to the maintenance facility within a 24-hour timeframe for charging.

“Can they get back within 24 hours to a charger? If we can say yes, we’ll move to the next step,” says Mike Marshall, Vice President of Zero Emissions at PLM Fleet.

Marshall says that, even for the company’s hybrid TRU solutions, cultural and operational change management can be a challenge. PLM and its customers have found it helpful to have SOP documentation and best practices in place for customers.

Supplying power to the hybrid-electric TRU and eTRU systems, which require access to 460- or 230-volt three-phase power, is an important consideration for infrastructure deployment. The all-electric systems, which ultimately run on 46-volt DC, make use of a nearby transformer. This arrangement supports an eight-hour charge time.

Although the ZEV technology is more costly, PLM has reserved almost \$6 million in vouchers for zero-emission TRUs through California’s Clean Off-Road Equipment Voucher Incentive Project (CORE).

Strategic Sustainability

Carrier Transicold EMEA announced a sustainability strategy in April 2021, and



PLM Fleet offers a hybrid-electric TRU and a zero-emission eTRU solution. (Photo courtesy of PLM Fleets.)

anticipates launching its Lynx Fleet telematic platform in Europe this summer.

“The Lynx solution gives customers greater insights into their cold chain operations,” says Calvo. “This IoT solution can enhance connectivity across the cold chain and help increase fleet uptime and optimization, which can reduce cargo spoilage risk.”

The Lynx solution gives transport operators proactive maintenance suggestions for Carrier Transicold equipment, which can help to maximize uptime and reduce unexpected repairs. The system allows operators to remotely access the pull-down sequence when the TRU is connected to the grid, which may help to reduce fuel and labor costs. The system also offers advanced reporting capabilities.

The Lynx Fleet leverages refrigeration equipment telematics and sources of data, along with machine learning, to help customers make faster, data-driven decisions to improve the effectiveness, efficiency and sustainability of their supply chains. Designed with an open application programming interface, data in Lynx Fleet can also be fed into a customer’s own transport management system.

A central part of the company’s sustainability strategy is its fully electrical and autonomous trailer system, the Vector® eCool, which uses an energy recovery and storage system to charge batteries powering the refrigeration unit. The technology produces no direct CO₂ or particulate emissions. Also part of its sustainability portfolio are the company’s engineless options for rigid trucks,

specifically a new electrical power inverter that works with any form of vehicle power, such as diesel, natural gas, electric or even hydrogen fuel cells, to operate the refrigeration unit.

Carrier Transicold also announced a new strategic partnership with the Portuguese technology company AddVolt. The companies will collaborate to develop sustainable transport refrigeration solutions that are compatible with the new Lynx Fleet application.

End-to-End Electrification

Back in North America, KeHE has launched a number of initiatives to reduce the company’s overall footprint, on and off the road.

“KeHE has been driving forward with a focus on sustainability over the past five years. In the last three years, we’ve been able to upgrade and advance our technology to what the market has to offer in many locations,” says Tom Harden, Senior Manager of Fleet Assets.

An early adopter, KeHE has put an estimated 150 eTRUs into service. Now it is implementing a shore power system mated to its eTRUs that eliminates the need for diesel while a truck’s trailer is plugged in at one of the company’s 16 distribution centers.

“It’s a year-over-year process that requires a lot of planning for construction, vehicle upgrades and MPG strategies,” explains Harden. “These efforts are often not an overnight success but a culmination of keeping the vision clear with the fleet as well as working alongside each of our locations to ensure sustainability is a focus.”

The newest KeHE distribution centers are being outfitted from the ground up with the shore power system, and some existing facilities have been retrofitted with the system.

“Cost seems to be the only barrier we’ve faced to this point, and that only seems to be applied to retrofitting current facilities versus building new facilities with shore power in the plans from the start,” observes Harden. “The construction labor is much higher when adding Shore Power, and it takes more planning and resources to complete the jobs.”

Harden notes adding a shore power system often includes adding infrastructure to locations within the building that did not previously exist. In some locations, adding infrastructure to existing buildings has cost 100% more than building it in the company’s new facilities.”

In March 2020, KeHE announced the addition of five renewable natural gas (RNG) trucks to its California fleet. The trucks replaced five diesel trucks, delivering an annual carbon reduction of 674 metric tons.

End of the ICE Age

In March 2021, UBS said it expects ZEVs to displace the internal combustion engine (ICE). UBS predicted uptake to gain traction in the heavy-duty and medium-duty truck market over the next decade, with ZEVs achieving at least a 30% share of the annual heavy-duty truck market across North America, Europe and Asia by 2030. For medium-duty ZEVs, UBS predicted an even higher market share – at least 40 to 45% in that same period.

In addition to regulatory drivers, UBS cited the increasingly favorable economics of ZEVs. Its total cost-of-ownership analysis showed battery and fuel cell electric vehicles (BEVs and FCEVs, respectively) gaining an edge over ICE vehicles by 2030 – even adjusting for the increased weight of ZEVs and for an expected decline in the cost-per-mile to operate ICEs. 🌱

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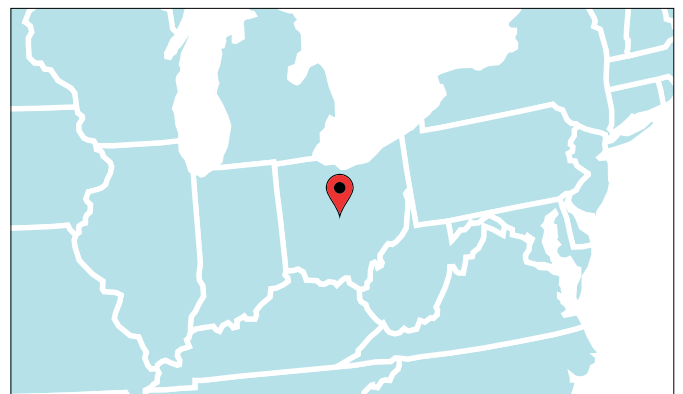


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IS TRAINING REALLY THE BEST MEDICINE?

Diagnosing employee performance issues can help reduce labor shortfalls.

By Shane Jacques and Cali Ivey

While the success of COVID-19 vaccines shines a much-anticipated light at the end of a long, dark tunnel, temperature-controlled 3PL leaders are turning their attention back to another long-awaited antidote: a solution to the industry's talent shortages.

The pandemic offered few favors to employers already in search of qualified labor. Suddenly, workers and managers alike wrestled with concerns over workplace safety in an industry that wasn't fully afforded the opportunity to work from home. In countries like the United States, pandemic-related legislation offered financial relief to those whose jobs were furloughed or terminated while, at the

same time, incentivizing some workers to voluntarily end their employment in favor of short-time financial gain. Despite the promise of a return to normalcy, it may be too soon to transfer the industry's talent dilemma to the recovery ward.

A recent article from Forbes predicts a pending wave of voluntary departures and resignations in what labor leaders are calling

a "turnover tsunami." The cause – restless job seekers eager for promotion and pay raises after a pause of more than a year on their job search. This prognosis presents a problem on multiple fronts in an industry accustomed to turning over approximately one out of every three employees in a typical year ("2020 IARW North American Warehouse Employee Turnover Survey"). In addition to lost institutional knowledge, the website Glassdoor estimates that the cost of onboarding a new employee can exceed \$4,000 per hire. In our industry, where new hires may not remain on the job for 30 days, these costs can quickly add up.

Simply put, there may be no immediate end in sight to recruiting and rapidly onboarding new talent. The difference between an employee's current level of performance and their optimal level of performance is their



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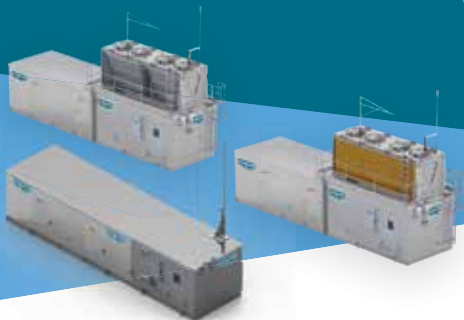
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performance gap. Now more than ever, managers and HR leaders need to master the skill of quickly diagnosing and treating performance gaps. Managers tend to react by quickly prescribing “more training” to whatever performance gaps ail them, only to be disappointed when the desired effect isn’t achieved, and the pain persists. The best remedy depends on the type of gap itself.

Knowledge Gaps

Knowledge is power, or so the saying goes, and while knowledge is important, putting the knowledge to use at the right time is what counts. Let’s take, for example, new hire onboarding. The knee-jerk reaction may be to load up a new employee with information to ensure they never find themselves feeling inadequate or at a loss to problem solve. While that approach may be well-intentioned, the result usually contributes to a sense of information overload. Instead of the employee feeling as though they have what they need to succeed, they end the day feeling like their head is spinning.

As you approach knowledge gaps, consider separating “need to know” information from “nice to know” information. To rule out any extraneous details, identify what information the new hire will need to access and apply to their job in their first 30 days. Then, focus your onboarding efforts accordingly. On day 31, introduce new information for the next 30 days.

Too often, companies front-load new hires with knowledge that they won’t need immediately and expect them to mentally haul it along until they do. When information isn’t used, it gets lost to make room for new information that is more immediately relevant.

To decide how to fill a knowledge gap, consider how readily your employees need to access information. In any job, there is information that needs to be committed to memory and information that is acceptable to retrieve through reference. So many onboarding programs focus on a cover-to-cover walkthrough of the employee manual. With safety being paramount within the cold chain environment, new hires should readily recall the safety processes and procedures that prevent incidents or accidents. It’s less critical that they commit the rate at which they accrue paid time-off to memory.

Skill Gaps

From day one, whether it’s essentials like utilizing the time clock system or specialized techniques such as operating high-reach lift trucks, warehouse operators have no shortage of required skills. And while training sessions are certainly one way to suture a skill gap, it’s worth noting that training without practice is worthless when it comes to skill development. Still, practice is risky because it’s prone to failure, and failure can result in lost time, lost productivity and potentially even lost revenue.

So how do you allow space for skill development while managing and minimizing failure? This is where guided practice comes in. Just as a surgical student doesn’t enter the operating room without supervision, your warehouse operators can sharpen their skills under the watchful eye of more seasoned personnel.

A best practice within the warehouse environment is to assign a mentor to aid the new-hire employee. The mentor’s role is to show a new employee the ropes, which includes demonstrating to new hires how to complete a task and then turning over the practice to them. Guided practice with a mentor works best when broken down into three simple steps:

Step 1. The mentor should demonstrate how the task is completed. The type of task should be one the new employee will perform often, such as order picking.

Step 2. The mentor and the new employee should perform the task together. Learn by doing allows the new employee to gain necessary hands-on experience while under supervision.

Step 3. The mentor should allow the new employee to demonstrate how to perform the task independently. This step allows the mentor to offer feedback on areas of success and areas of opportunity.

The right mentor offers seasoned experience in the form of training and assimilating the new employee to the organization. This will dramatically impact the performance of a new hire, allowing them to ramp up to speed quickly.

Motivation Gaps

Sometimes the performance issue is not rooted in knowledge or skill. Staff might not be included in a particular process. Or maybe the process has changed, and they are concerned about what will be required to implement the change. It’s possible the team member may feel insecure about their ability to perform at the level needed for the change to be successful.

In any one of these cases, the performance gap is a matter of motivation. Motivation gaps don’t necessarily infer that employees are not interested in making an effort to succeed – though that could be the case. The defining characteristic of motivation gaps is that, try as you might, training won’t solve them. An employee who is consistently late for their shift will not start arriving on time because of a training session on time management skills or a refresher course on your company’s time and attendance policy. Not only will you not see results with the repeat offender, but you’re likely to demotivate high-performing teammates who resent spending time in unnecessary training.

While the carrot-and-stick method of incentivizing or reprimanding may seem like your only option for motivating employees, you’ll be better off investing your time and efforts in one-on-one performance coaching. While an internet search will turn up countless results for ways to structure a coaching conversation, there is one underlying element in each of them: managers must resist the temptation to spout advice. Employees who are experiencing motivation gaps are having trouble seeing the bigger picture of their performance. The key to motivating them is helping them find the missing clarity and inviting them to partner with you in prescribing the solution.

While this isn’t a simple fix, the recommendation is to start by linking the employee’s performance to the overall performance of the department, location and the company. This will allow them to start connecting the dots on how their individual performance impacts organizational performance.

Environmental Gaps

On occasion, the performance issues that your team members are experiencing are no fault of their own. Take, for example, a cold storage facility that isn't meeting its goal on turn times. Instinctively, you might assume team members need training on efficiently inspecting and unloading a truck. Imagine, instead, that the problem has little to do with human performance but rather system performance.

Perhaps your arrival processes have some inefficiencies that create a bottleneck at the dock? Maybe your warehouse management system is lagging because you're running an outdated version of the software?

You can not fix human performance if the gaps have nothing to do with humans. Before subjecting your warehouse personnel to training that won't move the needle, take the pulse of your systems, processes and environment to uncover the true cause of what your team is experiencing.

Bridging The Gaps

Once you have completed a full check-up on the performance gaps you're facing, you can begin treating them. In instances where training is an appropriate intervention, make sure the training is aligned with your business priorities. The time and resources invested in training should have a direct, positive impact on the metrics that are most important to your operation. Just as your physician monitors your temperature, blood pressure and heart rate, your organizational KPIs are the vital signs against which your talent development efforts should be compared.

When training isn't the best medicine, seek a second opinion from other members of your leadership team to identify an appropriate solution. Properly and effectively treating performance issues can reduce the severity of labor challenges during these exceedingly tumultuous times. After all, an ounce of prevention is worth a pound of cure. ☯

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COLD CHAIN DEVELOPMENT

NEWS ABOUT WFLO INTERNATIONAL PROJECTS

This column features news about key projects of the World Food Logistics Organization (WFLO), a GCCA Core Partner, and its work with members, aid organizations and international development partners to help emerging economies and lower-income countries meet the challenges that arise when growing a safe and efficient global cold chain.

ACTIVE PROJECTS

Bangladesh Trade Facilitation Project, 2020–2025

Partnered with Venture37 and LixCap

WFLO was awarded a five-year subcontract supporting the Bangladesh Trade Facilitation (BTF) project. This project, funded by the United States Department of Agriculture (USDA), focuses on expanding trade in agricultural products by reducing the cost of trade; decreasing the release time of imported agricultural goods; and increasing agricultural productivity by improving processes through increased transparency, streamlining and automation.

WFLO will support the comprehensive trade assessment by performing a cold storage ecosystem assessment and will lead activities to enhance cold storage infrastructure for perishable goods in Bangladesh.

Benin Cold Chain Rapid Response and Master Plan Strategy, 2021

Partnered with LixCap

GCCA member LixCap has subcontracted WFLO to support the development of critical cold chain assets to operate on a commercial basis in Benin, West Africa. The main objective of this study is to support the development of a roadmap to attract and catalyze commercially viable and sustainable cold chain operations in Benin. This team will support the design and strategic recommendations for a temperature-controlled logistics facility for the Grand Nokoué Wholesale Market. It will be integrated with the infrastructure logistics in Benin and the airport solutions implemented by the team during a previous phase of the project.



A wet market in Vietnam is part of WFLO's comprehensive baseline assessment of the cold chain of several Southeastern Asian countries for the USDA-funded Emerging Markets Program.

Cambodia Owners Engineering Add On, 2020–2021

Partnered with LixCap

After completing a privately funded feasibility study in 2019, WFLO was asked to support further work in the region with an owners engineering add on. In partnership with LixCap, WFLO is overseeing site studies and managing a construction and supply tender process for a cross-docking facility at LM17 port in Cambodia.

Southeast Asia Emerging Markets Program, 2019–2021

WFLO is conducting a comprehensive baseline assessment of the cold chain in Vietnam, Thailand and Cambodia. This activity is part of the USDA-funded Emerging Markets Program (EMP) that helps U.S. organizations promote exports of U.S. agricultural products to countries that have, or are developing, market-oriented economies and that have the potential to be viable commercial markets.

In 2019, several GCCA members and staff were able to visit Cambodia and Vietnam to

perform site studies and tours and collect data that will help WFLO create recommendations for cold chain development.

The Thailand assessment is tentatively planned for late 2021.

Dominican Republic Trade Safe Project, 2021–2025

Partnered with International Executive Service Corps (IESC)

WFLO is supporting a new USDA Food for Progress “Trade Safe (TraSa) Project” in the Dominican Republic. It is a follow-on to the successful Exporting Quality project, which WFLO supported from 2015 to 2020.

Building off the cold chain work completed in large part by GCCA members Brian Beazer, Marko Dzeletovich and Juan Carlos Hencker, with additional support from Debbie Corado and Dr. Elhadi Yahia, this project expands the cold chain training and consultations from packhouses and airports to improved efficiencies via education and investment for a broader group of cold chain stakeholders.



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Egypt Rural Agribusiness Strengthening Project, 2019–2023

Partnered with Abt Associates Inc.

The U.S. Agency for International Development (USAID) Feed the Future Egypt Rural Agribusiness Strengthening (ERAS) Project employs a buyer-led, systems-strengthening approach to improve the competitiveness of horticulture producers and related downstream businesses and food processors by developing their abilities to respond to domestic and international buyer demand. For this project, WFLO contributes to innovative initiatives that address cold chain and postharvest gaps within the broader market system, provides capacity building and resolves challenges in the cold chain area.

Egypt Market Assessment of Third Party and Temperature-Controlled Logistics Services, 2021

Partnered with LixCap

In partnership with GCCA member LixCap, WFLO is carrying out a market assessment for cold chain logistics services in Egypt. WFLO will offer a market overview of the sector, perform supply and demand analyses, and develop strategic recommendations for improving cold chain in the country. Ultimately, this assessment will offer investment strategies to the donor to further develop the Egyptian cold chain.

Georgia Agriculture Project, 2018–2023

Partnered with Cultivating New Frontiers in Agriculture

WFLO has partnered with Cultivating New Frontiers in Agriculture (CNFA) to support the USAID Agriculture Program in selecting appropriate cold chain technologies for a given product, enterprise and operating environment. WFLO support includes a market study, training, investment awareness seminars and association development, which is critical for sustainability.

Indonesia Market Assessment of Temperature-Controlled Logistics Services, 2021

Partnered with ARPI and LixCap

WFLO is conducting a market study for the temperature-controlled logistics services sector in Indonesia. This team of cold chain technical experts and research analysts will determine current and future supply and demand of cold chain services and examine the economics of the value chain. In understanding the constraints and opportunities for growth of the sector, this team will develop actionable recommendations for increased efficiency and investment.

Central Asia Competitive Trade and Jobs Project, 2018–2021

Partnered with DAI

By lending time and expertise, several GCCA members have made it possible for WFLO to offer virtual short courses on cold store operations and five online training modules on the cold chain, HACCP, warehouse receiving and sanitary transportation in Central Asia. WFLO has also developed a training module to support local consultants as they expand their skills to support cold chain businesses. Six modules have been developed that include courses on Cold Chain Consulting 101, Financial and Assessment Methodologies, and deep dives in postharvest, cold storage and transportation. All courses are offered in Russian.

Morocco Cold Chain Analysis and Training, 2021 – 2022

Partnered with USA Poultry and Egg Export Council (USAPEEC)

WFLO is partnering with the USA Poultry and Egg Export Council (USAPEEC) on a USDA-funded project in Morocco. WFLO will focus on a cold chain skills gap analysis followed by the design of training and education programs to minimize the identified gaps in the cold chain. The analysis will take place during the summer of 2021 with subsequent training programs to be completed in 2022.

Pakistan Market Study for Temperature-Controlled Logistics Services, 2019–2021

Partnered with LixCap

Partnered with LixCap, WFLO is supporting a market study for TCL services in Pakistan. WFLO and LixCap have reviewed previous market assessments for the cold chain and offer recommendations for future investment in the country.

Philippines Market Assessment of Temperature-Controlled Logistics Services, 2020–2021

Partnered with Cold Chain Association of the Philippines and LixCap

WFLO is performing a market study for TCL services sector in the Philippines. The main objectives of this project are to determine the existing and future demand and supply for TCL services and recommend strategies for growth. This will aid in developing strategies to attract third party logistics operators to the cold chain.

RECENTLY COMPLETED PROJECTS

Fiji Agri-logistics Deep Dive, 2021

Partnered with LixCap and Talanoa Consulting

With partners LixCap and Talanoa Consulting, WFLO explored opportunities for private sector participation in the agri-logistics sector in Fiji and identified the obstacles to the growth of this market. The deep dive covered all relevant parts of the agri-logistics sector that support movement and distribution of agriculture products from farm to markets. Specifically, WFLO analyzed the cold chain and emerging trends, such as sustainable logistics solutions, in Fiji.

Horticultural Value Chain Consulting Services, 2021

Partnered with DAI

WFLO provided horticulture value chain consulting services to support DAI Global LLC's research in Tajikistan. DAI is implementing a USAID-funded Feed the Future Tajikistan Agriculture and Land Governance (ALG) Activity. The WFLO team provided recommendations to address gaps in the cold chain, based on prior research and interviews with stakeholders in the country. This project was completed in Spring 2021. 🌐

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COOL SOLUTIONS

SCIENTIFIC ANSWERS TO COLD CHAIN CHALLENGES

This column highlights a cold chain question and answer submitted through the GCCA Inquiry Service to the team of experts on the WFLO Scientific Advisory Council (SAC).

To get instant advice from a private, online community of over 4,000 cold chain professionals, simply post your inquiry in the GCCA Online Community. All GCCA Members and their employees can access the GCCA Online Community at community.gcca.org/home. There are active forums for Construction & Engineering, Government Affairs and Third Party Logistics.

If you are not a GCCA member, or are unsure how to post in the GCCA Online Community, contact the GCCA Inquiry Service at www.gcca.org/inquiry. GCCA Members can also browse the full archive of inquiries and responses in the GCCA Inquiry Service Archive. Access to previous inquiries is restricted to members of GCCA core partner organizations.

Q: What actions can be taken to help keep meat frozen for up to 20 days? Many refrigerated vehicles arrive at the Kazakhstan/Chinese border from nearby regions, and due to quarantine restrictions brought on by COVID-19, the throughput of the crossing is significantly reduced. This can cause a queue of up to 600 cars forming at the crossing, with no priority conditions for export goods to move through the border. Refrigerated vehicles are idle in a common queue with empty vehicles. Specifically, in April, three trucks with frozen meat waited at the border for about 20 days.

A: The temperature of the meat will rise in proportion to the heat that is transferred into it and inversely proportional to its mass. If you start at a uniform low temperature and transfer heat to the meat, the surface would be expected to be at a higher temperature than the interior of the meat. If you reduce the heat transfer to the meat you will reduce the rate of heating and have a longer time before the surface of the meat exceeds the critical temperature.

You can reduce the rate of heating by packing the meat in a material that can absorb a large amount of heat without having a large temperature increase (large heat capacity). This material could be a block of ice, liquid carbon dioxide or liquid nitrogen fed from a cylinder into a surrounding chamber and released at a preselected temperature after it has absorbed much of the heat. If a change of phase is relied upon, the phase change should occur at a temperature that does not exceed the critical temperature.

In addition, using highly efficient insulation on the truck walls, such as what is used in a thermos, will reduce the rate of heat transfer and result in more time required to heat the meat.

Keeping the refrigerated space closed and keeping the frozen product packed as closely as possible will reduce the rate of temperature increase as much as possible. Ultimately, there is nothing other than operating the refrigeration system periodically that will keep the product

temperature from increasing indefinitely. Properly maintained and operated refrigerated truck trailers and containers that are “set correctly” can hold frozen meat for months.

Answer provided by Dr. Patrick Brecht, PEB Commodities; Dr. Donald Fenton, Kansas State University; Dr. Dennis Heldman, The Ohio State University; Dr. Subramaniam Sathivel, Louisiana State University. ☎



Winchester Cold Storage, Winchester, Virginia

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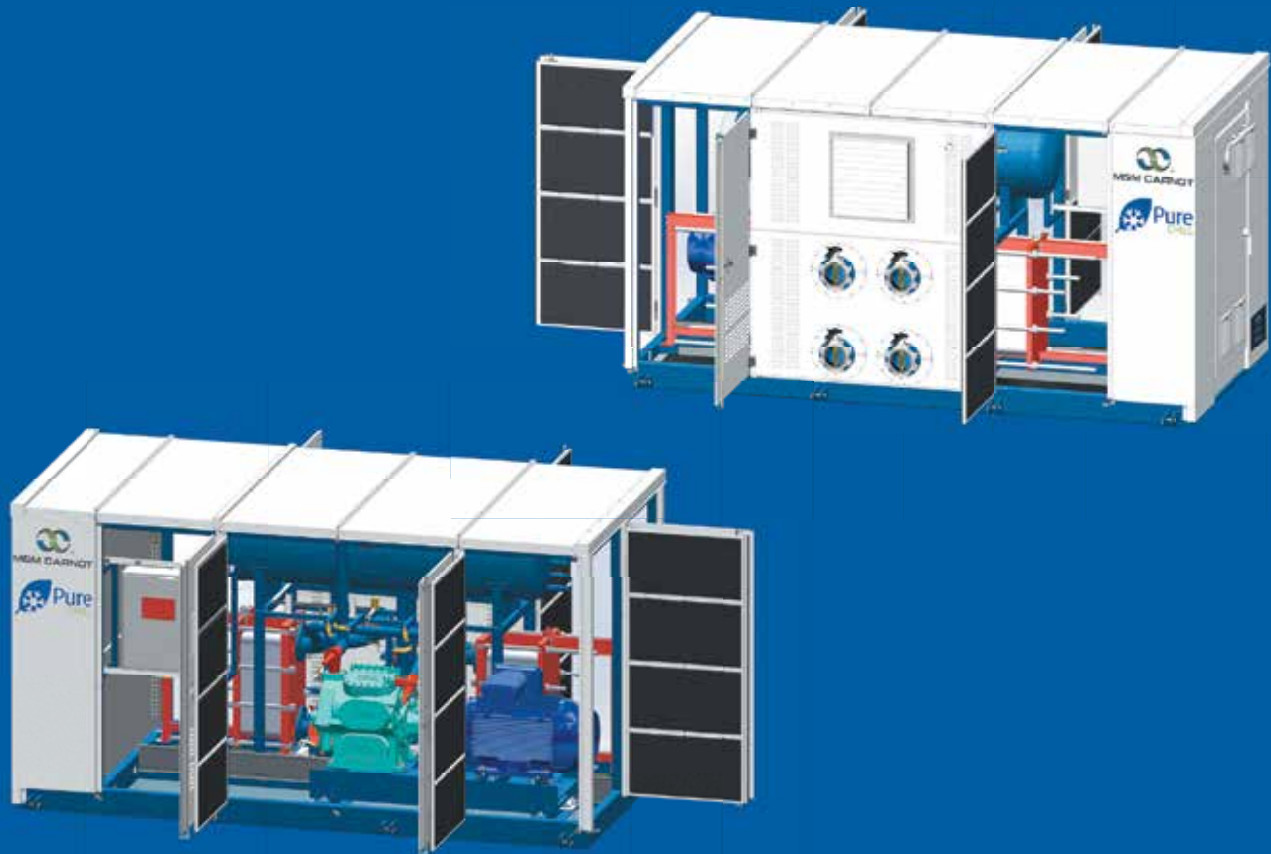


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Louisiana State University, Expertise:
Frozen Food Quality

Dr. S. Paul Singh

Michigan State University, Expertise:
Packaging & Labeling

Dr. Donald Schaffner

Rutgers, The State University of New
Jersey, Expertise: Microbiology

Brian Strouts

AIB International, Expertise:
Bakery Products

Dr. Charles White

Mississippi State University, Expertise:
Dairy Products

Dr. Elhadi Yahia

Universidad Autónoma de Querétaro,
México, Expertise: Tropical-Climate Fruit
& Produce

Joseph Slavin

Jos. Slavin & Associates, Expertise:
Fish Products

Dr. W. F. (Will) Stoecker

University of Illinois, Expertise:
Refrigeration Engineering

GCCA GLOBAL EDUCATION AND NETWORKING EVENTS

(as of July 2021)

26–28 JULY, 2021

GCCA Cold Chain Policy Forum

In-Person Meeting / Washington, D.C.,
United States

8–11 SEPTEMBER, 2021

57th WFLO Institute East

In-Person Meeting / Atlanta, Georgia,
United States

20–22 SEPTEMBER, 2021

WFLO Institute Latinoamérica

In-Person Meeting / Mexico City, Mexico

26–29 SEPTEMBER, 2021

57th WFLO Institute West

In-Person Meeting / Tempe, Arizona,
United States

8–10 OCTOBER, 2021

130th IARW-WFLO Convention

In-Person Meeting / Austin, Texas, United States

2–4 NOVEMBER, 2021

41st CEBA Conference & Expo

In-Person Meeting / Las Vegas, Nevada,
United States

TBD NOVEMBER, 2021

GCCA Latin America Cold Chain Congress

In-Person Meeting / Guadalajara, Mexico

TBD DECEMBER, 2021

GCCA Brazil Symposium

In-Person Meeting / Sao Paulo, Brazil

*All events are subject to change due to
COVID-19. Visit www.gcca.org/events
for updates.

SAC MEMBER SPOTLIGHT

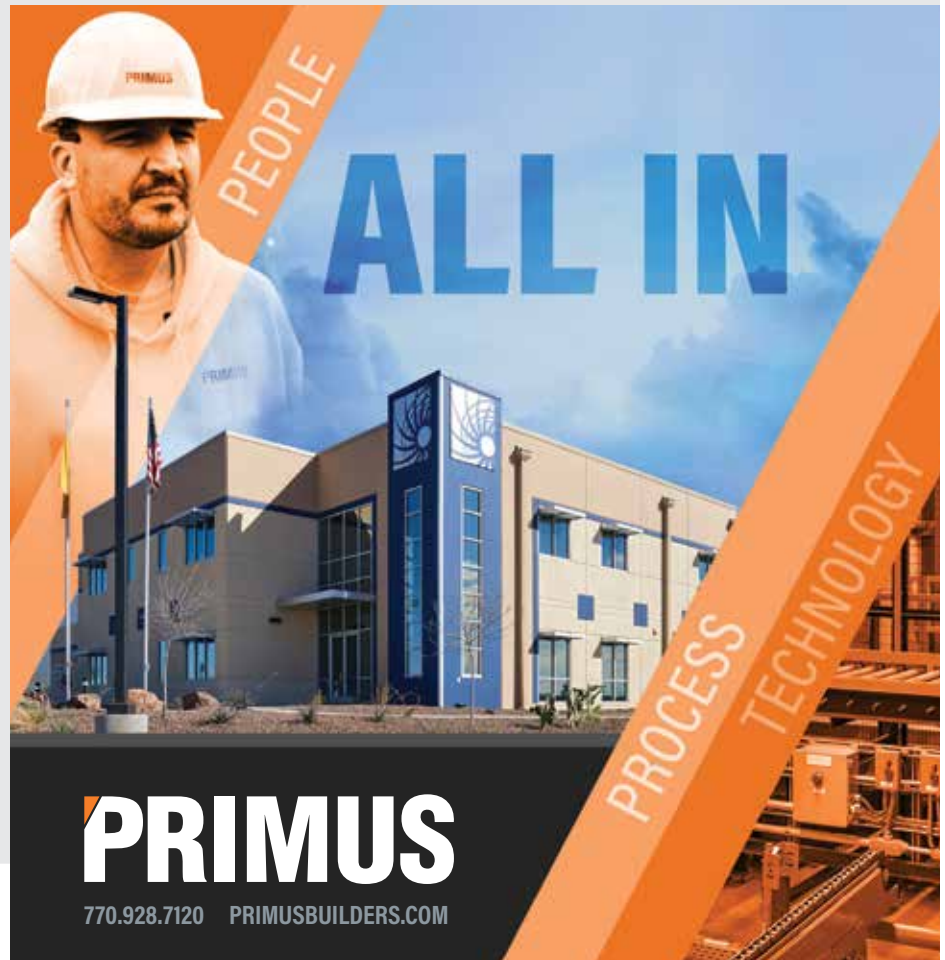


DR. SUBRAMANIAM SATHIVEL, PHD
Professor of Food Engineering
Louisiana State University

Dr. Subramaniam Sathivel (Sathi), who provides the WFLO Scientific Advisory Council with expertise on frozen food quality, is a Professor of Food Engineering within the Department of Biological and Agricultural Engineering in the School of Nutrition and Food Sciences at Louisiana State University (LSU). Sathi received a B.S. degree in Agriculture with a major in Agricultural Engineering from the University of Peradeniya, Sri Lanka. He obtained a M.S. degree in Food Technology with a major in Process Engineering from the University of Reading, United Kingdom. He earned the Doctor of Philosophy in Food Science (Food Engineering) at Louisiana State University.

His research interest and activity have focused on food engineering with emphasis on design and development of unit operations for food processing including freezing and frozen storage; processing and conversion of food materials; preservation and packaging of foods that include edible coatings and micro-encapsulation; thermal, rheological and functional properties of functional ingredients and foods; utilization of agricultural processing wastes; and optimization of processing conditions.

Sathi was recognized for his teaching at the College of Agriculture with the 2012 Outstanding Teacher Sedberry Award. The College of Engineering awarded him the 2014 Tigers Athletic Foundation Michael R. Mangham Undergraduate Teaching Award. In 2016, LSU recognized Sathi's teaching, research, and services efforts with a LSU Distinguished Faculty Award and, in 2017, he received the Gamma Sigma Delta Distinguished Achievement in Agriculture Award of Merit, Louisiana State University. 📧



MEMBER NEWS

NEWS FROM MEMBERS OF GCCA CORE PARTNERS

COLLIERS will break ground on its first cold storage industrial space in July 2021. The 167,000 square-foot facility, located in Liberty, Missouri, United States will include enhanced roof loads and specialized floor slabs to maintain refrigeration and freezer temperatures. “The building will be specifically designed to accommodate the unique requirements of cold storage users to capture the demand primarily tied to the expanding food and beverage industry, due to the rise in online grocery shopping, delivery, increased consumption of frozen/prepared meals, and consumer expectations for quick services” said John Stafford, Executive Vice President of Colliers Kansas City.

CONGEBEC Inc is expanding its Mississauga facility, in Ontario, Canada, from 170,000 square feet to 232,600 square feet, increasing storage capacity by 12,000 pallets.



CONSTELLATION COLD LOGISTICS, a pan-European platform comprising cold storage businesses, announced that its partner company in Belgium, Stockhabo, has reached an agreement to acquire 100% of the shares in Frigologix. This acquisition expands the Constellation network into France, which now has over 440,000 pallet positions of capacity in its facilities across six countries in Northwest Europe.

DR. ELHADI YAHIA KAZUZ, Professor/ Senior Scientist and head of the Laboratory of Phytochemicals and Nutrition at the Autonomous University of Querétaro, and member of the WFLO Scientific Advisory Council, has been appointed Emeritus Professor by the Mexican Federal National Research System (SNI). It is the highest distinction of the SNI and is given for life.



LINEAGE LOGISTICS reached an agreement to acquire **KLOOSTERBOER GROUP**, a leading independent integrated platform for temperature-controlled storage, logistics and value-added services in Europe. Kloosterboer consists of 11 facilities across

160 facilities
have already made a commitment
to improving the cold chain




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the Netherlands, France, Germany, Canada and South Africa, totaling 6.4 million cubic meters of capacity and 790,000 pallet positions and employing over 900 team members. The Kloosterboer family will continue to be involved in the future of the company.



THE RAYMOND CORPORATION has been recognized as a Manufacturing Leadership Awards winner in the Operational Excellence Leadership Award category for its outstanding achievement at the plant located in Greene, New York, United States. This is the fifth year in a row the company has received a Manufacturing Leadership Award.

RLS LOGISTICS announced plans to build a new cold storage warehouse in Sturbridge, Massachusetts, United States. **TIPPMANN INNOVATION** will lead the construction with the facility set to open Q1 2022. The facility will provide public cold storage warehouse capacity relief and access to RLS' temperature-controlled less-than-truckload shipping programs. The 83,000-square-foot temperature-controlled cold storage warehouse will have 18,000 pallet positions for refrigerated and frozen foods with the support of a mobile racking system that allows the cooler warehouse to hold 40 to 45% more pallet positions than the standard double deep racking.

TIPPMANN GROUP has been selected by Blackline Cold Storage to design and construct its new 298,000-square-foot cold storage facility at the Port of Houston, Texas. The facility will incorporate flexibility for multiple segregated temperature zones (including blast freezing capability), 48-foot ceiling heights, up to 50 truck doors and rail connectivity.



VAPOR ARMOUR Inc has installed its vapor seals in the FICO/Green Valley Pecan facility in Sahuarita, Arizona, United States, which has 40,000 square feet of cooler space. Vapor Armour installed 820 feet of base IMP-to-foundation seal; 820 feet of exterior compression seal around the roof-IMP perimeter; 9,566 feet of Vapor Lock on the IMP vertical connections; and 280 feet of interior demising wall seals. ☞



HIGH-BAY WAREHOUSE FOR DEEP FREEZE INTRALOGISTICS AT ITS BEST

In Burley, Idaho, NewCold celebrated the grand opening of one of the largest frozen storage facilities of its kind. This impressive project includes a high bay warehouse with 90,000 pallet positions supplied by SSI SCHAEFER.

The demand for deep-freeze products continues to grow. As volumes increase, requirements placed upon deep-freeze logistics are getting more complex. SSI SCHAEFER offers flexible, modular, and scalable solutions that optimize storage, picking processes, and profitability within cold storage facilities.

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ASSOCIATION NEWS

NEWS ABOUT GCCA CORE PARTNERS

GCCA and RLS Logistics are honored to announce the creation of the “Anthony M. Leo WFLO Scholarship.” In recognition of all of Tony’s contributions to the association and the industry, the scholarship will provide the opportunity for individuals working in the third-party cold chain logistics industry to participate in the three-year WFLO Institute training program.

Before his passing in March 2021, Tony was a highly engaged member of the association serving as Treasurer of the IARW Board of Directors, participating on numerous committees and presenting at events. He was a passionate advocate for training and educating the next generation of future cold chain leaders, and it is our hope that this scholarship will allow his love of the industry to live on.

Through the Anthony M. Leo WFLO Scholarship, one individual will be selected each year with RLS Logistics contributing funds to



allow for a second scholarship to be awarded. The scholarship will cover registration fee and travel expenses. Nominees will be evaluated on their status as a high-performing professional member of your organization, attitude, leadership skills and overall dedication to the industry as well as how the WFLO Institute will affect their ability to become a future leader in the industry.

The program will be accepting nominations for the 2021 WFLO Institutes. To nominate an individual from your company for the scholarship or to donate, please visit: <https://www.gcca.org/anthony-m-leo-wflo-scholarship>



IARW announced its 2021-2022 Board Member roster recently. The IARW Officers were elected by the IARW Board during their recent meeting in April. The IARW Board members were elected via electronic vote by each organization’s membership in May.

As a result of the challenges posed to the organization by the global pandemic and the need for stability in volunteer leadership, the IARW Board of Directors voted to re-elect Ron Buford, Premier Refrigerated Warehouse, as the 2020-2021 IARW Chairman. Manuel Cabrera Kabana, Friopuerto Investment,

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The incoming Administration and Democratic controlled Congress could implement burdensome regulations and increase oversight over our industry in a number of ways. This includes:



OSHA COVID-19 STANDARDS

- Enacting a national emergency temporary standard for industry
- Sets the stage for permanent regulation on infectious disease control in the workplace



CLIMATE CHANGE

- Pursuing aggressive policies to address climate change, through both executive action and legislation
- Rejoining the Paris Climate Agreement, eliminating greenhouse gas emissions, and implementing the Green New Deal



TAXES

- Rolling back the Trump tax cuts
- Increasing the corporate tax rate from 21% to 28%, phasing out deductions for pass-through entities
- Raising the top marginal income-tax rate from 37% to 39.6%
- Less money in the pockets of businesses means less jobs available for hardworking employees

A Democrat controlled White House and Congress will only mean more rules, regulations and burdensome policies.



LABOR

- Strengthening worker organizing, collective bargaining and unions through executive action and legislation such as the PRO Act
- Labor initiatives, like 'micro-unit' organizations and joint employer policies could quickly be reinstated



ADDITIONAL REGULATIONS

- Revisiting EPA's Risk Management Program (RMP) regulation and making additional requirements
- Changes to Process Safety Management

THERE IS SOMETHING YOU CAN DO.

To learn more about how you can contribute contact
Lowell Randel (lrandel@gcca.org) or visit www.gccaadvocacy.org.
Visit ADVOCACY.GCCA.ORG for more information.

ASSOCIATION NEWS

NEWS ABOUT GCCA CORE PARTNERS

S.L., will continue his service as IARW Vice Chairman. In addition, the IARW Board approved Michael J. McClendon, Lineage Logistics LLC, as IARW Treasurer, filling the seat held by Anthony M. Leo, RLS Logistics, who served as IARW Treasurer before passing away in March. Andrew B. Janson, President, MTC Logistics, will remain as IARW Immediate Past Chairman.

Newly elected members for the IARW Board of Directors for three-year terms are Nicholas Pedneault, Congebec Logistics, Inc. (North Atlantic Regional Representative); Carlos V. Rodriguez, Americold Logistics, LLC; and Rick Vine, Lineage Logistics, LLC (RWTA Representative). View the full IARW Board of Directors roster at <https://www.gcca.org/iarw/iarw-board-directors>



WFLO announced its 2021-2022 Board of Governors roster. The WFLO Officers were elected by the WFLO Board during their recent meeting in April. The WFLO Board Members were elected via electronic vote by each organization's membership in May. The WFLO Board voted to re-elect Brian Beazer, WCS Logistics, to serve as the 2021-2022 Chairman of WFLO Board of Governors. Daniel Kaplan of Polaris Cold Storage and Rack Builders Inc. will continue to serve as Vice Chairman and Greg Laurin with Conestoga Cold Storage, will continue to serve as Treasurer. Paul Henningsen of Lineage Logistics, LLC will continue to serve as Immediate Past Chairman. Newly elected members for the WFLO Board of Governors for three-year terms are Justin Brandt, Nor-Am Cold Storage and Marty Steinmetz, United States Cold Storage. View the full WFLO Board of Governors roster at <https://www.gcca.org/wflo/wflo-board-governors>

The **CEBA** Built by the Best Award acknowledges association members around the globe for their expertise and innovation in constructing, renovating and/or modernizing controlled environment buildings. Buildings recognized with the Built by the Best Award seal represent some of the most innovative and complex facilities built according to the intricate, unique standards set forth by the controlled environment industry. The award is open to project teams in all regions and continents that represent Contractor/Design-Build companies and Processor/End-User/Warehouse/Third-Party Logistics companies that are association members. Any of these parties can submit an application. The 2021 deadline for submissions is August 16. 📧



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FiCON Inc.

Bridgeton, Montana, United States

Langan

Warrington, Pennsylvania, United States

MAPP Construction

Sandy Springs, Georgia, United States

Protectowire FireSystems

Pembroke, Massachusetts, United States



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ALBA MFG Inc.

Fairfield, Ohio, United States

FiCON Inc.

Bridgeton, Montana, United States

Food Properties Group Inc.

La Canada, California, United States

Gamma Graphics Services (GGS)

Colorado Springs, Colorado, United States

Koerber Supply Chain Automation GmbH

Leingarten, Germany

MAPP Construction

Sandy Springs, Georgia, United States

Nitto Inc.

Teaneck, New Jersey, United States

Protectowire FireSystems

Pembroke, Massachusetts, United States

Rack Builders Inc.

Schaumburg, Illinois, United States



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Santo Domingo, Dominican Republic

HSB Coldstores

Grimsby, United Kingdom

Maersk

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Vertical Cold Storage

North Sioux City, South Dakota, United States



IRTA MEMBERS

ACS Holdings LLC

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Coldrush Logistics Private Limited

Mumbai, India

Gear International

Kabul, Afghanistan

Frio Box

Santo Domingo, Dominican Republic

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LUCA QUARESIMA

Luca Quaresima, Europe Logistic and Operations Manager of NewCold Advanced Cold Logistics, is the recipient of the 2020 GCCA European Cold Chain Future Leader Award and the GCCA Global NextGen Award.

CF: You studied supply chain management all the way through graduate and post-graduate school. When did you first become interested in the temperature-controlled supply chain and why?

LUCA QUARESIMA: I always was a dynamic and ambitious person, so I wanted to work in a sector that was growing quickly, played an important role in innovation and offered new market challenges that allowed me to highlight my problem-solving skills. So, the frozen food market was the perfect one, and it is also a very visible one, particularly in a country like Italy where the fresh food traditions are starting to make way for frozen food.



Automation is the present and the future, and with it, we can improve the lives of the global population and economy and provide solutions to customers' demands at a proper price."

CF: What does winning the 2020 GCCA Global NextGen award mean to you?

LQ: It means first that belief in a professional and honest work ethic pays back. It is the signal that all the sacrifices made sense. It is a way to say thanks to my company, Bram Hage and the managers that believed in me and the results I bring. It is a way to say thanks to my wife and my family. And the award is a signal to all the young people that they are the owner of their future, and nothing is impossible with hard work.

CF: What excites you most today about automation and robotics?

LQ: Automation is the present and the future, and with it, we can improve the lives of the global population and economy and provide solutions to customers' demands at a proper price. It ensures efficiencies and high quality. However, it is important to recognize that automation is good when it is required and makes sense to use, but not always.

CF: In 10 years, what kind of automation do you think will be having the biggest impact on the cold chain industry?

LQ: Automation in the cold storage industry is a logistics revolution because it reduces energy costs by 55%, direct labor costs by 50% and requires utilizing one quarter less land.

CF: What do you like to do when you are not thinking about automizing operational processes?

LQ: I am a sommelier, so I like to look for excellent, small wine producers.

I love the philosophy of good food and a cigar, but also I like to cook together with my wife. ☺



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