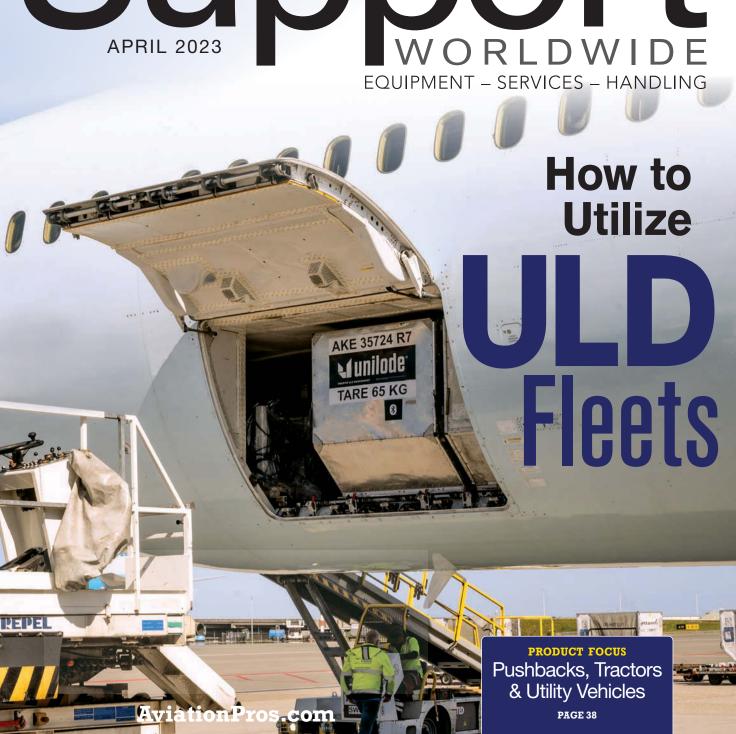
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INTERNATIONAL TIACA'S Pursuit of Sustainability

# Ground SUDDOTT APRIL 2023 WORLDWIDE





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#### **Editor's Note**



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Linked

# Collaboration to Solve Challenges

ueling equipment manufacturers gathered recently to share solutions, best practices and new innovations with ground handlers, military personnel and other representatives of the ground support community.

After a three-year hiatus, the Gammon Aviation Fuel Handling Training Symposium returned. The event was held in conjunction with the NPMA Petro 23 Conference in Washington D.C. in March.

"This was a very abbreviated symposium. Normally, we do two and half days. This was basically condensed into a third of that size," said Jim Gammon, president of Gammon Technical Products.

During the co-hosted event, the Gammon Symposium brought subject

matter experts from Liquid Controls, Total Control Systems, Cla-Val, Eaton/Carter Ground Ground Fueling, Meggitt, Westmor, Rampmaster, the National Air Transportation Association (NATA), Argus Consulting, Parker Velcon, Facet Filtration, Airlines for America (A4A) and more.

These industry representatives offered attendees updates on smart

In the long run, what's best for the industry is best for everybody in it.

J J – Jim Gammon

metering, control valves, nozzles, system designs, fuel quality control, contamination mitigation and fuel filtration technology, among others.

"As far as what going on that's changing into plane fueling is that we're improving the systems and making them more efficient," Gammon said.

He pointed to energy efficient refueling trucks that offer reduced emissions and fuel consumption, electric refuelers and electric hydrant carts as just a few examples of the advancements taking place in this area of ground support equipment.

Members of the industry also discussed present-day challenges. For example, material availability continues to impact the industry and influence lead times for manufacturers.

Speakers also pointed out workforce issues that need to be overcome.

"A lot of people saw COVID as a good reason to retire," Gammon said. "When COVID hit, they said 'the heck with it, I'm retiring.' Well, now you've lost the guy who 'knew how do to that.'

"I think it's affecting every industry."
The goal of the symposium,
Gammon explained, is to bring stakeholders – including competitors – into
the same room to work together.

"Everybody benefits," he said. "That was the whole reason for the symposium. Not to have a straight educational thing, but to have the competitors up there discussing things."

Gammon said the results have been good.

"It's worked out great. In the long run, what's best for the industry is best for everybody in it," Gammon said. **GSW** 





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#### **TOP NEWS**

## **Autonomous Vehicle Testing** in Singapore To Focus on the Aircraft Stand, ULD Loading

Aurrigo International has signed a formal partnership agreement with Changi Airport Group (CAG) for the continued joint development and testing of the company's advanced autonomous, electric baggage vehicles: Auto-Dolly and Auto-DollyTug, and the company's airport simulation software platform: Auto-Sim.

Phase 2 testing will focus on the aircraft stand. With its small footprint and tight turning radius, the Auto-Dolly can maneuver itself precisely next to an aircraft and ground support equipment (GSE). In addition, it has the capability to transfer a unit load device (ULD) to and from a Skyloader, which loads the plane. According to Aurrigo, CAG is the first airport in the world to test the equipment's ability to perform autonomous loading and unloading of ULDs at the aircraft stand.

"We have worked closely with the team at Changi Airport for several years and this partnership cements our collaboration to bring the best automated solutions to airlines and airports, enabling them to improve operational efficiency, cost and safety and sustainability," said David Keene, CEO of Aurrigo.

"We have been testing the electric and autonomous Auto-Dolly in real airport environments since 2018 and we have used that testing and customer feedback to continuously develop a vehicle that can operate safely and efficiently in the safety critical environment of an airport apron."

"Similar to major airports throughout the world, recruiting enough ground handling personnel and drivers to support our growth is a challenge. We have been encouraged by Aurrigo's innovative autonomous technologies to help address these issues, and we're excited to partner Aurrigo in joint development and testing of these solutions in the real world," added Poh Li San, SVP of Terminal 5 planning, Changi Airport Group.

The development and testing of Aurrigo's autonomous vehicles is partially funded by the Civil Aviation Authority of Singapore (CAAS) through its Aviation Development Fund (ADF).

#### **Upcoming Events**

May 2-4 **NBAA Maintenance Conference** Hartford, CT

#### May 16-18 **IATA Ground Handling Conference** Abu Dhabi, United Arab Emirates

**June 3-5 AAAE Annual Conference & Expo** Denver, CO

#### June 19-21 **GSE&RAMP-OPS Global** Seville, Spain

**July 24-30 EAA AirVenture** Oshkosh, WI



#### **SATS Joins IATA Environmental Program**

SATS Ltd. has joined the IATA Environmental Assessment (IEnvA) Program for ground handling service providers, making SATS the first ground handler in Asia Pacific to join.

An ecosystem partner in the Changi Aviation Hub, SATS has invested in

solarization, optimization and electrification programs to reduce its carbon footprint. For example, the company has converted 262 tractors and 141 forklifts deployed across its operations to electric.

"Sustainability is an ecosystem play, and not one player can solve the problems alone. Aligning ourselves with international best practices in environmental

management allows SATS to plug into IATA's platform to introduce world-class standards to the partners we support. Using IEnvA's standards to guide our performance, we create a bigger impact with our sustainability initiatives by adding to the efforts of other players in the ecosystem using this same standard," said Bob Chi, CEO of Gateway Services, SATS Ltd.

#### Fraport Tests Autonomous **Baggage and Cargo Tractor**

Fraport AG Ground Services has trialed an autonomous baggage and cargo tractor. The electric vehicle operated on an 8 km test route within Frankfurt Airport's secure area. The aim of the trial, which took several weeks, was to determine whether and under what conditions an



autonomous vehicle can support regular baggage and cargo operations on the apron.

"Autonomous vehicles are a very promising future option for us as an airport operator. We've already trialed self-driving vehicles in some areas. But deployment on the apron on such a long route is a completely new dimension. Safety will be the top priority during the trial. The fact that we are tackling these kinds of innovative projects, despite the challenging operating conditions, once again emphasizes our role as a future-focused company," said Eric Agthe, project manager for process and product development at Fraport.

"For Fraport, this project is of high importance because of its potential to facilitate more efficient deployment of staff in the future. Due to the size of the airport apron, our employees often have

to cover long distances. If parts of these routes could be operated using autonomous vehicles, this would give the ground services teams more flexibility to handle flights even more efficiently," said Dennis Stein, vice president division development, logistics and IT.

#### Swissport Acquires Majority Stake in Düsseldorf Airport's Cargo Handing Unit

Swissport and Düsseldorf Airport have entered into binding agreements to acquire a 74.9 percent shareholding in Düsseldorf Airport's cargo handling unit, Flughafen Düsseldorf Cargo GmbH, mark-

ing an important step in strengthening its cargo presence in Germany.

With this transaction, Swissport and Düsseldorf Airport will enter a long-term partnership to merge their

existing air cargo handling businesses at Düsseldorf airport and to jointly develop them further.

"We are very pleased to enter into this long-term partnership with Düsseldorf Airport. It is a great example how we intend to partner with airports globally to strengthen their ground services and cargo handling offerings. We see that

airports worldwide are interested in talking to us about different strategic options for their cargo and ground handling units. We believe Swissport is the right partner for them due to our global network and industry-leading operational capabilities," said Warwick Brady, president and CEO of Swissport.

#### PrimeFlight Aviation Acquired by The Sterling Group and **Capitol Meridian Partners**

Global investment firm Carlyle has announced a definitive agreement to sell PrimeFlight Aviation Services to Capitol Meridian Partners and The Sterling Group.

The acquisition of PrimeFlight will represent a 50/50 partnership between The Sterling Group and Capitol Meridian Partners.

Headquartered in Texas, PrimeFlight has operations across approximately 235 stations globally.

"We're thankful to Carlyle for the tremendous support over the years. This is an exciting time for PrimeFlight as we have significantly expanded our operations outside of North America, continue to execute on new business wins, and we have a strong pipeline of continued growth through our global footprint. We look forward to partnering with Capitol Meridian Partners and The Sterling Group in this evolution," said Doug Brandely, Carlyle managing director.

#### **PEOPLE**

## dnata Promotes Phil McGrane to CEO, dnata Brazil

dnata has announced the promotion of Phil McGrane to the position of chief executive officer (CEO), dnata Brazil, with immediate effect. In his new role. McGrane will lead dnata's overall strategy and business, driving the company's growth and success across the country.

McGrane has been with dnata for more than 10 years. Since last July, he has overseen dnata Brazil's operations at 29 airports as acting CEO, managing a team of 5,000 local aviation professionals. In his previous position as chief commercial officer, he was responsible for leading all of the company's commercial activities, including business development and customer relations.

Overall, McGrane has more than 30 years' experience in the aviation and transport industries. Prior to joining dnata, he held various senior roles, supporting the commercial operations and growth of globally renowned companies in the Middle East, United States and Europe.

"Phil has made a significant contribution to dnata's business in Brazil over the past decade. His strong leadership skills, commercial mindset and customer-centric approach make him the right person to lead the company through its next phase of growth in the country," said David Barker, divisional senior vice president, airport operations.



#### **Jettainer Names New** General Manager for Middle East, Africa and Indian Subcontinent

Jettainer strengthens its foothold in the Middle East, Africa and the Indian subcontinent by adding Rammohan Krishnaswamy, a seasoned aviation expert, to its branch office in Abu Dhabi. He is responsible for Jettainer's customers and growth in the region as well as for the cool&fly product in his newly created position as general manager for the Middle East, Africa and Indian subcontinent.

Krishnaswamy, better known as "Ram" in the aviation industry, has almost 30 years of aviation experience working for leading airlines from Europe, the Gulf

region and India. Since 2019, Krishnaswamy had been overseeing the cargo business of Air Arabia Group as general manager cargo.

Krishnaswamy joins Jettainer to serve regional customers, like Etihad and Oman Air, and to further develop Jettainer's business in Middle East, Africa and the Indian subcontinent. Globally, he assumes ownership for Jettainer's cool&fly service. Jettainer's Temperature Control Competence Center in Abu Dhabi specializes in the management of refrigerated containers and acts as a central service point for customers worldwide. Its team of experts has been enabling customers such as Lufthansa Cargo, American Airlines, Delta Cargo and Etihad Cargo

to run their cool container transports smoothly for several years now.

"We are delighted to have Ram, a highly experienced aviation specialist, on board at Jettainer. He



has both outstanding business insights and excellent contacts in the region as well as global experience. Therefore, he understands the market dynamics very well. We also believe that the region and the cool business have great potential as the pharmaceutical sector is one of the fastest growing industries. We are looking forward to grow our business with new and existing customers," said Thomas Sonntag, CEO of Jettainer GmbH.

#### **NEW DEALS**

## IATA and Afroport Mauritanie Sign **Agreement on Ground Handling Safety**

The International Air Transport Association (IATA) and Afroport Mauritanie have signed an agreement to enhance the safety of ground operations in Mauritania with a focus on two critical global standards: IATA Ground Operations Manual (IGOM) and the IATA Safety Audit for Ground Operations (ISAGO).

"Global standards. such as IGOM and ISAGO are the foundation for a safe aviation industry. The commitment of Afroport Mauritanie to IGOM and ISAGO will help further Mauritania's social and economic development with safer ground operations. Lower adoption rates for global standards rank high among

> the factors limiting the benefits that aviation could deliver in Africa," said Kamil Alawadhi, IATA's regional vice president, Africa and the Middle East.

"Our goal in partnership is to support the development of a strong aviation sector with global standards and best practices at its heart. The agreement with IATA is a significant step towards achieving standardized, sustainable operations on the ground," said Ahmed Al Hadabi, Group CEO of Terminals Holding, the parent company of Afroport Mauritanie.



#### **BGS Renews Contracts with** Ryanair at Three Airports

Baltic Ground Services (BGS) continues strengthening its long-lasting partnership with Ryanair.

Under the renewed contract, BGS will provide Ryanair with into-plane fueling at Vilnius and Palanga airports in Lithuania, and Leos Janacek airport in the Czech Republic.

"Since the beginning of the partnership with Ryanair, our focus on quality, safety and client needs has formed the bedrock of our collaboration. We are elated that an industry-leading airline sees us as a reliable and experienced partner," said Vitalis Dudys, BGS group head of commerce.

The one-year renewal comes as an extension of a more than seven-year long lasting partnership.

"As an industry leader, we hope for nothing but the best from our chosen partners. BGS meets our highest standards and expectations and has been

delivering exceptional fueling services since we first began the cooperation. We are thrilled to continue working with them and look forward to further strengthening our partnership," said Steven Fitzgerald, head of sustainability at Ryanair.

#### **Rushlift GSE Secures Extension** to easyJet Gatwick Contract

Rushlift GSE has won a 56-month extension to its successful, long-running GSE contract with easyJet.



The new deal continues an existing five-year agreement with Rushlift GSE to supply, manage and maintain easy-Jet's ground handling fleet at London's Gatwick Airport.

In total over 570 ground support assets will be managed by Rushlift GSE under a progressive program of innovation and equipment enhancement.

"We are delighted that easyJet has chosen to endorse our close working relationship by extending our contract. With 75 pecent of easyJet's ground support fleet now electric, we look forward to continuing to support the business in completing its transition to electric-powered GSE equipment. And with the opening of our new maintenance and workshop facilities at Gatwick, we're offering our continued commitment to providing the high level of service and support expected by one of the industry's leading airlines," said Tim Willett, general manager at Rushlift GSE.

In 2017 easyJet took the step of deciding to lease ground support equipment directly, through Rushlift GSE, and bring in contractors that would supply labor resources only.



#### SAA Cargo Partners with Menzies to Provide Services at Three Airports

South African Airways (SAA) Cargo has appointed Menzies Aviation to provide air cargo services at OR Tambo International Airport (JNB) in Johannesburg, Cape Town International Airport (CPT) and Port Elizabeth International Airport (PLZ).

The appointment of Menzies followed a procurement process and is part of the ongoing restructuring process that SAA is implementing post-Business Rescue.

"This milestone is an important one, it is part of our efforts to re-position SAA

Cargo and unlock the value of SAA Cargo terminals. It also allows management to focus on critical strategic goals to grow our cargo business," says Professor John Lamola, chairperson and chief executive officer.

"The partnership with SAA aligns with the strategy to grow Menzies' footprint in Africa, where we see huge potential for growth. SAA is an important player in the cargo industry and this partnership is a real game changer for our business in South Africa as we are now based in the largest air cargo facilities in the country in the two main air freight ports. It also aligns with our long-term vision to strengthen our position as the leading aviation services provider in Africa," said Philipp Joeinig, CEO, Menzies Aviation.



#### **Aviator Extends** Partnership with Finnair for Five More Years

Aviator Airport Alliance is continuing its successful partnership with Finnair by extending the cooperation agreement for five years.

Under the renewed contract, Aviator will provide ramp handling services for Finnair's operations at Helsinki Airport. While Aviator has already provided services for a part of the airline's narrow-body fleet since 2021, this new contract extends the partnership scope to the wide-body fleet. Annually, the operations supported by Aviator will total to around 25,000.

"We are thrilled to continue working with Finnair and extend the scope of provided services. Together with Finnair, we have gone through major challenges, such as the global pandemic and war-prompted closure of Russian airspace, that had a large influence on their traffic and strategy. This five-year-long contract will allow us to continue this successful cooperation, marked by mutual support, respect, and exceptional attention to quality,"

said Jo Alex Tanem, CEO of Aviator Airport Alliance.

"We look forward to strengthening our cooperation with Aviator at Helsinki Airport as we continue to foster and develop safe and efficient ground operations. Excellent collaboration with our ground handling partners plays a significant role in ensuring a well-functioning home hub and positive customer experiencen," said Anniina Asikainen, head of ground service delivery at Finnair.



#### **BAA Partners with** Kuehne+Nagel to Expand Air Cargo Business

Kuehne+Nagel and the Birmingham Airport Authority (BAA) have announced details of a new partnership that will expand business opportunities for both the company and the region. This is the first time the BAA is partnering with a logistics company and the first time Kuehne+Nagel is establishing a presence at a secondary airport in North America. This partnership allows both organizations to better meet the cargo needs of businesses in the region and helps position Birmingham as an important part of the cargo market in the Southeastern corridor of the U.S.

This new partnership represents a new era of business development at the airport and positions the Birmingham Airport Authority to build on its role as an important center for business growth in the region and in the state of Alabama.

"This is a moment that will change the trajectory of this airport. The recent enhancements we've made to the infrastructure of the airfield, plans for a new air cargo facility, combined with this partnership with one of the leading logistics companies is getting us closer to realizing a long-term vision of expanding air cargo business in the region," said Darlene Wilson, chair of the Birmingham Airport Authority.



The state of the air cargo market and what carriers can expect as the broader air travel sector continues its recovery from the pandemic.

BY FIONA HENDERSON, JEFFREY WEEKS, JORGE GALVEZ

he pandemic-era surge in air cargo demand is moderating as transport network logjams ease and economic headwinds loom. But constraints that have hampered efforts to increase capacity amid the recent e-commerce boom could also help offset a softening airfreight market—and potentially blunt impacts from an anticipated global slowdown.

Many operators are still scrambling to get their hands on equipment, while labor and feedstock shortages are complicating efforts to boost cargo capacity through passenger-to-freight conversions. Those bottlenecks, along with limited production of new freighters by Boeing and Airbus and the increased use of long-term contracts by some shippers to lock in air cargo space, could keep rates relatively stable even as pricing levels off from 2021's record highs.

On a global level, airfreight capacity was still 10 percent lower in December — at the height of the holiday express season — than it was in the same month in 2019, before the pandemic, according to Deutsche Post/DHL Group. However, overall capacity is sufficient to support current demand and belly capacity



has increased, according to DHL's January 2023 Airfreight State of the Industry Report.

#### **Market Overview**

After a banner year in 2021, the airfreight market presents a mixed picture heading into 2023. In its most recent forecast, Boeing projected that air cargo traffic will grow by about 4 percent annually through 2041, as e-commerce networks and industrial production expand.

However, in 2022 industry-wide demand measured by cargo tonne-kilometers (CTKs) slowed, declining 8 percent for the full year compared to 2021, according to the International Air Transport Association (IATA). That figure represents a 1.6 percent decline compared to pre-pandemic levels in 2019.

Yet whether the glass is half empty or half full may depend on your standard of comparison. For example, while United Air-

lines reported that airfreight sales were down 35 percent YOY in the fourth quarter of 2022, cargo still accounted for a higherthan-usual share of the carrier's overall revenue. United also logged \$2.2 billion in cargo revenue, which, while down 7.5 percent from 2021, is nearly twice as high as pre-pandemic figures.

For its part, Delta Air Lines reported that its cargo segment notched record topline results. The company expects those revenues to increase further in 2023 despite lower rates "as increased capacity offsets the cargo yield environment," the company said in its fourth-quarter earnings call.

#### **Economic Uncertainty Ahead**

The looming threat of a global recession is prompting caution as cargo operators monitor stagnating export orders and indicators suggesting high inflation could well persist in the coming year. "Any increase in volumes will only happen post recovery of the stronger economies, which is likely towards 2H23," according to DHL's December airfreight report.

German logistics company DB Schenker, for example, has reportedly reduced the number of flights on its freighter network as the gap between air freight demand and supply narrows.

"More capacity is coming to the market and consumer demand has dropped due to the high inflation," Asok Kumar, executive vice president and head of global air freight for DB Schenker, told The Hindu. "Now yields are higher than pre-COVID but coming down because consumer demand is dropping."

However, cargo operators that have shifted some business out of the more volatile spot market — where big pricing swings present deeper risks and rewards — could benefit if freight demand continues to downshift. Large retail, manufacturing and logistics customers that found themselves pinched by soaring airfreight rates earlier in the pandemic, when capacity was in short supply, are increasingly willing to lock in multiyear contracts to guarantee transport space. These long-term deals can provide stability for carriers in an uncertain economic landscape.

#### Investing in Capacity

Despite the cloudy economic outlook, carriers and freight forwarders with an eye on long-term growth are moving ahead

#### **Industry Expert Column**

with investments to expand capacity. Carriers have increased flight frequencies across all regions and are adding new freight schedules, according to DHL.

Operators are also expanding their footprints. DHL Express, for instance, is building a new gateway facility at Munich Airport that's nearly seven times larger than their previous space. The company is also growing its partnership with Canadian carrier Cargojet, adding five Boeing 757 Freighters to the dozen that Cargojet already operates to service DHL's global aviation network.



Newer entrants are also deepening their designs on the airfreight market. Ocean shipping giant Maersk continues to scale up its new air cargo business, adding a second Chicago-area hub and launching two weekly U.S.-Korea flights. Also Amazon has bolstered its logistics network by launching a European air cargo network, including a regional air hub at Leipzig/Halle Airport in Germany.

Established operators like DHL see the above developments as less of a threat than an opportunity, particularly when it comes to boosting network flexibility. For example, DHL has purchased cargo and belly space from other cargo and passenger operators with room to spare.

#### **Evolving Outlook in Latin America**

The Latin American airfreight landscape offers a somewhat more upbeat picture versus the pre-pandemic environment. While air cargo demand in the region was lower in January and in the fourth quarter of 2022 compared to year-ago levels, numbers are still higher than in 2019, according to WorldACD. Demand could increase further as a result of China's relaxation of COVID-19 restrictions and as shifting macroeconomic conditions increase the likelihood of a "soft landing" for the global economy.

LATAM Cargo doubled down on its fleet after shifts during COVID-19 demonstrated the importance of freight revenue to the overall business. Before the pandemic, LATAM Cargo had a fleet of 11 Boeing 767 freighters. By adding another 10 Boeing converted freighters to the fleet, LATAM plans to nearly double its capacity, with up to 21 aircraft by the end of 2023. These

medium-widebody 767 freighters are well-suited for certain markets in South America, where it's less efficient to use large aircraft on some cargo routes. That fleet expansion has allowed LATAM to design and implement tailor-made long-term solutions for strategic customers on less-typical routes by leveraging the fuel-efficiency and optimal size of those aircraft.

That expansion will allow LATAM and its cargo subsidiaries to improve connectivity between North and South America and strengthen capacity from Colombia and Ecuador - key routes for that region's flower industry. Additional flights will also support Chilean salmon exports and boost capacity between Brazil and markets in North America and Europe.

#### Challenges on the Horizon

Passenger-to-freighter conversions are a critical component of capacity-building strategies for LATAM and other operators amid limited production of new freighters by Boeing and Airbus. Competition for conversion slots is intense and the availability of feedstock for that work presents another potential bottleneck.

Operators scouting for those planes may have to wait longer or pay more than they expected. Labor shortages tied to the pandemic can also hamper those efforts — for example, if there aren't enough staffers on shift for maintenance painting or other work.

Other areas to watch include the shifting of some cargo volumes from air freight to ocean as container shipping costs decrease from COVID-era highs and products that shippers had been flying to avoid transport delays move back to more affordable, but slower, modes of transport. However, some freighter capacity could be removed from the market as rising passenger travel demand expands the amount of available belly space potentially crimping the profitability of freight-only cargo operations. Operators are also keeping an eye on labor talks at U.S. West Coast ports, which could increase air cargo demand if an impasse blocks the flow of imports through those gateways.

While the pandemic-era logistics boom may be receding, improving global economic forecasts could potentially bring bluer-than-expected skies for the air cargo market as China's economy reopens and US inflation moderates. GSW

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To meet the needs of the air cargo sector, new technology and advanced solutions are being incorporated into containers.

BY JOSH SMITH



hroughout the COVID-19 pandemic, the role of air cargo was in the spotlight for several reasons.

As shipping bottlenecks and delays worsened, air cargo allowed freight to be quickly transported across the globe. And as vaccines became available, the industry was tasked with distributing billions of doses to every corner of the world. The latter placed a greater emphasis on temperature-sensitive solutions to handle specifics such as pharmaceutical requirements.

To facilitate the needs of cargo carriers, ULD manufacturers and fleet managers are assisting customers with new generation technology.

Over the course of the pandemic, cargo volumes boomed, explains Ross Marino, CEO at Unilode Aviation Solutions.

As a result of the pandemic, he says passenger loads bottomed out to almost nothing and many airlines survived on cargo revenues.

"We found during the pandemic that as passenger loads declined, we saw less need for the container fleet because typically baggage is transported in containers. And we saw the need for pallets really climb as cargo loads were prominent," says Marino, whose company boasts a fleet of approximately 160,000 ULD units. "We went from having a fairly balanced use of containers and pallets prior to the pandemic, shifting very much towards pallets due to the increase in cargo volumes."

According to Fredrik Linnér, chief business development officer at Envirotainer, air cargo capacity dropped by approximately 50 percent almost overnight.

"From our perspective, roughly half of the containers fly with dedicated air cargo airplanes and the other half flies with the normal passenger traffic. And that dropped almost completely. So, half of air cargo capacity went away," he says, noting Envirotainer operates a fleet of 7,500 ULD containers.

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"Since air cargo capacity was tight, it was more difficult for our customers - but also for ourselves - to reposition containers," Linnér says. "So instead of leasing out containers and getting them back at the same station, our customers demanded to basically drop them off at the destination instead. That increased a lot the number of one-ways."

That trend has driven the need for growth of Envirotainer's ULD fleet, Linnér explains, so the company expanded its active container fleet by over 30 percent last year and is planning to do the same this year.

According to Andreas Seitz, managing director of DoKaSch Temperature Solutions, congestion at seaports threw international supply chains into severe imbalance, furthering cargo capacity issues.

"The rapid increase in demand for air freight to compensate this missing ground-bound capacities not only made air cargo capacities less available, but also more difficult to overwatch," Seitz says.

During the second half of the pandemic, the air cargo industry was tasked with distributing vaccines for COVID-19. globally.

"Pharma was continuously shipped during the pandemic. But when the vaccines started to ship, we saw an uptick. That accelerated the growth. We shipped well over a billion doses of COVID vaccines in our containers," Linnér says.

At DoKaSch Temperature Solutions, officials saw similar demands for specialized equipment for temperature-sensitive freight and high risk/high value goods.

"The corona crisis has clearly increased the demand for these highly specialized containers. One reason for the growing demand were the transportation of vaccines," says Seitz.

Since restrictions have begun to ease, Linnér says Envirotainer has seen an accelerated growth of shipments of pharmaceuticals.

"We believe that the normal pharmaceutical shipments were suppressed during the pandemic, both due to the restricted capacity but also due to the need to ship vaccines, which were even more prioritized," he says.

"The increasing internationalization of the pharmaceutical industry also continues to drive strong demand for the transport of temperature-sensitive air cargo such as pharmaceuticals and biotech supplies," Seitz adds.

Coming out of the pandemic, officials at Unilode see passenger loads returning. As a result, the ULD mix is rebalancing to pre-pandemic levels.

"In those markets where we're seeing the passengers return, we're obviously starting to put many more containers back into operation," Marino says, noting a prime example is airlines in China increasing flight schedules as restrictions ease. "We're now starting to introduce a lot more containers back into operation than before because passengers are starting to fly.

"Our expectation is that the container traffic will become busier because a lot of airlines still have some way to go before they get to pre-pandemic levels," he continues. "As



airlines start to increase schedules, we expect the container traffic to get back to pre-pandemic levels in 2024."

What's more, Unilode officials also hope cargo volumes will remain strong.

"We know that yield remains strong compared to pre-pandemic levels, but it has come off its peak somewhat," Marino says. "I hope that cargo volumes that have softened will not decrease further and that we see a robustness in cargo volumes moving forward."

#### **ULD Technology**

To meet the needs of cargo carriers, new technology is being incorporated into ULDs and containers.

For example to assist with temperature-sensitive goods like pharmaceuticals, DoKaSch Temperature Solution's Opticooler utilizes compressors and heat exchangers for temperature regulation. The Opticooler's temperature control system allows the unit to autonomously regulate temperature to avoid deviations.

"In the area of temperature-controlled containers, it is primarily the pharmaceutical manufacturers who specify the requirements for the containers so that the valuable goods such as medicines and vaccines can be transported safely and reliably to their destination," says Seitz. "For this reason, we are always in close contact with the industry in order to constantly optimize our Opticooler to meet the requirements."

Linnér notes Envirotainer has invested heavily in ULD technology to ensure containers meet the needs of the pharmaceutical industry, among others.

"We've invested a lot in terms of increasing the quality of the containers. In 2021 and last year, we launched two ULD sizes with our latest technology," he says.

Envirotainer officials have made significant investments in three key areas. These include temperature control, live monitoring and battery technology.

From a technology standpoint, Unilode has placed an emphasis on digitalizing its fleet of ULDs.



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"Our intention is to get our fleet fully digitized. We're at about 80-85 percent of the way there. Our intent by the middle of the year is to get to 90 percent tagged ULDs," Marino notes.

"Our ULDs have got tags in them. And those tags enable us to track the movement of a ULD," he adds. "We are also able to get sensory data such as temperature, shock, light and humidity. We're able to record these sensory measures. So, if you are shipping perishable goods that require refrigeration, or if you are requiring shock-sensitive machine parts, or whatever it might be, what we've created with our service offering is the ability to monitor and ensure the cargo is transferred in the right manner and conditions."

Envirotainer offers an internet of things (IoT) component to its ULD fleet as well. Its live monitoring solution uses a module that fits into the container, which can send data through either a Wi-Fi or cellular connection.

"This enables us to locate the container anywhere, and also to get the temperature data – basically, all of the data from the container any time that it's not in the air," Linnér says. "This is very valuable to our customers and the services we can build around this data."

Linnér points out the key challenge with live monitoring is ensuring the transmission of data is turned off while the container is in flight to avoid interfering with aircraft systems.

"The industry has been, due to safety reasons, very cautious about what type of technologies to allow," he says.

The battery systems used to power advanced containers is a key consideration as well.

"When it comes to our containers and how they maintain temperature control, we have worked a lot in order to make them more efficient. That means we run the temperature control system more efficiently and reduce the consumption of energy," Linnér says. "We have also worked a lot on making

RAP100413D Opticooler www.dokasch.com The demand for specialized equipment for

temperature-sensitive freight and high risk/high value goods increased during the pandemic.

the design more efficient to put in more batteries without increasing the total weight of the solution."

Minimizing the weight of the battery and therefore the total weight of the container helps airlines reduce aircraft fuel consumption. Battery charging conveniences are also being engineered into ULDs.

"To bridge very long, unforeseen downtimes, it only takes a simple socket to charge the Opticooler," Seitz points out.

#### **ULD Maintenance**

"Unfortunately, because of the harsh conditions in which ULDs operate, containers and pallets do get damaged fairly regularly," Marino says.

Because a ULD is regarded as an aircraft part, any repair work that is done to a ULD fits under the Part 145 certifica-

"All repairs need to be carried out to a certain standard and certified. As an example, if a ULD requires a new part, these parts have part numbers, and we need to keep a record of which part numbers come off and which part number goes on," he says.

"Doing work on ULDs is a very skilled, and detailed piece of work."

Unilode operates 48 MRO facilities across the globe. Marino notes the staff that Unilode recruits are trained, certified and a valuable asset to the business.

"From a technology perspective, most of our readers and tags are installed by our MRO operators. So the technology and the deployment of that technology is done by our MRO team. They will install the tags into our assets. They will also install readers into various cargo warehouses that are on-airport as well as off-airport locations.

According to Seitz, DoKaSch's Opticooler requires specific

"In addition to closely timed maintenance rotations, every Opticooler is checked very thoroughly after every use without exception to ensure an extremely high level of safety for all transports, as the Opticooler most often transports lifesaving, temperature-sensitive pharmaceuticals or high valuable goods," he says.

As with all ULDs, Linnér points out ensuring a unit's airworthiness is a must.

"We have very strict processes and protocols to ensure that. We inspect all of our containers after and before every trip and officially release them as airworthy before the trip," he says.

"As compared to a standard ULD, since our ULDs are specifically for the pharma industry, they're a bit more specialized. We have electronic components, we have data measuring, etc. One positive aspect of this is we gather a lot of data," he continues. "When it comes to maintenance, we have started working with predictive analytics. We collect, all the time, all the data from all of our containers. Based on that massive pile of data, we can identify individual containers that start behaving a little bit different compared to what we define the parameters of normal behavior."

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#### **ULD Trends**

The ULD market is continuing to evolve, adapting to the needs

For example, at DoKaSch, officials note an overall trend toward online tracking systems to keep shippers informed of the real-time location and temperature of containers.

"This makes it easier to overwatch supply chains but it is not essential for the safety of the temperature-controlled goods in the Opticooler. Due to its active climate control systems and resilient power supply, the Opticooler is already able to maintain an extremely high level of safety against temperature deviations at all times," Seitz says.

Additionally, Seitz points to the Opticooler's efficient utili-

"In comparison to passive solutions, the freight space available in the aircraft is used more efficiently with the Opticooler.

Instead of two to four Euro pallets, five Euro pallets can be transported on one air cargo pallet position with the Opticooler, which is an increase of 25 percent," he says.

Sustainability is also factoring into cargo carrier's approach.

"In terms of how you can make that ULD a more valuable asset is the weight and the type of materials that have been used," Marino says. "We support aluminum ULDs mainly due to the durability and strength of aluminum, as well as the sustainability benefits as aluminum can be recycled."

Depending a customer's requirements, the sustainability element is going to be a huge factor moving forward, Marino points out.

He notes Unilode's pooling concept can help with sustainability efforts while keeping costs down.

"We've been able to demonstrate to many customers that we can reduce their ULD requirements from between 15-40 percent simply by using our pooled concept," he says. "We think the benefit in the future for airlines is twofold. From a cost perspective, they only pay for what they use, rather than having to buy more ULDs than they need. The second one is the environmental benefits - the sustainability. By getting better at utilization, you need less equipment.

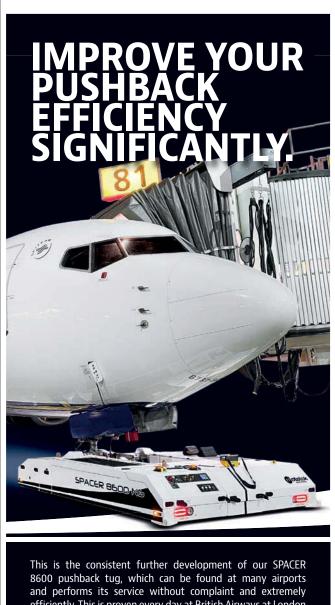
"Our customers don't have to worry about dispositioning as we look after the movement of empty ULDs."

Cost efficiency is another priority Envirotainer has identified with its customers.

"We introduced a new-for-the-pharma-industry ULD size: the RLP. That container can transport two US pallets or three Euro pallets," Linnér says, adding the RLP complements the company's existing larger RAP solution and the one-pallet RKM solution. "The RAP remains the most cost-effective solution, but we lacked something in between there to drive efficiency for the mid-sized shipments."

According to Linnér, the industry was able to achieve more efficient operations by working through the conditions posed by the pandemic and the scarce capacity.

"I think those efficiencies and how the industry learned to work with that will not disappear," he says. GSW



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New technology is delivering important benefits to ground handlers across key operational areas of on-time performance, asset management and cost containment.

#### BY SWEN FRANKEN

o support on-time performance, ground handlers must be able to effectively manage their cargo handling operations.

One aspect of these operations, which can be especially challenging, is the tracking of dollies, containers and unit load devices (ULDs). Being able to identify the dock location of a ULD, or determine a dolly's airport apron location, and whether it is loaded or unloaded, is critical to a ground handler's maintaining control over these resources.

A lack of control has serious consequences, negatively impacting workforce and equipment allocation, productivity, profitability and airlines' on-time performance. Fortunately, there are now advanced tracking solutions to mitigate these outcomes. These solutions combine telematics with intelligent dolly, container and ULD management to eliminate the unknowns and bring a real-time view of ground handling equipment's location and status.

Knowing how these technologies work together is imperative for all ground handlers looking to improve their overall performance and profitability.

#### The Tracking Solutions Market

According to the market research firm K Berg Insight, the number of active tracking devices for various cargo loading units reached 11.1 million worldwide

in 2021. Now growing at a compound annual growth rate (CAGR) of 24.4 percent, that number is expected to increase to 33.1 million in 2026. Currently, Berg's data estimates that the total market value for cargo container tracking solutions will reach £2.9 billion in 2026.

Driving these numbers are increasing airport construction and expansion projects and capitalization in airport information technology (IT) infrastructure. Additionally, increasing passenger demand is also prompting airports, airlines and ground handlers to implement robust IT solutions that enable them to better manage resources, while also supporting more positive passenger experiences.



Based on research conducted by The Insight Partners, the ground handling software market is experiencing growth worldwide, especially in developing nations, but also in various European countries such as the Nordic nations. The Asia-Pacific (APAC) region is recognized as the most dominant market for ground handling software, followed by Europe. Having some of the world's busiest airports, North America is also a growing market for more efficient ground handling solutions.

#### Supporting On-Time Performance in Dolly, Container and ULD Management

Ground handling equipment tracking solutions are essential for ground handlers grappling with problems that include not being able to quickly identify the location of ground handling equipment; staff losing productivity due to their inability to access location and status (i.e., loaded, unloaded, in good

condition, damaged, etc.); experiencing unnecessary empty runs; and purchasing more dollies, containers and ULDs than necessary due to inefficient management of these resources.

For ground handlers, being able to capture critical data providing full visibility of equipment location, status and movement at the time it is needed is vital to on-time performance. Thereafter, having the information needed to continually monitor key performance indicators such as quantity of dollies, containers and ULDs; and whether they are at the right locations and their utilization (cycle times, equipment damage, etc.) enables ground handlers to gain greater insight and information for optimal management of these resources.

It starts with the application of artificial intelligence- (AI-) driven optimization software and telematics to facilitate the quick identification of ground handling equipment in order to achieve optimized, real-time allocation and assignment of dollies, containers

and ULDs. By combining telematics with process-driven data that eliminates blind spots on the apron, ground handlers can gain a full-view and critical operational awareness of their equipment.

#### AI and Telematics **Working Together**

Applying an advanced AI/Telematics tracking solution, ground handlers can gain precise location and status information (i.e., whether a ULD is ready for pickup, the dock to which it was delivered, its loading time, if the ULD has been loaded to a dolly, and where the dolly and ULD is parked on the apron) in real-time.

Both the AI-driven software and the telematics technology operate together to deliver this critical information and operational awareness to ground handlers. Specifically, the optimization software serves to control the best allocation and assignment of the equipment to the right loading or

#### **Cover Story**

unloading task. The solution delivers a comprehensive view of the process pertaining to a ULD's position and destination location. This enables ground handlers to gain real-time access to relevant information regarding a specific ULD.

The telematics component of the tracking solution serves to identify a dolly's status; its location, its loaded/ unloaded status. With this information, ground handlers can achieve faster and more efficient feeding of dollies to the loading process.

With each GSE/dolly specifically identified, other key data can be captured, for example, its maintenance history. This enables ground handlers to then create an operating profile for each GSE/dolly and then use this profile to determine the best course of action for each piece of equipment. In the case of a dolly's maintenance schedule, instead of relying on a predetermined calendar date, the solution will indicate exactly when maintenance is required, thereby reducing

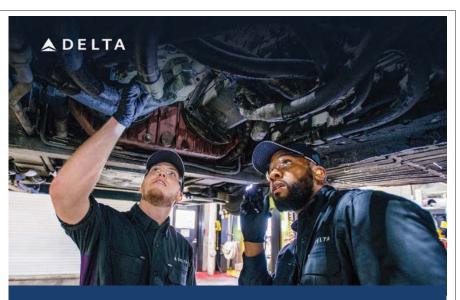
The tracking solution also plays a role in dolly fleet size containment. Armed with information on what number of its dollies are typically empty in parking positions, a ground handler can make an informed decision to reduce its fleet.

tional safety.

labor and related costs, and promoting increased productivity and opera-

An additional function of the telemetry data is its role in supporting optimized dispatching of equipment, and ability to facilitate a quick response to unexpected contingencies. When these events occur, the telematics component of the tracking solution can promptly calculate and recommend equipment alternatives in support of service level agreements (SLAs) and optimized decision-making.

Solar-powered, the tracking module does not require battery replacement or any maintenance in support of lower labor and equipment costs. Its operation involves data transmission through an energy-saving, low power wide area network (LPWAN) or alternatively, a 4G Cat M1 (GSM). An additional benefit stems from its decreased



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data transmission and application of cost-efficient Bluetooth low energy (BLE) tags on dollies. Should direct transmission fail, the network technology will continue its operation, able to locate dollies, including those placed in a building.

#### **Benefits Derived**

In summary, dolly, container and ULD tracking solutions are delivering important benefits to ground handlers across key operational areas of on-time performance, asset management and cost containment. By applying these solutions:

- Time consuming, error-prone manual processes can be eliminated.
- Worker productivity can be boosted with less time spent trying to locate equipment and/or determine its status.
- Workflows can be accelerated with optimized operational awareness and decision-making support.

- Contingencies can be managed more effectively.
- Equipment fleet sizes can be reduced.
- Labor and equipment costs can be contained.
- Adherence to customer SLAs can be achieved.
- On-time performance can be maximized.
- Ground handling costs can be contained.

Balancing operational needs with market pressures is not an easy task for ground handlers. A ground handler's missteps can have serious repercussions, causing a considerable ripple effect on flight schedules and overall airport operations.

In today's post-pandemic environment, ground handlers are under increased pressure to maximize their use of labor and equipment and operate in the most cost-effective manner. It boils down to this: Having accurate, detailed real-time information enables ground handling equipment to be better utilized and better planned for in terms of required fleet sizes, maintenance schedules and required labor.

With on-time performance and service quality the primary goals, having the optimum tracking solution can support desired time slots along with the most informed and quickest responses to any disruption that must be managed. GSW

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he International Air Transport Association (IATA) develops industry standards for ground operations, and with the IATA Airport Handling Manual (AHM) and **IATA Ground Operations Manual** (IGOM), the organization has created "an encyclopedia" for the industry, which helps promote and drive global implementation of standards. These standards include policies and procedures covering passenger, baggage, ramp, cargo and mail handling, as well as technical specifications for GSE, automation on the ramp, minimum standards for ground ops frontline personnel training and more.

Irrespective of the airline or ground handler, or their location, standards ensure a global baseline and that the same, or similar, processes are taking place.

IATA's work to set standards is especially important because ground operations are not globally regulated, and within the industry, there are many complexities.

Iva Pluhackova, IATA head of operations and standards, gives examples of some of the complexities. Airlines, which are responsible for ground ops, subcontract 80 percent or more of handling to third-party ground handling service providers. Airlines are responsible for providing instruction on how to handle an aircraft and provide oversight of the ground handlers.

"It sounds clear and easy," she says. But it's not. For example, if a ground handler provides service to 200 airlines, there would be 200 different manuals with specific airline procedures.

"If you take into account that those manuals are updated on a weekly or monthly basis, it becomes impossible to follow all updates, brief and train relevant personnel," she says. It also becomes difficult to ensure every flight, which could be more than 200 a day, are handled according to a specific airline's procedures, she adds.

Conversely, an airline that flies on average two times a day to 100 destinations might have 200 different handlers and 400 flights to monitor. The airlines need to ensure that all handlers receive updated manuals, acknowledge receipt of the manuals and implement the updates.

"So it is complex, but it does not have to be, nor should it be," Pluhackova says.

Airlines are operating similar types of aircraft, flying to the same destinations and using the same ground handlers. Regardless of who owns or operates an aircraft, or where it is, it should be handled the same way, she says. Similarly, ground handlers should receive similar training, regardless of where or for whom they work.

The same applies to GSE technical specifications, she says. The GSE needs to fit various aircraft, meet certain technical and safety parameters, and where possible, should be operated in a similar fashion irrespective of the manufacturer or equipment type.

## Who Benefits from These Standards?

When standards are in place, the entire industry benefits, she says, "by ensuring



that we speak the same language globally and we have the same baseline globally."

Pluhackova says the use of common industry standardization will promote effective utilization of similar skillsets among different carriers; ease the return to service; minimize safety and security events; and provide effective and cheaper oversight of safe operations.

"Additionally, IATA standards do not only ensure that we have the same standards for the operations, training and contracts, equipment, etc. but we have also the same standards used for the auditing," she says.

The IATA Safety Audit for Ground Operations (ISAGO) is designed to verify the implementation of AHM and IGOM within companies' operations.

#### Adopting IATA Standards

"IATA is not a regulator therefore our standards are not mandatory per say," Pluhackova says. "Nevertheless, as an airline association, we develop standards, rules and guidelines for our members.

"The IATA resolutions developed under the traffic conferences are the highest level of our standards and are binding to our members."

The recommended practices (RP) are the second level, and members can choose to adopt them on voluntary basis. The AHM, IGOM and Baggage Reference Manual (BRM) are recommended practices developed under the Passenger Service Conference (PSC RP).

"Our members also contractually require that their providers follow the ground operations standards via Standard Ground Handling Agreement (SGHA)," she adds.

In addition, IATA produces various guidance, positions papers and analytical reports for industry knowledge.

The AHM and IGOM are based on industry knowledge and current best industry practices.

Pluhackova describes their implementation as organic and says they are adopted for their value. Based on an annual IATA publications survey, 90 percent of AHM/IGOM users are satisfied with the content and see the manuals as a primary source of information, which they use to create company procedures.

"It helps them to improve, standardize and validate their policies and procedures as well as ensure that the airlines and their providers speak the same language," she says.

Survey respondents also found the publications to be a valuable source for training and ISAGO accreditation.

"We are also advocating with regulators to recognize AHM [and] IGOM and consider them as an acceptable means of compliance in the jurisdiction where the regulation for ground ops exists such as EASA," she says.

#### **Working Groups**

IATA standards are developed under the Passenger Standard Conference (PSC) and Travel Standard Board (TSB), including smaller groups like the Ground Ops Automation and Digitalization (GAD), Ground Ops Standards (GOS), Baggage Working

Group (BWG) and Baggage Steering Group (BSG).

"We have very well-defined governance structure for ground operations within IATA," Pluhackova says.

Working groups have a delegated responsibility to approve AHM and IGOM changes in their area of expertise.

There are also other groups and subject matter experts contributing to the development of the AHM, such as the ULD Board, Security Working Group and Cargo Handling Oversight Committee.

"Ground ops groups consist of a pool of experts in various subject matters," Pluhackova says. "Groups are organized into sub-groups based on the operational area and standards, which need to be developed. The expertise required is driven by the IATA ground operations priorities and objectives for the group tenure. We hold monthly or more frequent calls, at least one face-to-face meeting for every sub-group. The group participants are developing standards directly by themselves, or IATA external or internal experts prepare drafts, which the group reviews and amends to the final version."

The GOS plays a key role in the AHM/ IGOM development as they oversee four AHM chapters and the majority of the IGOM. For 2023 there are four sub-groups within the GOS:

- Organization and Safety
- Training
- Operations
- Contracts

"This groups include airlines representatives, ground handling providers and industry partners," Pluhackova says. "Each participant has a deep knowledge and experiences in the ground ops but most importantly, incredible enthusiasm and passion for our industry. I am truly honored to be the secretary of this group and together with my standard team, we will never stop to be amazed by amount of work, ideas and improvements our members bring to the table. It keeps us motivated.

"Some of them are participating in our groups for years, and we have developed friendship over those years," she continues. "Our members provide a lot of

#### **Ground Service Providers**



Within Chapter 9 of the IATA Airport **Handling Manual** (AHM), are GSE specifications. Complementing other design standards by focusing more on performance and requirement criteria, these standards are widely used in the **GSE** procurement process and set the minimum requirements for aspects such as safety and damage prevention systems for a wide range of GSE.

their time and work and in return, they expect full support from our team, and we cannot disappoint them."

The GAD has established four sub-groups:

- Load Control and Aircraft Messages
- GSE (autonomous, green, management)
- Digital Ramp
- Delay Codes

Similar to the GOS, the GAD consists of airlines, ground handlers and manufacturer subject matter experts. The GAD takes care of the updates of the aircraft messages and load control in the AHM and IGOM. Baggage standards are developed by the BWG and the BSG. Industry experts with subject matter knowledge on the different baggage operational areas work toward developing common standards and best practices for an efficient and cost-effective baggage handling process. The BSG plays a more strategic role in defining the work plan and priorities of the baggage working group, while the BWG ensures the delivery of the actual work plans by its various sub working groups reporting to it.

#### The Process for **Creating Standards**

The objectives for creating IATA standards come from multiple parties.

The ground ops objectives come from various sources, while IATA's strategic objectives come from its Board of Governors.

"Strategic objectives for ground ops are shaped by the Ground Operations Group (GOG), which reports to the Operations Advisory Council and provides to IATA management where we should focus via IATA initiatives, standards or advocacy," Pluhackova says. "GOS, GAD, BWG, BSG are providing input to the standards development, we are doing an analysis of the data available in the IATA Accident Database (IDX) for the most frequent and serious aircraft damages, loading errors and injuries.

"We have also started to have some data in the IGOM portal, specifically the IGOM provisions, where is the most airlines variations, and we will analyze them and prepare the plan how to reduce them," she continues, "And last but not least, and of the most valuable feedback is directly for our manuals' users."

Once input from ground handling-focused working groups is gathered, it factors into IATA's process for developing standards.

"Objectives, input, all submissions are reviewed by IATA secretaries, who create the work plan," Pluhackova says. "This is then reviewed and agreed by the ground ops groups, and groups work on the standards development or updates during the year. The expert groups work on the amendments, proposed changes are

open to the various IATA groups based on the topic, comments are reviewed and addressed if relevant."

The final draft is then voted as per IATA governance, and finalized updates are then handed in for publication.

"It is fairly cumbersome process as we produce four manuals in printed and digital versions, including French and Spanish versions for the IGOM," Pluhackova says, noting production of the manuals take on average 3 months each.

The working groups have two-year mandates. IATA called for nominations in February for tenure 2023-2025, and groups started work in March. GOS/GAD groups are open to IATA members and IATA ground handling partners and strategic partners for the ground ops area. BSG/BWG is open to IATA members and strategic partners for baggage area.

"We also cooperate with the industry organizations such as Society of Automotive Engineers (SAE), Airport Council International (ACI), Airport Services Association (ASA), ISO and others," Pluhackova adds.

"As we start our groups' work, there might be need for a specific interest and we will approach our industry to fill the gaps. We always need more airlines to participate in Ground Ops Automation and Digitalization. We want to know what our members are doing in these areas." GSW

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he International Air Cargo
Association (TIACA) has
launched the BlueSky program as a sustainability assessment,
validation and verification scheme
to enable companies to track their
sustainability progress, benchmark
against peers and accelerate the
industry's transformation.

According to Glyn Hughes, director general of TIACA, sustainability – as defined by the 17 United Nations Sustainable Development Goals – encompasses a whole series of topics which center around people, the planet and the need for enhanced global prosperity.

"As individuals and as companies, we should all be doing what we can to make a positive impact in these areas. We owe it to the planet and to the future generations," he affirms. "TIACA's BlueSky program, launched in

Q4 2022, is the industry's first comprehensive evidenced-based independent assessment program designed to provide each organization with a personalized dashboard highlighting where they are in terms of sustainability actions."

Martin Drew, senior vice president of global sales and cargo at Etihad Airways, points out that the BlueSky program aims to enhance sustainability in air cargo by providing a common vision, transparency and a mechanism to demonstrate how businesses can grow responsibly as well as gain an improved image of the air cargo industry.

"We became the first Middle Eastern airline to join TIACA's BlueSky sustainability verification program in 2022 as it complemented the initiatives the Etihad leadership team has been focusing on," he says. "The main requirements discussed on our initial call with TIACA

were to be transparent in responding to a set of questions, which would then be followed by a thorough assessment by the team to understand where we stand against peers in the industry and also how we could contribute to shaping the BlueSky program."

Swissport is also a launching partner of the BlueSky program.

"We really wanted to play our part in the TIACA initiative from the start and are proud to be one of the pioneers," says Nadia Kaddouri, chief strategy and sustainability officer at Swissport.

"As the global market leader in airport ground services and air cargo services, we are committed to making a more sustainable aviation future a reality," she adds.

Swissport has relied on sustainable technologies in its air cargo business, and it invests in sustainable business



solutions. For example, in Frankfurt and Vienna, the company uses solar power generated by photovoltaic systems on the roofs of its new air cargo centers. Also, in Vienna, an electrically powered truck has been in use since May 2022, transporting freight shipments between the Swissport cargo center in Fischamend and Vienna airport with zero emissions, the company affirms.

#### **Program Requirements**

The journey to sustainable transformation is different for every company. BlueSky is not a pass or fail program, but rather an assessment program showing where a company is compared to industry best practices, points out Hughes.

"A dashboard will help organizations understand what they are doing well and will highlight where they perhaps

need to do more. The assessment covers decarbonization, waste management, biodiversity protection, local economy and community support, improvement of lives and well-being, efficiencies and profitability, how a company attracts, retains and develops employees and how they build and nurture partnerships," he says. "The assessment is based on evidence submitted, provides a comprehensive analysis, and is confidential to the participants for them to use as they identify best."

#### How the Need for the Program Developed

The air cargo sector has historically been considered less sustainable than other methods of transportation. Over the past few years, the sector has been making great strides in developing more sustainable solutions and is investing in fleet modernization, fuel efficiency, sustainable aviation fuel (SAF) and carbon compensation initiatives, observes Drew.

"The BlueSky program was developed in response to the need to find a common platform that our industry can benchmark against. The platform presented Etihad Cargo, and fellow peers in the industry, with a tool to measure the effectiveness of its initiatives combined with the environmental impact of its operations, helping us to identify areas for improvement," he says. "All that was required to get the process started was ensuring the required data for input into the tool was available and that adequate time and resources were allocated to complete the desktop verification process."

TIACA conducts an annual industry sustainability survey, and it was increasingly receiving feedback about the need for an independent program to help companies start their sustainability journey and to measure where they are, affirms Hughes.

"This then gave rise to the development of the Blue Sky program as a support tool for the entire industry as questions are tailored to whichever sector of the industry the participant represents," he says. "We launched in

October 2022 with 10 initial participants and since the launch several more have signed up with over 40 others assessing their participation."

Sustainability can and will be a game changer in the air cargo industry, according to Drew.

"If we look at the figures, it is staggering that the world's aviation sector is currently responsible for 2.5 to 3 percent of all human-induced carbon dioxide emissions worldwide, and this could increase to up to 22 percent of global emissions by 2050," he says. "As other sectors decarbonize more quickly, it is critical for the global air cargo community to take action now to invest in more sustainable solutions."

The impact of initiatives and product enhancements can be measured and tracked within the BlueSky program, in combination with other sustainability data, Drew points out.

"The program is open to participants across the entire air cargo sector, including airlines and carriers, airports, ground handlers and general sales and service agents," he says.

#### How the Program Works

The BlueSky program has been launched in phases, and Etihad Cargo's initial participation involved a self-assessment using assessment guidelines provided by TIACA.

"This first tier provided a way to begin the verification and validation process through awareness and self-assessment," says Drew. "The second tier of the BlueSky program leads into the desktop verification, beginning with an online assessment and verification of the documents that have been provided. A performance score will be given across each area and will be visible via the company's dashboard. In this evidence-based desktop verification process, what is assessed is progress against eight critical sustainability criteria."

Upon completion of the tailored assessment process, a carrier will receive a personalized dashboard that displays the carrier's performance against the criteria, explains Drew.

#### **International**



"The assessment process has enabled us to more effectively measure our performance and track our sustainability progress as we continue on our sustainability journey, which will benefit

our customers and the wider air cargo industry," he says.

The third and final tier includes further desktop verification and an onsite independent audit, explains Drew.

"In addition to the performance score for each area given in the second tier, an enhanced company dashboard also gives access to excellence badges and a detailed report with recommendations on how participants can become more sustainable," he affirms. "The first tier of the program is available to all, and assessment guidelines are provided upon request or can be downloaded via the program website. The desktop verification and onsite audit tiers both offer a two-year renewable assessment."

BlueSky assesses where a company currently is on its journey to a more sustainable future so there is no minimum requirement to commence the assessment, affirms Hughes.

"The key is to answer the questionnaire and provide as much fact-based evidence to support the positions. The program also provides guidance as to where an activity may be being



performed but there is not sufficient evidence or inclusion in procedures to ensure the activity continues consistently," he says. "We would recommend all organizations download the free assessment guidelines which then

provide more information as to the areas covered by the assessment."

TIACA is also holding community-based information sessions to present further guidance to the industry.

"As to renewal, we would

recommend that each organization allow a reasonable time between assessments, so they make tangible strides forward on the areas highlighted," Hughes says. "We suggest every two years, although some companies have indicated they want to make significant improvements immediately so will be pursuing annual reviews." GSW



#### ABOUT THE AUTHOR

#### DR. MARIO PIEROBON Dr. Mario Pierobon provides solutions in the areas of documentation,

training and consulting to organizations operating in safety-sensitive industries. He has conducted a doctoral research project

investigating aircraft ground handling safety. He may be reached at mariopierobon@az-allin-one.com.





#### ilwaukee Mitchell International Airport (MKE) recently digitized its airside operations using a cloud-based software called "GoApron."

Before GoApron was in place at MKE, Ryan Collins, MKE director of operations and maintenance, described the need for automation of gate management as "painful." The process of assigning gates and aircraft parking spots involved manual scheduling, primarily through phone calls and emails. To create a report for billing, he says, "We had to go between three and four different places."

That changed in June 2022, when MKE deployed GoApron.

"We took a laborious process and turned it into something that is very streamlined," Collins says.

"What we mainly do is we help airports transition from manual, paper-based systems, legacy solutions, phone calls, email and spreadsheets to a streamlined gate innovation, aircraft parking and revenue management solution," GoApron Inc. CEO Shadrach Vaughn says.

Real-time data, available through the software, helps increase situational awareness by showing where airplanes are parked and through gate forecasting, allows advanced planning.

"Another main piece is really providing the tenants, the airlines and the ground handlers an effective way to communicate with airport ops," Vaughn adds.

"GoApron has helped the MKE team gain better clarity and tracking of aircraft movement and parking," MKE Airport Director Brian Dranzik says. "This customized technology gives us real-time business intelligence and increased accuracy while reducing staff workload. GoApron has provided us with a valuable resource that has improved coordination with our airline and ground handling partners."

To understand how MKE operates, GoApron worked with the airport ops team to ensure a successful roll out.

"It's very much a partnership because every airport can be a little different in how their apron is situated and how they want their airlines to work with the airport," says Vaughn, noting airports often have unique and complex rate sheets that need to be factored in for accuracy.

The engagement of stakeholders was "fantastic," Collins says, "because 'the sell' to them was you only have to go to one spot. You get instant (reservation) approvals (if a gate or spot is available)."

Virtual training was held for anyone who might request parking or anyone

who was involved in the process. Three sessions were held, but Vaughn says only one was required.

The platform itself is "very collaborative," Vaughn says. "The airports use it, but heavily the airlines, the ground handlers use it, as well, to work together. Before, the process was very siloed. The stakeholders were working many different ways to try to communicate and get data across, then often a gate agent may not even know what airline is using what gate. And, if it's a common use gate, that's obviously an issue because that's a gate they're getting paid per use."

Since using GoApron, Collins says the difference has been night and day.

"We streamlined the process, which means that our workflows are more efficient," he says, adding that's especially important when there's a worker shortage.

Collins says one of the big selling points for GoApron was preventing lost revenue or the potential for lost revenue. Previously, if an aircraft occupied a gate and that data was not manually recorded, revenue could not be collected.

"When we automate this process, it allows us and affords us the ability to capture every operation that we have," Collins says. "I can't validate that with



actual numbers at this point, but I can tell you leakage is real and this has given us the opportunity to have more real-time data and real-time information, which leads to potential increases in revenue."

Less than a year in, Collins says MKE hasn't yet deployed the robust financial reporting platform in earnest.

"We do intend to roll that out so that we've got a high level of automation with our finance department so that billing is automated," he says. "We do have to generate some internal reports, but we are working toward a higher level of automation with all of the – kind of – data repositories that we have on hand."

The transition to GoApron was seamless.

"We stopped taking phone calls and emails one day. We broadcast to the airport community that we were going live on the following day and there were no hiccups. Local changes can be done

GoApron helps airports maximize gate and space usage by providing airline partners gates and spots based on preferential use, aircraft size, operational rules and real-time data.

without kind of a backend technological intervention," Collins says.

"It sounds like a sales pitch, but it's fully adaptable to really what your mission is, and I thought that was one of the most unique things. It's not a one-size-fits-all-type application. It's all tailored to you and your facility."

If MKE needs to change something, Collins says it is easy to do.

"It's not another contract or development contract," he says.

#### GoApron Development

GoApron went live with its first airport in June 2020. It started as a reservation system for airlines and ground handlers looking to efficiently request gates and remote aircraft parking spots. As soon as the request was made, the airport received a notification and could approve via email or from the online dashboard.

Based on airport feedback, Vaughn says the reservation system grew to include real-time data.

"We connect arrivals and departures via tail number so we can show the airport and airlines how much time they're actually spending at the gate," he says, adding this data can then be used for safety, visibility, situational awareness and billing.

"It's very important to know what's happening that day or what could be happening three months down the road," he says, noting that's especially important when a new service or route is being added.

Providing a collaborative central system for all stakeholders to communicate, he says keeps folks in the know from a safety perspective and gives the ops team the ability to focus on other tasks instead of taking information over the phone and entering it into a spreadsheet.

"Especially for these crucial roles at the airport that can be very hands-on, they have to be very aware and alert," Vaughn says. "The more information and data they know, the more manual tasks that are automated, the more everyone's life gets easier, safer and ultimately the airport will earn what they're supposed to earn."

From an airline passenger perspective, the benefit is a gate waiting for them when they arrive.

"We take a very collaborative approach with our airport partners, working closely to solicit feedback which helps drive platform innovation," Vaughn says. **GSW** 



#### **Product Profile**

## **Electric Tractors** for Business, Regional and Military Aircraft

The ETT-8X and ETT-12X are the most sustainable vehicles in the Eagle fleet.

BY REBECCA KANABLE



he next generation of Eagle Tugs has landed. The new ETT-X line of tractors from Eagle Tugs, a Tronair Company, is 100 percent electric and all-wheeldrive. Eagle Tugs has been supplying the aviation market with tugs since 1969, and the ETT-X family continues that history.

The ETT-X is available in two configurations. The ETT-8X was designed for an 8,000-pound drawbar pull and a towing capacity of 115,000 lbs. The ETT-12X is capable of a 12,000-pound drawbar pull and a towing capacity of 171,000 lbs. This translates to over 1,000 aircraft platforms making the ETT-X a green solution for a wide variety of aviation customers.

The next generation design was a collaboration between Tronair's customers and Eagle's experienced engineers.

"Valuable operator feedback helped the Eagle team shape our design to be safe, intuitive, robust and an enjoyable driving experience," says Charles DeRaedt, Tronair's vehicle product manager.

"With the tightest turning radius (135") and lowest profile available, the new ETT-8X is the most compact tug on the ramp. In addition to a compact design and high-power towing capacity, our customers sought a sustainable solution to reduce their carbon footprint. With the aviation industry marching to the goal of net-zero carbon emissions, we knew a sustainable vehicle with a lithium-ion battery option was the perfect solution."

Since the tug is all-electric, no

emissions are generated by the vehicle, which means it's healthier for ground crews.

"Traditional exhaust exits are at the rear of the vehicle, right where the ground crew is located during towing operations," DeRaedt says. "Additionally, unlike their gas and diesel counterparts, battery-powered vehicles require no oil or filter changes - or associated costs. Without an internal combustion engine, the noise pollution is also reduced."

Electric GSE (eGSE) is especially suited for aircraft towing and taxiing because aircraft towing does not usually require a vehicle to go a long distance. Most towing and pushback operations are only a few hundred feet. Based on vehicle usage and the time between aircraft movements, operators can use a vehicle for an entire shift or longer. With opportunity charging and the vehicle and charger at the same location, a vehicle can be charged during downtime.

"This can substantially increase the usage before the vehicle requires a full recharge," DeRaedt says.

An optional "Smart Charge" battery and charger system allows the battery to be charged to maximize efficiency, with no reduction in battery lifecycle.

"Traditional chargers used on your car battery just pump energy into the battery. With a smart charger, the charger monitors multiple parameters of the battery and charges at the most efficient speed while maintaining battery integrity," DeRaedt explains. "With smart chargers, you can maximize your time at the charging station."

According to DeRaedt, the most commonly asked questions are about lithium batteries and lead time for vehicles.

"We do our best to educate customers on the differences in battery options and the benefits of lithium," DeRaedt says, adding that the ETTs can be equipped with lead acid or Li-ion batteries.

For ease of maintaining lead acid batteries, Eagle offers a single port and fill attachment to make battery maintenance more efficient.

With technology advancements, lithium batteries offer several advantages.

"Lithium batteries improve life expectancy while increasing safety," he continues. "They can charge faster and more efficiently without off-gassing like lead acid. They do not require watering or maintenance aside from charging. An internal module controls discharge and charging to maintain the batteries, keeping them in optimum condition. The battery's efficiency allows it to charge faster and gain more energy from regenerative braking."

Regenerative brakes are key for extending battery life. Unlike traditional diesel tugs, an electric vehicle stops gradually when you take your foot off the accelerator. During this operation, the vehicle converts the potential energy of the vehicle back into battery power.

#### **Safety Features**

New safety features are included in both ETT models.

"One of the features Eagle has been known for is their dedication to safety by maintaining a sight tunnel throughout

design iterations," DeRaedt says. "The ETT-8X is no exception. We have added a window in the front of the operator compartment to allow visibility of the front hitch during towing operations at all times. We maintained a valley down the vehicle's center in the rear to allow an unobstructed view of the rear hitch. The valley is painted black to reduce contrast and enhance the view of the hitch."

In addition to the front and rear sight tunnels, the customer-requested optional backup camera provides improved backup visibility.

Front and rear inching switches are used to carefully move the vehicle forward or backward.

"This is critical during towbar connection to get the small adjustments. It also provides a safety feature of allowing complete control and visibility of the connecting operation. Once the switch is released, the vehicle stops completely," he says.

Using these features, the operator can position the tug to capture the towbar smoothly, efficiently and safely, DeRaedt adds.

In the event of an emergency, front and rear emergency stop switches give line workers near the vehicle the ability to quickly and safely stop and shut down the vehicle.

Other built-in safety features include a seat kill switch, horn, backup alarm, seat belts and parking brake.

#### **Tractor Design**

Eagle went with a low-profile design to keep the vehicle's footprint small and its height low.

"This allows for better space management in hangars, operator visibility and clearance around aircraft," DeRaedt says.

Keeping with Eagle's heritage, the vehicle body incorporates the traditional white color. A two-color paint scheme was used to modernize the look: a black body with white panels and doors. Eagle has historically been known for "boxier" designs with a single mid-operator compartment. DeRaedt says Eagle added a slant back design to break up the body lines and switched to a front

operator compartment.

Utilizing lessons learned from the automotive industry, Eagle optimized comfort for seating height, step height, steering wheel placement and other compartment features.

"The vehicle was designed to accommodate a wide spectrum of operators comfortably. With a tilting steering wheel and adjustable seat, operators can easily customize the vehicle to meet their individual comfort," DeRaedt says.

The three-person compartment allows the transportation of two passengers, and a wing walker wand holder is integrated into the dash.

Underneath the dash, 12V access was included to quickly install a flight line operation radio. Also included is a USB port to charge tablets and other devices.

Options include a front and rear e-hitch, and multiple industry standard hitches are available. A towbar head holder is available to store the towbar heads on the rear of the vehicle.

Two baskets can be added on the vehicle's driver side rear to store chocks. And to protect the rear doors, rubber decking is available.

"We often see operators throw chocks, cones, toolboxes and other equipment on these surfaces. This provides a way to protect these higher risk areas from damage," DeRaedt says.

For operators in cold weather conditions, a heated cab is also available as an option.

When selecting an electric towbar tug, DeRaedt says consider the drawbar pull and weight of the aircraft that needs to be towed. Also, he says to consider which battery option fits best and to consider what charging capabilities are on site. GSW



## **Product Hangar**



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This Bob Tail Truck is built on a new F-350 chassis and offers a gas engine. Ideal for towing GSE long distances, the truck has a capacity of 55,000 or 75,000 pounds, LED and beacon lights, dual back-up cameras, speed limiter and many more options.

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#### **B950 HEAVY-DUTY TOW TRACTOR** .IRT

B950 is JBT's 31,750kg to 45,360kg GVW tow/pushback tractor capable of servicing RJs up to B777/B787. The B950 drives like a car with automatic transmission, front-axle leaf springs, a tight turning radius and available 4-wheel steer and 4-wheel drive options. The heavy-duty pushback tractor has ground level access to maintenance and service points.

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to the chassis via suspension system for smooth riding on uneven surfaces, and 2/3 levels "E" type tow hitches with safety latch are provided in front and at rear.

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#### **Product Hangar**

#### **TE.208 BAGGAGE/TOW TRACTOR**

**CHARLATTE OF AMERICA** 

The TE.208 baggage/tow tractor is a battery-powered, four-wheel towing vehicle with enough power to provide a superior alternative to a full-size baggage tractor for those operations that don't require one. The unit is a compact. highly maneuverable vehicle, which allows easy access to the operators compartment with good front and rear visibility. A low

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#### **TPX-100-E**

The TLD TPX-100-E is a fully electric towbarless tractor designed for the pushback of most commuters, and single-aisle



aircraft up to 100 tons. The TPX can now be fitted with a remote control feature, allowing single-person operation over the entire pushback event to offer a faster, safer, more environmentally friendly experience. The ergonomic cabin also offers protection from the elements to deliver flexibility for the operator.

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#### **TIGER LI-ION** WAEV INC.

Tiger Li-ion tow tractors incorporate new electrification technology that outperforms internal combustion and other electric vehicles with significantly lower total cost of ownership, zero emissions, industry-first safety features and limited



maintenance. These tractors maintain uncompromised range, towing and hauling and offer familiar operator user controls for seamless GSE adoption. Tiger Li-ion tow tractors are built on industry-proven steel chassis, with up to 60,000 pounds towing capacity, hitch options, color choices and durability features.

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#### 5,000LB MDP - LITHIUM **BAGGAGE TRACTOR AVRO GSE**

Avro baggage tractors feature hydraulic steering, front and rear towing couplers with cab control, complete cab enclosure including windshield and wiper kit, Curtis controller with self-diagnosis functionality,

avro

vacuum assist hydraulic brakes, complete telematics for remote diagnostics and monitoring, along with the (Avro Care) managed maintenance program.

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#### **CHALLENGER 150E** TREPEL AIRPORT EQUIPMENT GMBH

Trepel's electric conventional aircraft tractor allows users to handle B737 and A320 fleets while also pushing out the B767-200/300 at maximum ramp weight. The hydro-pneu-

matic front axle suspension



provides driving comfort for the operator. Options include open drivers stand with side safety bars and solid tires.

#### **Advertising Index**



#### **MODEL HTSB TRACTOR** HARLAN GLOBAL MANUFACTURING, LLC

The Harlan Model HTSB is available with the latest model US/Euro Emission-compliant engines. This compact, shorter wheelbase, low-profile design is robust with excellent all-around visibility. Designed for cargo and baggage applications, this unit can also be utilized for pushback of small aircraft (with the front hitch option package). Some options include complete cab assembly, heat/defrost, mirrors, beacons, variety of hitches and suspension-style seats.

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#### **COMET 4 FC** MULAG FAHRZEUGWERK GMBH U. CO. KG

This airport towing tractor offers a hydrogen fuel cell drive and up to 30t trailing load (drawbar pull 20 kN), 30 kW axle integrated AC motor with 15 kW continuous power and a driving speed up to 18 mph. Ideally suited for baggage tasks and cargo tasks, the tractor features a zero-emission powertrain to implement the increased environmental requirements for GSE while still having high availability and short refueling times.

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## **Spotlight on: Pete Buffkin**

BY JOSH SMITH

Ground Support Worldwide: What attracted you to a career in the ground support industry?

Pete Buffkin: I basically came across the industry by accident. I found an engineering job in it early in my career.

**GSW:** What has kept you engaged in the industry?

**PB:** It is a relatively small industry with lots of great people that care about what they do. And you feel like you can make a difference.

GSW: What's the best advice you've been given while working in this field?

PB: Be honest and truthful.

GSW: How have you seen the ground support industry change the most during your career?

**PB:** Early in my career, the major customers all had their technical expert for refueling equipment so they had very detailed specifications. Today more customers tell us what they are trying to accomplish with the equipment and we can utilize our expertise to make the best product to do what they want.

**GSW:** Has this change been to the benefit or detriment of the industry?

**PB:** This has absolutely made the industry better. Better products are made when we focus on function.

**GSW:** What's the next big thing coming to the ground support industry?

**PB:** It is already underway, but electrification of the fleet is the big thing. It is just getting started in the refueler segment and there will be a learning curve.

**GSW:** What type of an impact will it make?

**PB:** It will help airlines and airports meet their green initiatives and it should have a positive impact on our environment.

GSW: What would you say to encourage someone to join the ground support industry?

**PB:** I would say it is a great career to make a difference, and with hard work and dedication, there are many opportunities. GSW



Job Title: Aviation Sales Manager Company: Westmor Industries

**Years of Experience in Ground Support:** 

Approximately 30

Location: Columbus, MN

Years with Current Company: 10 **Previous Employers in the Industry:** 

Garsite and Eaton/Carter Ground **Fueling** 

Industry committees, associations, working groups served on:

SAE AE-5C Aviation Ground Fueling Systems Committee, Chairman and Secretary

NFPA 407 Committee Member



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