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- Fueling Aviation in Antarctica
- eGSE Plans Expand in Thailand
- Cargo Needs Drive Leipzig/Halle Airport Development
- Are Big Changes on the Horizon in Japan?

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There are numerous strategies for ground handling companies to consider when establishing effective safety management and training programs.

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The Sky's the Limit in Istanbul After the Great Move Airport officials and ground handlers predict increased traffic and

further growth upon moving into the new Turkish airport.

### **Fueling Aviation in Antarctica**

While ground support personnel around the world face harsh weather conditions, few compare to the atmosphere fuel handlers endure on the southernmost continent.

### eGSE Plans Expand in Thailand

Panus/Bliss-Fox is growing the electric vehicle industry for the GSE market.

- Are Big Changes on the Horizon in Japan? Additional players are competing with local entities for a share of the country's growing ground handling market.
- The Next Step for Accurate Baggage Handling

RFID capabilities allow bags to be identified and tracked without the need for human intervention.

**Cargo Needs Drive Leipzig/Halle Airport Development** 

A new cargo center is planned to upgrade the airport's infrastructure and improve distribution facilities.

How to Support Safe Working Practices in Aviation The nonlinear shape of aircraft and the intricate maintenance tasks that must be done without causing any damage to the surface or structure of the aircraft can create difficult working environments that could pose additional risks.

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Dubbed the "Mongoose," Wollard International's TC-999 Belt Loader ensures ground crews can load baggage efficiently and injury free.

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Industry Expert Column – GSE **Editor's Note** 

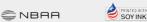








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# TOP NEWS

# Envoy Passenger Services Agents Ratify CWA Agreement

Envoy Air Inc., the largest wholly owned regional airline subsidiary of American Airlines Group (AAG), announced its customer service agents represented by the Communications Workers of America (CWA) ratified their first collective bargaining agreement, that will remain in effect through February 2026.

envoy

The six-and-a-half year agreement raises wages, enhances work rules, improves benefits and offers job security for nearly 5,000 Envoy passenger service agents in approximately 100 cities across the United States. The agreement also includes a ratification and retention bonus based on each agent's years of service in recognition of the time spent in negotiations.

"I would like to express our appreciation to both negotiating teams and mediator Mike Tosi of the National Mediation Board, for their commitment to resolve the outstanding issues and reach this agreement for our agents," said Envoy's president and CEO, Pedro Fábregas. "There has been much effort and discussion to satisfy all parties and establish a solid framework for a more collaborative working relationship for years to come."



Cat Air Service, a fixed gase operator (FBO) located at Zurich Airport, announced it has been granted second stage registration from IS–BAH (International Standard for Business Aircraft Handling).

"This achievement not only demonstrates our high level of ground service at our facility but also our commitment to maintaining the highest safety standards for our customers and employees," general manager, Roger Büchner said.

The IS–BAH certificate establishes criteria for ground handling processes to ensure aircraft and passengers comply with ground safety and security standards.

# Menzies Acquires GTO Global Logistics Inc.

Menzies Aviation, the global aviation logistics specialist, has acquired GTO Global Logistics Inc, a Canadian logistics services provider based in Vancouver. GTO, which provides airfreight, ocean LCL, domestic/cross border road services, storage and customs brokerage at airports and ports in Canada, will integrate into the Air Menzies International (AMI) division of the business.

As part of the deal, Menzies will acquire a customs bonded warehouse in Vancouver. This will be the first Air Menzies International office in Canada, as the business looks to expand its presence across the country. GTO's owner Darrell Keen, who founded the business 15 years ago, will become head of AMI's Canadian operations, with all other employees also joining AMI's operations.



"We believe that GTO is the perfect match for AMI in Canada as they understand our needs, provide excellent service and have a proven track record of success in the region," Jonathan Clark, CEO, AMI said. "They have been a partner of ours for several years and already have strong relationships with airlines and shipping lines which will help grow the AMI business in Canada."

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# Upcoming Events

Oct. 1-2 NATA Ground Handling Safety Symposium Ashburn, Va.

Oct. 8-11 inter airport Europe Munich. Germany

# Oct. 15-17

MRO Europe London, UK

Oct. 15-17

IATA Global Airport & Passenger Symposium Warsaw, Poland

# Oct. 22-24

NBAA-BACE Las Vegas, NV

# Nov. 11-13

ACC Annual Conference & Expo Palm Springs, CA

# Nov. 14-15

IATA Sustainable Aviation Fuel Symposium New Orleans, LA

Nov. 19-21 TIACA Executive Summit 2019 Budapest, Hungary



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# FBO RIGA Earns IS-BAH Stage II Registration

FBO RIGA business aviation center at Riga International Airport, Latvia, has gained International Standard for Business Aircraft Handling (IS–BAH) Stage II accreditation, as the company has successfully passed the second audit of International Business Aviation Council (IBAC). FBO RIGA is the first and the only holder of this certificate in the Baltic States.

"We are proud to earn IS–BAH Stage II accreditation," Roman Starkov, co–owner of FBO RIGA, said. "This international recognition was achieved by the great effort of the whole team, which is com– mitted to the highest level of safety for ground handling operations. A rigorous audit by IBAC confirmed that FBO RIGA fulfills all the requirements for business aviation safety and in many respects exceeds what is required by mandatory documents."

FBO RIGA earned IS-BAH Stage I registration in 2017.

# WFS Supports Paris Air Show's Success

Will Facey, EVP ground handling, EMEAA, congratulated the 50–strong WFS team who contributed to the success of the 53rd International Paris Air Show in Le Bourget. As the official ground handling partner of the Air Show, the team successfully provided aircraft mar– shalling, pushback, parking, passenger services and cleaning services for aircraft taking part in the event's daily air displays



and those on static display.

WFS also supplied more than 100 pieces of ground handling equipment to ensure the safe and timely movements of aircraft in accordance with Le Bourget's time schedules.

"As a global company with its headquarters in Paris, we are especially proud to be the official ground handling partner of the Paris Air Show. It is a week when the eyes of the aviation world are on Paris and it is especially important that everything takes place safely, securely and on-time," Facey said. "The WFS team on the ground in Le Bourget played a key role in supporting the overall success of the Air Show and we also wish to thank the organizers for, once again, trusting in our ground handling excellence."



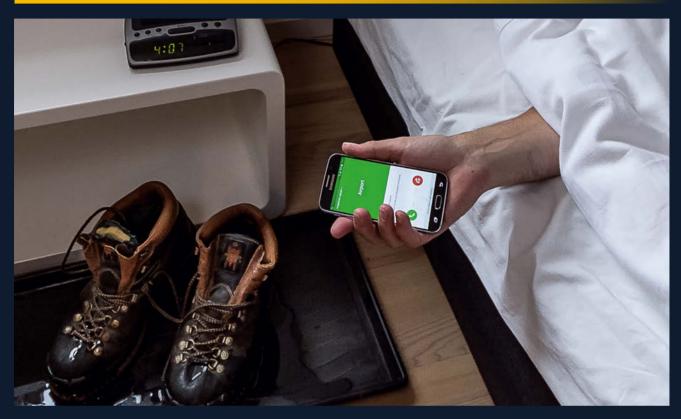
# Garsite Completes Government Order Ahead of Schedule

Recently, Garsite was provided five separate awards to supply 43 ground service fuelers to the US Military. The company announced that it completed the project significantly ahead of schedule.

"Our operation teams are the keys to our success and knowing that we have some of the best people in the business allows us to deliver on our promises and exceed our customer's expectations," said Leo Ruhlman, CEO of Garsite Progress Tank. "It is a true pleasure to know that we are able to provide troops in the field with equipment that contributes to them completing their mission safely and successfully."

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# PEOPLE

# Swissport Extends Born as President and CEO Through 2020

Following the announcement of plans for a refinancing of certain outstanding debt of Swissport Group S.à



r.l., an indirect parent company of Swis– sport International AG, Eric Born, presi– dent and CEO of Swissport International AG, agreed to extend his contract subject to the company's successful completion of the debt refinancing.

Born, who was due to leave the company at the end of 2019, has agreed to extend his contract subject to the company's successful completion of a planned debt refinancing by Sept. 30, 2019. Born's extension as president and CEO would be for a further year to the end of 2020. Born has been serving as the president and CEO of one of the world's leaders in airport ground services and air cargo handling since August 2015.

# TBD Appoints Leonard as New Head of Operations

TBD, a manufacturer of GSE and access solutions for the aviation industry, has appointed Huw Leonard to the senior position of operations manager



(director designate). Leonard joined the company to apply his technical expertise within the aviation manufacturing environment and will spearhead continuous improvement strategies.

"Huw joins TBD at a pivotal point in our development," Steve Meredith, CEO of TBD, said. "We have recently introduced several important safety innovations that will have significant global impact on ground handling equipment and the success of our passenger stairs means we not only have to streamline our manufacturing systems without losing our reputation for flexibility, but we also have to build the skills and caliber of our technicians and engineers. Huw's in-depth knowledge of lean methodologies, supply chain systems and logistics will contribute to generating further efficiencies and added value, which we will pass on to customers."

# Crane Worldwide Logistics Announces Winters as CEO

Crane Worldwide Logistics Chairman, Jim Crane, officially appointed seasoned veteran Keith Winters as the company's second ever CEO.

Winters replaces outgoing

CEO, John Magee, who is leaving after 11 years in the role.

"Crane Worldwide has built our success as a result of our talented people and our unwavering commitment to client service. I am excited that our CEO successor has come internally as Keith exemplifies all of the great values we have built this company on," said Crane. "I am grateful for everything John Magee has accomplished in the role and personally thank him for his commitment as one of our company founders. I am confident the transition will be smooth – our leadership team is solid, and we are looking forward to the future."

# NEW DEALS

# NMC-Wollard Becomes Wollard International with New Ownership

NMC-Wollard, a supplier of GSE for more than 70 years, announced it is now Wollard International and has been acquired by a group led by Robert Priddy and Kilroy Partners. Industry veteran



John Carroll is chairman of the new company and Greg McDermott remains president. Moving forward, Wollard will grow its global customer base by expanding into new product areas.

"Robert Priddy and Kilroy Partners are the ideal business partners for Wollard International as we enter the next chapter of our growth," McDermott said. "They have invaluable experience in the aviation industry and will help us capitalize on the growth opportunities ahead."

"We are excited to invest in Wollard and have the opportunity to help build on its strong foundation," Priddy added. "With many years of experience in the aviation industry, we understand the needs of the company's customers and will help Wol– lard leverage its reputation for quality and service to become the industry standard in GSE."

Kilroy Partners is a private investment firm providing equity capital to companies in the lower-middle market. Kilroy invests across manufacturing, transportation, logistics and business services sectors.



# Gazprom Neft and Air France Extend Cooperation Agreement

Gazpromneft–Aero, the jet fuel business operator of Gazprom Neft, has signed an agreement with Air France to refuel regular flights at the Nikola Tesla inter– national airport in Belgrade, Serbia, from where the airline has recently launched regular flights to Paris. The total refueling volume under this contract will exceed 2,000 tons and will be carried out in partnership with NIS, a subsidiary of Gazprom Neft in Serbia.

"Increasing the refueling volume of major air carriers at international airports is a priority for the development of our business," Gazpromneft–Aero CEO





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Vladimir Yegorov said. "As part of Gaz– promneft–Aero's long–term strategy, our aim is to become one of the 10 major jet fuel suppliers worldwide as we continue to expand our international network by offering the highest standards of refueling services. In the future we aim to further expand our partnership with Air France at Russian and international airports."



# Menzies Aviation Secures Renewals with Norwegian Air and WestJet

Menzies Aviation, a global aviation logistics specialist, announced a two-year renewal with Norwegian Air at four airports and the renewal of its contract with WestJet at Toronto Pearson International Airport.

The Norwegian Air renewal will see Menzies deliver a full suite of ground handling services at Newark Liberty International Airport, Fort Lauderdale-Hollywood International Airport, Orlando International Airport and Los Angeles International Airport. At Toronto Pearson International Airport, Menzies will handle 41,116 turns per year for the duration of the contract with WestJet.



# Always an Edge Ahead

# Daifuku Acquires Software Companies

Daifuku Co., Ltd. announced it is to acquire Netherlands-based Scarabee Aviation Group B.V. and Australia-based Intersystems (Asia Pacific) Pty Limited. The acquisition of both companies enables the Daifuku Group to enter the airport security checkpoint and information management fields. Along with diversifying Daifuku's business unit for airport systems and complementing its existing hardware, the acquisitions will strengthen its global competitiveness as it generates synergy between its group companies based in North America, Europe, Asia and Oceania.



# Nexxiot Becomes Partner of Unilode

A leading enabler of the digitized supply chain, Nexxiot is now an official partner of Unilode Aviation Solutions. The aim of this cooperation is to implement a globally unique project: the entire fleet of Unilode loading devices is to be digitized within the next 18 months. All Unit Load Devices (ULDs) of the fleet will be equipped with Bluetooth sensors. The data will then be processed, analyzed and made available by Nexxiot for Unilode.

"The strategic partnership with Unilode is an important step for us in scaling our business model. For the first time, we are now developing solutions to digitize the air freight market and make the handling of ULDs transparent worldwide. We achieve this by combining freight and movement data. Our extensive experience in the rail segment has helped us to master the problems in the air freight industry," said Nexxiot CEO Helmut Kaspers.

"We are very diligent in selecting our partners and have high standards for the companies we cooperate with. After a long review, it turned out that Nexxiot is currently the only supplier worldwide with whom we can implement this kind of project in such a short time," Benoît Dumont, CEO of Unilode Aviation Solutions, said. "That's why we've brought Nexxiot on board as a strategic partner and benefit from the company's vast expertise in the digitization of large fleets."

# Universal Weather and Aviation, Inc. Agrees to Sell UVair to World Fuel Services

Universal Weather and Aviation, Inc., has signed a definitive agreement to sell its UVair Fueling Division to World Fuel Services.

"We didn't achieve our 60-year track record of success and remain the industry leader in international mission support by standing pat and being satisfied with the status quo," said Universal's chairman Greg Evans. "We've always been nimble, and not afraid to make bold decisions that will allow us to adapt to changing market and better develop solutions to our customers' future challenges.

Until the official close, there will be no changes in how Universal and the UVair Fueling Program conducts business. Upon the official closing of the sale, as part of this agreement, Universal will continue to service its trip support customers as it always has and World Fuel Services will become the exclusive fuel provider for all missions through Universal.

Evans said that moving forward, Uni– versal is committed to investing in growth areas of the company.

"Universal has the industry's most comprehensive end-to-end mission management infrastructure, integrating more phases of the mission, and supporting more global trip legs, than anyone else," said Evans. "World Fuel Services has built an unparalleled, global fuel supply network. With this new agreement, our customers will continue to benefit from having Universal seamlessly manage their trips, while at the same time enjoying the advantages of World Fuel's global fuel supply network to better support their evolving needs."





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# The ABCs of PCAs

Seeking to educate his team and others in the industry, United Airline's Tim Fox has recently published an informational whitepaper on pre-conditioned air.

By Josh Smith

any elements of the ground support industry are nuanced and task specific. So, it can be difficult for someone new to grasp certain GSE concepts, especially in a maintenance setting.

A self-proclaimed geek about HVAC and air conditioning. Tim Fox recognized this and the program manager – facilities, engineering and maintenance at United Airlines took the opportunity to educate those in the industry by creating a whitepaper offering an overview of pre-conditioned air (PCA) units.

"For 23 years of my 29 1/2-year career at United Airlines, I was actually a technician on this fixed gate equipment," Fox says, noting this hands-on experience working with fixed-gate assets like boarding bridges, PCAs, ground power units and hangar assets has been critical to his cur-



rent job duties. "And I have a 35-year background in HVAC and refrigeration."

In his role with the airline, Fox would often be dispatched to stations where a perceived issue with a PCA was taking place. If a PCA unit was the problem, he would investigate and complete a report.

"Sometimes it would actually come from someone noticing excessive APU burn at a gate and investigate why," Fox says.

"In a nutshell, I see some commonalities of why some of this equipment isn't necessarily performing how we would like it to."

By putting these common issues together in one location, Fox's whitepaper allows personnel to troubleshoot more efficiently.

"One thing that led me to want to do this is to educate – my own leadership, our users on the ground and even the people that manufacturer the equipment," he

### Pre Conditioned Air and Providing Comfortable Aircraft Cabin Conditions on the Ground by Tim Fox

**Executive Summary** 

PCA (Pre Conditioned Air) systems are used to introduce fresh conditioned air into an aircraft cabin, while the aircraft is parked at a gate or maintenance site. Air is filtered, heated or cooled, and moisture is removed before delivery to the aircraft. Once the conditioned air enters the aircraft coupler, at the end of the PCA hose, it is distributed through the aircraft cabin's duct system and into the cabin.

### Introduction

The goal of this paper, among other things, is to explain the purpose of a PCA unit and some of the challenges faced by airports, maintenance contractors and airlines regarding the ability to maintain comfortable aircraft cabin conditions. An additional motive of this paper is to provoke continuous dialog for mindful design and usage of PCA equipment and systems. It's this author's opinion that it is beneficial for end users, airport designers and PCA equipment manufacturers to discuss things observed in real world PCA applications. This can better help PCA professionals assist the airports and airlines to create a more comfortable cabin. Sometimes the adverse conditions realized in the field aren't noticed during controlled laboratory tests in the factory. Possible end user issues could be overlooked by manufacturers. This paper will attempt to explain how PCA equipment operates and will also provide ideas for some areas of improvement, in the opinion of the author.

explains. "Here's what we're seeing. And here's what I think we could do to make this a little bit better."

There are also environmental reasons putting pressure on efficient PCA operation.

"There's a very big push at airports to not use APUs to cool the aircraft when it's at the gate. So, these PCAirs have to work as good as the aircraft's internal climate control system," Fox says. "At times, very often, they don't work as well. That unit on the aircraft works very well, so it's tough to mimic the performance of that with a ground machine."

To complete the whitepaper, Fox collaborated with manufacturers of PCAs and received stellar cooperation. He says GSE manufacturers are inclined to contribute to a project like this to assuage potential complaints from customers.

"They often get called and told their machine is malfunctioning," Fox says. "In actuality, it's how the airline or the airport is trying to use the machine. We're not always using it correctly, but the manufacturer gets blamed."

The whitepaper was originally written in a previous form three years ago. Fox rewrote it with more United Airlines references, so it could be used as an internal reference tool. Then about six months ago, he broadened it again to better benefit the industry.

"I tried to keep it a bit basic, but I did have to get a little technical when it came to explaining certain things," he says.

Fox says his career goal is to gain as much knowledge of gate equipment and operations as his United Airlines colleague and mentor, Dick Cloud.

The whitepaper, titled "Pre Conditioned Air and Providing Comfortable Aircraft Cabin Conditions on the Ground" can be downloaded at www.AviationPros. com/21089654. **GSW** 



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# **Mitigate the Risk of Equipment Fires**

Automatic fire suppression systems are designed to protect GSE and keep ground crews safe.

# By Steve Mulhall

WWW ith more than 20 fire incidents with equipment damage on the ramp going viral in the last three years, the aviation industry has taken notice. During the International Air Transport Association (IATA) committee meeting in March, fires on the ramp were an item of discussion. Firetrace International was invited to the meeting to explain automatic fire suppression systems on ground support equipment (GSE) and how they benefit owners and operators.

Following the meeting, IATA decided to add language to the next publication of the Airport Handling Manual (AHM) on fire detection and suppression. The language intends to reduce the number and impact of fire incidents and will become effective on Jan. 1, 2020.

AHM 913, 19.3 – Due to potential safety risk to personnel and aircraft damage, it is advisable to consider the use of either a smoke and/or fire detection

> system or an on-board automatic fire suppression system coupled with automated shutdown on all equipment that interfaces with aircraft as well as other equipment.

# The Impact of a Fire

With over 100,000 arrivals daily around the globe, a fire involving interfacing GSE has an immediate impact on airport operations. Anytime there is a fire on the ramp, ground crews, flight crews and passengers can be put in danger. A fire can leave critical GSE inoperable, airplanes out of service or in a worst-case scenario, a total hull loss. These scenarios can cause a ripple effect of delays and flight cancellations.

When a fire occurs in a piece of GSE, the operator has two choices – try to extinguish the fire or contact aircraft rescue and firefighting (ARFF) and wait until they can respond. If the operator chooses to attempt to extinguish the fire, they must first remember to perform shutdowns before exiting the equipment, grab the portable fire extinguisher, pull the pin, aim and release the fire extinguishing agent at the source of the fire. Gaining access to the source of the fire often involves opening or accessing compartments that would expose the operator to severe injury, therefore it should only be done by trained firefighters.

If the operator contacts ARFF and stands by, in the time it takes for first responders to get on–site, the fire could grow and cause severe damage to equipment or aircraft.

# What are the Fire Risks?

According to a purchasing study conducted in 2019 by *Ground Support Worldwide*, nearly 50 percent of those surveyed said the average age of equipment in their GSE fleet was 10 years or older. The age of equipment and the demanding nature of their heavy use are contributing factors which make equipment more vulnerable to fire. Preventative maintenance programs address many issues from continual wear, but fire can remain a risk.

Equipment and vehicles with fuel-based engines can run for extended periods, which creates an extremely hot environment. While in operation, the lines for fuel, hydraulics and deicing liquid, if necessary, keep the equipment running. These fluids are extremely flammable and if a line or fitting fails, the liquid can spray out onto the hot equipment causing a flash fire.

The electrical system presents multiple fire hazards. Batteries can be at risk of a fire if not properly secured and protected from the possibility of a short circuit. A battery can become a fire risk due to leaking or venting of hydrogen gas. In a confined space, like the battery compartment, hydrogen can hit a lower flammability limit of 4 percent quite quickly. Electrical wiring and connections can also



be a hazard if not properly secured or damaged. They can create an arc or short circuit, causing a fire.

While preventive maintenance does reduce the risk of fire, it does not eliminate the risk, unfortunately. When a fire event does occur, an automatic fire suppression system can detect and suppress the fire before it has a chance to grow and cause catastrophic equipment damage or injury to individuals.

# What is Automatic Fire Suppression?

An automatic fire suppression system detects a fire event, releases a suppression agent and shuts down the equipment to prevent a fire from spreading. There are two primary detection methods for automatic fire suppression systems - active and passive. Both are effective methods to detect fire.

An active system needs a power source to detect the fire by constantly monitoring for signs of heat or smoke. This requires connection to the vehicle battery or power supply, which can have a parasitic power draw on the equipment or uses a battery that must be monitored and replaced as needed. The drawback with active detection is the system's inability to detect fire with a loss of power.

Passive fire detection systems like Firetrace do not rely on electricity. The system utilizes a pneumatic fire detection tubing in and around the area that has the fire hazard, like an engine compartment. When the detection tubing comes in contact with the heat and flames from a fire, the tube bursts, activating the pressure switch to initiate shutdown, as well as releasing the suppression agent through the distribution network. The distribution network consists of application-specific nozzle configurations to provide a total flooding of suppression agent as well as local application of the agent to the most hazardous parts of the equipment.

# **Choose a Suppression** Agent

Automatic fire suppression systems have a variety of chemical agents to choose from to suppress the fire. Dry chemicals, clean agents and carbon dioxide are all proven and acceptable suppression agents for use on fires in different applications.

Multipurpose ABC dry chemical is very

capable of extinguishing fire. However, the properties of the agent restrict its use in certain applications. ABC dry chemical is principally made from monoammonium-phosphate and is highly corrosive to aluminum. When using on a fire, it melts on contact with heated surfaces and is difficult to clean up from an airframe. Both NFPA Standards and the International Fire Code (IFC) do not allow ABC dry chemical extinguishers in airports at fueling areas, maintenance areas or on ramps due to the corrosive nature of the agent on aluminum aircraft components.

Wet chemicals have found some popularity due to the belief that they are safer on equipment. These chemicals have antifreeze compounds added to survive the environment typical to GSE. Antifreeze compounds have the drawback of being corrosive. Additionally, fires within GSE have hidden obstacles, such as engines and equipment where fires can start. That can make it difficult for the wet agent to penetrate and suppress the fire.

Clean agents are practical for many applications because they are non-corrosive and leave no residue. They act on the fire tetrahedron by one of two principles: reduction of heat or inhibiting the chain reaction which suppresses the fire. Because of un-closable openings and air movement in GSE, it is difficult to maintain the amount of agent needed to suppress the fire.

Purple-K, also known as PKP, is a dry-chemical fire suppression agent and approved for use on the ramp. Purple-K is non-corrosive and works well in extreme environments. When released, the agent gets into the concealed areas where fires may be hiding. When it comes to choosing a suppression agent, Purple-K is a wise choice for GSE.

# Installation Options

Fires can cause injury, loss of life and sig-

nificant damages to GSE. An automatic fire suppression system is an effective, safe and economical solution to mitigate fire risk. System installation is available either at the OEM level when purchasing a new piece of equipment or as a retrofit onto equipment already in service. Installation times vary based on the system and equipment and generally takes between four to eight hours. The process of installing a system begins with the design. Each piece of equipment goes through a review for optimal placement of the tubing, cylinder, manual release and automatic equipment shutdown which prevents reignition. After design, the system is professionally installed and commissioned. The installer will certify the system and the equipment is up and running.

# In the Event of Fire

After a fire occurs in a piece of equipment, the first step is to clean up the suppression agent. Next is the replacement of the detection tubing and recharging of the cylinder. Once recharged, the professional installer will recertify the system and the equipment is ready for use. As with installation, getting the equipment back in working order will only take a few hours.

# Assess Risk

Automatic fire suppression systems are not mandatory. When analyzing the cost with turn rate and considering the cost of downtime, it can be a prudent investment. Every type of GSE has some level of vulnerability and risk of fire. It is important to assess each type of equipment on the factors contributing to their risk. Installing a fire suppression system not only protects equipment but also provides a safer working environment for personnel and reduces the impact of fire.

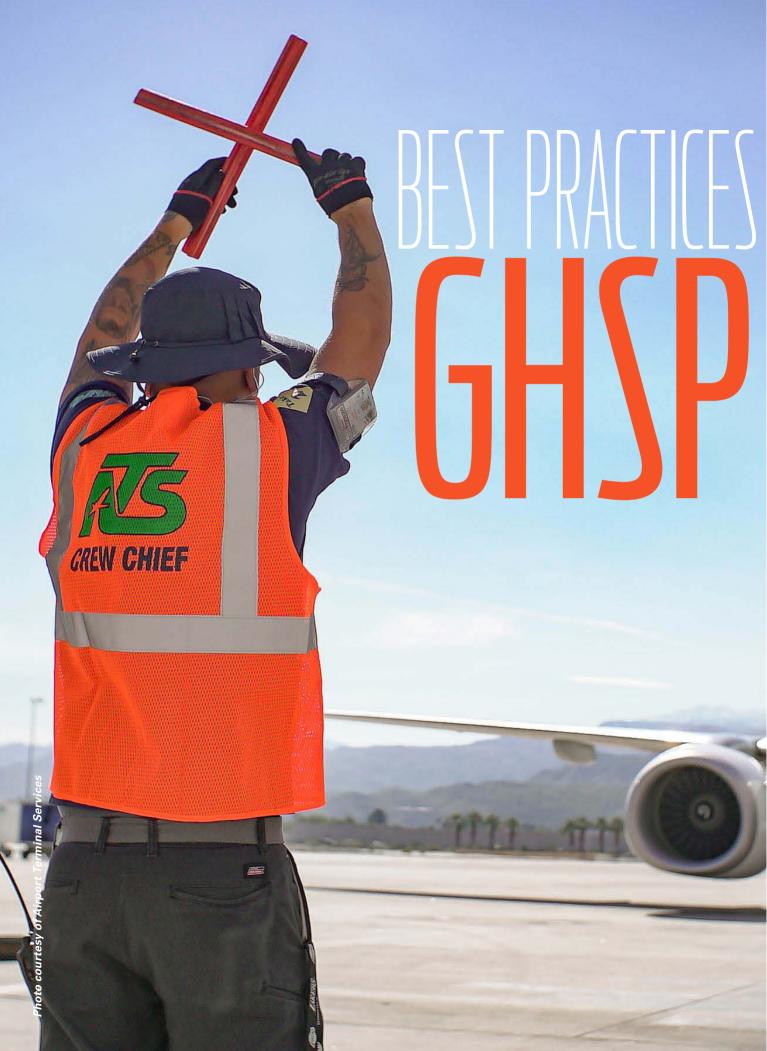
Have you assessed the fire risks in your ground support equipment? GSW



# ABOUTTHE AUTHOR:

Steve Mulhall has more than 17 years of fire suppression industry experience. He has been instrumental in providing fire suppression systems for heavy equipment and vehicles systems in a variety of industries. He joined Firetrace International, a leader in fire suppression systems for micro-environments, in 2018 and is the business development manager for GSE. He cultivates strong relationships with key industry stakeholders and consults with engineering to provide the best fire suppression solutions to address industry concerns.

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# FOR WORLDWIDE

By Mario Pierobon

There are numerous strategies for ground handling companies to consider when establishing effective safety management and training programs.

ircraft ground handling activities require an extensive wealth of technical skills, regulatory proficiency, safety and security knowledge, in addition to the service delivery elements along with interpersonal and leadership skills. A ground handling service provider (GHSP) must ensure that training programs have a high level of appreciation of all these elements.

"At the same time, we have to ensure the induction experience for our employees is engaging and meets the ever–growing changes in learning styles adopted within teaching environments that our people are used to receiving," says Claire Hall, people executive vice president at Menzies.

Important strategies for aircraft ground handling companies to deliver effective training include the development of training programs, the implementation of distance learning, accounting of personnel retention issues and considering the contribution of safety management to training customization.

# Developing Training Programs

Developing a training program for GHSPs comes with distinctive features and challenges.

"The challenges we face start with the fact that training has to be informed by the risk assessment, which will produce a standard, and safe, way to perform the task in the form of a standard operating procedure (SOP). This then defines what needs to be included," says Dave Rogers, head of global training at Swissport.

"One should also consider the fact that many operators have different procedures and this then drives complexity within training, for example, teaching the most basic thing – i.e., where cones shall be positioned at the aircraft – will need to cover each operator configura–



tion and then explain to the employee why it is different depending not on the aircraft type but of the livery of the aircraft, even with same aircraft model," he continues. "This requirement for operators to have operational procedures comes from ICAO requirements for commercial air transport and so cascades the challenge into the classroom."

It is indeed a challenge for GHSPs to develop a training program that airline customers will accept in place of their own.

"We have had very little across-the-board success with this. In most of our stations, we serve multiple customers and our business model is to cross-utilize all team members for all contracts," says Tom Hubbard, director of field training and education at Airport Terminal Services (ATS). "Having to complete full training for each customer makes it confusing and overwhelming for our team members. Our training program meets IATA/ISAGO standards. Even then, the airlines expect full training of their own programs."

Another challenge has to do with the fact that GHSPs are dealing with adult education and not all employees are graduates, so there is a requirement to ensure the training is engaging and informative.

"There is little point in the greatest piece of knowledge being included in training if the participants are not engaged. Learning just will not be effective. We have to be able to deliver and enable learning according to the culture of the nation and that of the participants. For instance, in some countries, we find employees really enjoy coming to class for the opportunity to learn together and genuinely discuss topics," says Rogers. "We have to accommodate all learning styles and ensure the training materials are suitably differentiated to include both visual, auditory and kinaesthetic activities. All of this then needs to have the learning outcomes assessed to recognize if competency has been achieved and everything needs to be documented and tracked for recurrent requirements."

Despite the challenges, aircraft ground handling training programs also provide success opportunities – such as developing trainers and helping them grow and become a true part of the operational team.

"The challenge here is that many people who enter the world of training often develop to a point where they are able to move forward in

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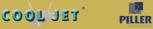
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their career into leadership positions. However, this is indeed a positive point," says Rogers.

At dnata, new joiners undertake a mix of classroom– and practical–based training, depending on what their roles are. The class– room element consists of general induction information, along with a series of mandatory safety and security modules to ensure they can operate safely and confidently on the ramp.

"For the practical elements, they receive hands on training for the role(s) they are expected to perform on the ramp. This is delivered by experienced and qualified trainers who ensure the new personnel are fully competent in their new roles," says Steve Clark, head of global training for dnata. "The initial training program for new hires usually takes approximately two weeks and the participants are then operational. As they progress onto other roles on the ramp, they undertake more training accordingly. This training is obviously dependant on the new role they are doing but can last between two days and two weeks".

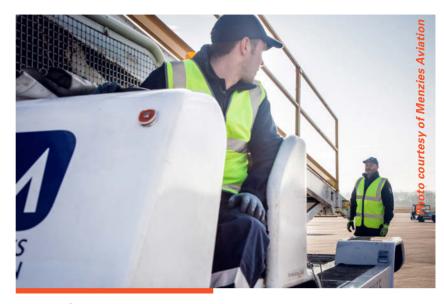
Menzies' training programs have individual distinctive features.

"These can be a challenge to govern and to ensure that we provide a consistent standard throughout each individual program. We have a global organizational learning and development team that sets the basic standard induction programs and governance processes. Our goal is to provide industry leading training and development to our employees, that keep them safe and motivated, and provides them and us with a platform to grow," says Hall. "In addition, our technical and regulatory training requirements are annually reviewed against the IATA AHM standards, our regulators and our customer requirements, this is to ensure we are always in line with the industry standards and risk management."

# **Distance Learning Solutions**

Distance learning solutions have become mainstream in recent years as a means for GHSPs to communicate the overarching standards, requirements and training content. ATS uses a learning management system (LMS) to track, record and administer training.

"We do still require instructor-led training as well, but our LMS has enabled a consistent and uniform message to be delivered and tracked. We take advantage of new course authoring software programs that enable



Our learning management platforms allow our management and our customers to have better **transparency on training records** and gives us a much more **resilient record keeping** process.

- Claire Hall, people executive vice president, Menzies

interactivity, the use of videos and knowledge checks as well," says Hubbard.

Menzies make use of multimedia networking platforms to communicate its training programs and ensure that all trainers have the correct tools to do their job and have a platform where they can share ideas, issues and relevant information.

"Although our locations are vast and there can be many varieties of requirements across each location or airport, we handle similar customers. This means this sharing platform can allow us to support our customers' agendas on a global level. We also utilize LMS to host digital learning content that is standardized for all locations. Our learning management platforms allow our management and our customers to have better transparency on training records and gives us a much more resilient record keeping process," says Hall.

When compared to other industries, however, Rogers believes that eLearning is still growing in the aircraft ground handling market.

"Perhaps the reason GHSPs are lagging could be attributed to some of the challenges inherent to the business and, of course, there is the complexity that some authorities may or may not allow certain topics to be delivered by eLearning. We also find that employees really value interaction with a trainer as a subject matter expert to allow for questioning and deeper understanding to be checked," he points out.

# **Personnel Retention Issues**

High turnover is a challenge in the aircraft ground handling sector, therefore training must be designed and administered to address this particular challenge.

"A high turnover rate may be influenced by poor training where the employee does not feel confident or is not competent to perform their assigned duties, a well-trained and confident employee may be less likely to seek other employment," says Swissport's Rogers. "However, it would be wrong to purely say training effectiveness is directly related to staff turnover rates as there are many socio-economical and socio-political reasons which may impact staff retention rates."



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The key for a GHSP training program is to engage and enable learning for the participant in an informative, effective and efficient manner.

"Ensuring this approach can only help support employee retention and make it more likely the participant is to stay in the company. It is the 'Goldilocks' zone: not too much training on topics the person will not be engaged in, not too little training that the person feels less than confident or may indeed not be competent. Just the right training, to the right person, at the right time, in the right way," says Rogers.

Menzies focuses on the reviews from employees that have left the business to update induction processes, as well as the after care and management of the employees when they have completed their training.

"We adopt a blended learning approach to our inductions, to ensure they have a mixture of classroom-based learning, digital learning, multimedia and practical training. We also recognize that the theoretical element of their induction journey makes up only 10 percent of their learning, so we work with our HR and operational management to ensure we have a supportive environment and development path for our employees, once they are in their dayto-day environments," says Hall.

"We also have many people across the business who started their career in ground handling and have successfully moved up and across leadership roles in the organization," she adds. "It is, therefore, critically important to invest in the development of our people – not only to give them the skills to do their job today, but to give them the skills to build their career with us."

Training is subject to ongoing review at dnata to ensure it keeps pace with the operational and business demands.

"As improvements are made within our operating procedures or as our customer requirements change, these must be rapidly reflected within the training system to ensure continued alignment," says Clark. "We are constantly working to improve the effectiveness of the training programs, moving more to pointof-need training and competence based assessment, along with establishing more consistent coaching and mentoring for our new hires."

Hubbard of ATS points out that a learning experience oriented at employee retentions should not end with training.

"After our team members complete training, they are paired with a 'mentor.' Observations are conducted and follow-up surveys have begun to help improve our training and rate the level of comprehension of the training," he says.

# **The SMS Contribution**

As a consequence of safety management system (SMS) implementation, training programs for GHSPs are being increasingly fed by SMS.

"We operate under a SSMS (safety and security management system). The auditing, risk assessments and quality assurance part of it all ties in and has an impact on how training is delivered and what needs to be added," says Hubbard.

"Safety is integrated within all of our training programs. However, our approach to safety is not limited just to training. It is embedded throughout all of our operational and management systems. All of our personnel, supervisors and leaders are regularly updated on the safety initiatives in place across dnata as well as their responsibilities within the overarching safety systems," says Clark. "In terms of our safety programs, we are always working to improve their effectiveness. Key initiatives include the introduction of a STOP observation program and more widespread incident management training for all levels of our leadership and management teams.

"Over the past years we've also introduced an Incident Investigators training program which covers dnata's operations worldwide. This will continue to develop as we mature and grow."

At Menzies, safety management systems and technical services underpin everything that is provided in regards to training content.

"Although operational learning sits within the people sector of our business, our training is created against our ground handling manuals and SMS and this theme is consistent across all locations. The contributions that our SMS provides is a standardized approach to how all employees manage safety and security within our locations," says Hall. "Our managers will manage safety in a consistent way from the top down and bottom up. This gives us the insight and guidance we need to consistently manage the risks within the business, through our training." **GSW** 

### ► ABOUT THE AUTHOR:



Mario Pierobon is a safety management consultant and content producer. He currently is working on a research project investigating aircraft ground handling safety. You may reach him at marioprbn@gmail.com. trepel.com/looking-forward



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# The Wash of the Future

MSG Productions' Multi Solution Gate aims to revolutionize the way aircraft are washed and deiced.

By Walker Jaroch

n Norway, what some are calling the future of aircraft washing and deicing is being developed – with ideas borrowed from the local carwash. The Multi Solution Gate (MSG) is the first automatic system for washing and deicing aircraft in the world, says Frøydis Hovden, MSG Production's vice president of sales, adding that people



are surprised it's taken so long to come up with the idea.

"It's one of those things that when we present it, people say, 'why has nobody thought about this before?' Because it is so obvious," Hovden says. "We're talking today about driving automated cars and flying with no pilots, so why do we need a person to stand there and do this manual operation to the plane? It doesn't make any sense for the future."

The MSG works similarly to the way an automatic carwash operates. After a plane enters the MSG's hangar, the robotic arms of the system descend and move around the plane for automatic washing and deicing, needing only a person in a cabin on the ceiling above the system for operations, and a person on the ground to help coordinate, as crew. The aircraft is helped guided through the MSG by an electric tug.

"It's all automated so it's a lot safer and more environmentally friendly," says Hovden. "It's very exciting and it's really something very new. This is the first automatic system for washing and deicing aircraft in the world. It's always been done by manual methods – using trucks for deicing and washing – washing is still usually done by hand washing. There are some other methods, but they are time consuming and expensive. With our system, the deicing will take only four to six minutes and washing will take about 20 minutes."



The environmental benefits of the MSG are multifold. Being inside a hangar allows for the easy capture and containment of ADF and an on-site recycling system makes for quick processing of the fluid, which can then be resold. The automatic nature of the MSG also ensures only as much deicing fluid as needed is sprayed.

"Normally, you have one deicing truck on either side of the plane and it's sometimes hard for them to make the exact same movements and use the exact same amount of fluid. But in our system, it is all pre-programmed so you know you will have exactly the correct amounts according to the regulations," Hovden says. "We're capturing all the deicing fluid and recycling it, so there is no spillage into nature and it's also a lot more cost efficient."

A clean aircraft is, as MSG's research points to, an environmentally friendly aircraft and by streamlining the washing process, Hovden says airlines can expect lower emissions from their planes.

"We have research telling us that you can get as much as 2 percent savings for fuel if you fly a clean aircraft as opposed to a dirty one, and 2 percent is a lot of CO2 emissions and saves costs for the industry," she says. "We talk to many airlines about this issue now and they tell us it's very time-consuming and complicated to do the washing. You have to put the aircraft away for the night and have hangar capacity and it's time consuming, which is why they don't clean it as often as they should... So, we think by making it easier and quicker to clean aircraft, it will get done more often and be a contribution to the environment by itself."

Another added benefit, Hovden explains, is that a regularly cleaned aircraft has an increased longevity.

"They tell us in sandy areas that the lifetime of an engine is lowered by up to 75 per-



cent by having a lot of sand in the engine. And producing more engines than you should need to make is obviously not good for the environment, as well," says Hovden.

Hovden adds that the MSG doesn't change any of the established washing or deicing operations rules and regulations.

"We're using the same methods as today. We're following FAA regulations and procedures the industry has adopted – so we're not doing anything differently. We're only doing it in a machine, not manually, and we're doing it under a roof and collecting the fluids. But the methods used are not changed," Hovden explains.

The potential benefits of the MSG have not gone unnoticed. In 2016, the project received the Seal of Excellence award from the EU Commission Horizon 2020. The Seal of Excellence is awarded to project proposals submitted to Horizon 2020 – the



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EU's research and innovation program - but who did not receive funding via Horizon 2020. The Seal of Excellence acknowledges a project's worth and helps those projects secure funding from alternative sources.

"They support what they think will be big innovations to the world and our product scored higher than anyone else in this class in environment and transportation," elaborates Hovden. "We can really contribute to lowering the emissions and also to stop all the glycol. You know, most of the glycol spent on deicing in the world is just being emitted into nature. It's a big environmental issue, and here we can change that because we are recycling and reusing everything."

The pilot has a **big responsibility** today because the pilot has to say whether the plane is okay or not, even though the pilot cannot really see what is happening. There is no way for the pilot to see what condition the plane is in.

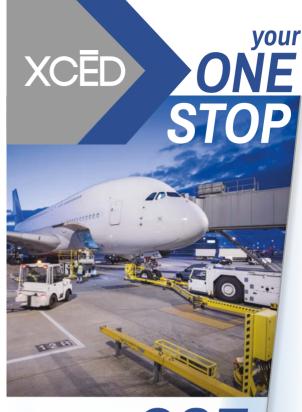
Hovden says the MSG can accommodate a Boeing 737 sized aircraft and smaller, and the benefits of an expedited and automated aircraft deicing isn't only reserved for ground handlers. Pilots, too, Hovden points out, can breathe an added sigh of relief.

"I think for the pilot this is a big relief. The pilot has a big responsibility today because the pilot has to say whether the plane is okay or not, even though the pilot cannot really see what is happening. There is no way for the pilot to see what condition the plane is in. That is the ground handlers and the people outside who will see. But in this case, the pilot can know for sure that it is done correctly. You have seen incidents in the world where you have seen they have not detected clear ice, for instance. So, I think the pilot can be much safer, and of course the pilot will have communication with the person in the cabin. It's just a lot easier if things are automated," she says.

For installation, Hovden says that airports could renovate existing hangars for the MSG, but that it is more cost effective to build new. Altogether the MSG takes up 29,063 square feet.

New onto the market, Hovden anticipates MSG Production will be making its first sales of the MSG later this year.

"We are working on the first commercial delivery now. Negotiations are in the works to make deliveries this and next year," she elaborates. "I think this is something that will be used worldwide in a few years." GSW



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# The Sky's the Limit in Istanbul After the Great Move

Airport officials and ground handlers predict increased traffic and further growth upon moving into the new Turkish airport.

### By Ronnie Wendt

n April, trucks moving together in a synchronized caravan transported 50,000 tons of equipment (including 11,833 pieces of GSE) from Ataturk International Airport (ISL) to Istanbul Airport (IST) in just 45 hours.

News reports describe it as a true logistical masterpiece. Though the airports lie just 26 miles apart, trucks covered an estimated 248,549 miles as they made thousands of journeys between the two facilities. In addition, 146 Turkish Airlines (THY) aircraft also made the transfer.

Twelve hours after the "great move," the first Turkish Airline flights took off at the \$12 billion airport.

"We believe coordination and communication were key to completing the successful move," report officials for iGA Istanbul, the consortium that won the concession to build and manage Istanbul's mega airport for 25 years.



Planning what Turkish Airlines chairman Ilker Ayci has called "the biggest move in aviation history" involved organizing more than 100 meetings and workshops with stakeholders and government agencies to examine the details of the GSE transfer. The airport works with three primary ground support stakeholders: Turkish Ground Services (TGS), Havas Ground Handling Co. and Celebi Ground Handling Company. It also hired three separate logistics firms to move equipment. Arkas Logistic Company moved equipment for Turkish Airlines and TGS, Hareket Logistic Company moved Celebi units, and Istanbul Agir Nakliyat moved Havas GSE.

"For the transfer plan, we studied in detail each vehicle movement from ISL to IST in 15-minute movement windows. From there we developed the Transfer Logistics Plan with details for each vehicle and its cargo," say iGA officials.

The airport organized transfer trials before the "Big Bang," as the move was also called.

"We paid special attention to safety planning around the loading and unloading areas to ensure safe and quick handling of the equipment, which was key to achieving



delivery rates that met the Transfer Logistics Plan," note iGA officials.

iGA coordinated the transfer from three centers and set up a strong communications plan to ensure all movement went smoothly.

"In order to meet the requirements of passing from airside to airside, we set up a secure corridor, using the new highway connection between Ataturk Airport and Istanbul Airport. This corridor was monitored by police and security teams to allow trucks to pass from airport to airport, without further security inspection, to speed up the unloading process," iGA officials add.

Some of the equipment was too large to pass through highway toll stations. The airport set up an alternate route to deliver those vehicles.

Havas moved approximately 600 pieces of GSE to Istanbul Airport, leaving a portion of its equipment at Ataturk for general aviation flights and freight operations. The responsibility of moving equipment fell to ground handlers. But Mete Erna, sales and marketing director for Havas, reports the process was "successfully completed thanks to the perfect cooperation among ground handlers, authorities and logistics services suppliers."

"Havas moved its facilities at Ataturk to the new airport within 30 hours, less than the planned timing, by using 186 trucking rigs to transport its equipment," Erna points out.

# Larger than Life

Everything is larger than life at the new airport, not just the size of the move.

IST or "Istanbul New" is the city's third

international airport. The old airport remains open for cargo and VIP flights, while all other passenger flights will take off from what is known in some circles as the "world's new hub."

The new facility is a long time coming. Construction began in 2015, after it was determined the area required more air capacity serving Istanbul; and neither Ataturk nor Sabiha Gökçen Airports could grow to meet demand. Ataturk was already serving more passengers than its design capacity allowed, and its location did not allow for further expansion. The lack of space also meant IST could not accommodate Airbus A380s, making it the only large airport in Europe and the Middle East that could not.

"We strive to make Istanbul the aviation capital of the world, and take aviation into the future," iGA officials state. "Istanbul Airport is the key to that achievement. We want to redefine travel by making Istanbul Airport a beacon of passenger experience and a travel destination. Also, our objective is becoming an airport that is top choice among airline companies."

The new airport sets the region on this path by resolving the limitations experienced at Ataturk. Initially, it will serve an estimated 90 million passengers annually from two runways. It will eventually expand to six runways and 16 taxiways when all phases are complete. A Metrolink will connect the airport to central Istanbul in 2020.

This will rank it ahead of Atlanta Hartsfield-Jackson International (ATL), which – as the world's largest airport today – serves 104 million passengers a year.

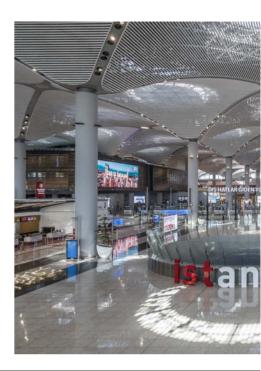
"For the short term, our goal is to become the second busiest airport in the world after Atlanta in the next two to four years and surpass Atlanta as the busiest airport in the world, when all phases are complete," iGA officials explain.

The new airport is also the largest in square footage. At 818 million square feet, it is 3½ times the size of the 250–million–square–foot Beijing Capital International.

The facility invested in 143 passenger boarding bridges from thyssenkrupp, 147 ITW Axa Power fixed ground power units (GPUs), 114 ITW Axa Power pre-conditioned air (PCA) system units with thyssenkrupp automatic hose retrievers and 114 ADB Safegate visual docking guidance systems for contact gates.

In addition, there is a 42-mile Vanderlande baggage system, which can process 10,800 pieces of baggage, gathered from 13 check-in islands. There is also an early baggage storage system available to store baggage that arrives early. Cutting-edge technology also includes smart wayfinding systems to help passengers move through the terminal. Facial recognition accelerates passenger control and a new baggage system delivers luggage quickly. The Internet of Things (IoT) provides an overview of airport systems to help crews respond quickly to problems. Nine-thousand, state-of-the-art security cameras keep an eye on operations inside and out.

"All companies were responsible for the design, installation, testing and commissioning of these systems," report iGA officials. "All processes have been running well [since moving in]. With every measure we take we want to ensure that these processes continue to run perfectly to provide the best possible and most comfortable passenger experience."





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# An Upsize in Ground Handling

Ground handlers also upsized their operations to accommodate future traffic.

Havas reports making substantial investments. The company spent \$23.5 million on a new cargo warehouse, GSE workshop, ramp and administration buildings.

"The bulk of our GSE investments consisted of passenger stairs, baggage tractors, dollies, water and lavatory trucks, due to the increase in the area on which we run our operations," says Erna. "We have doubled the capacity of our facilities at the new airport, compared to Ataturk. Our new facilities cover approximately 430,556 square feet, including a 215,278-square-foot indoor area."

Havas also increased the size of its station building, equipment maintenance workshop and parking areas at the new airport.

# **Full Steam Ahead**

"Global aviation is growing rapidly and Istanbul Airport offers outstanding opportunities to accommodate that growth," state iGA officials.

The airport is well situated geographically to attract new airlines. It also has state-of-theart infrastructure that allows airlines to grow.

The airport aims to be a top choice among airlines as currently 70 airlines service Istanbul Airport and eight foreign airlines have begun to fly from IST for the first time since it reached capacity. These airlines include Ethiopian Airlines, Nouvelair, Indigo, Air Albania, Sichuan Airlines, China Southern, Tassili Airlines and UR Airlines. Two more airlines will begin flight operations soon.

With the full capacity of Istanbul Airport, airlines from Europe, the Middle East, Africa and the Far East have also increased their frequencies.



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Other airlines are expanding their connections to Istanbul Airport by flying larger aircraft. Singapore Airlines, which operated five weekly flights with Boeing 777-200 J aircraft, will operate the next generation of Airbus 350-900, beginning in December. With this change, the airline will increase its initial business class by 62 percent. Sichuan Airlines also converted its A330-200 flights to A350 aircraft to increase its seat capacity by approximately 10 percent.

Havas sees good times ahead as the airport continues to expand operations. In fact, the ground handler has already seen an increase in contracts.

"The move to Istanbul Airport covered the transfer of existing flights only," states Erna. "However, the increased capacity at the new airport allows new carriers to operate flights to Istanbul. We've already started to receive new contracts from operators starting new service. We expect more carriers to launch flights to Istanbul once the third runway is complete in 2020."

Erna admits this has prompted Havas to hire and train more personnel.

"We also put effort into maintaining our existing workforce under the strain of relocating to the new airport," Erna says. "There are new employment opportunities as well. We currently have 1,200 employees working at the airport and plan to gradually increase this number." Havas also has increased its training investment.

"We provided training on the new apron and terminal areas, new smart airport systems and equipment," Erna reports. "We also provide equipment training with our simulator as part of our training policy. In addition, we support sustainable efficiency by providing regular refresher training with continuously updated training contents at all stations in Turkey, Latvia and Saudi Arabia." **GSW** 

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# **Fueling Aviation in Antarctica**

While ground support personnel around the world face harsh weather conditions, few compare to the atmosphere fuel handlers endure on the southernmost continent.

By Josh Smith

hen it comes to aviation, ground support is often behind-the-scenes work that may go unnoticed but carries great importance. That's true, even more so, when ground handling is supporting flights into one of the most remote places in the world.

Situated at McMurdo Station within Ross Sound in Antarctica, Chad Goodale is a fuels supervisor employed by the Antarctic Support Contract. The primary contractor at the station is Leidos and he is employed by PAE as a subcontractor. As their client, the National Science Foundation funds his company's work.

"As fuels supervisor, I'm responsible for overseeing logistics, quality assurance, training and implementation of fuel services to support the US Antarctic Program mission," Goodale explains. "On a daily basis, I meet with the staff to assign daily tasking, cover a safety topic and address lessons learned.

"Each day fuel samples from the airfield and heliport are tested within our laboratory for quality assurance."

# A Chilly Introduction to Aviation

In 2004, Goodale was graduating from college and saw his friends heading into the workforce.

"I decided on a different path," Goodale says.

Working at a sandwich shop in Fort Collins, Colo., at the time, Goodale coordinated with his manager, who had experience deploying to Antarctica each season.

"He put me in touch with the human resources department. I attended their job fair and the rest is history," Goodale says.

Goodale was not previously experienced in aviation or petroleum products prior to being deployed to Antarctica.

"I was first exposed to aviation when I joined the US Antarctic Program as a fuels operator in October of 2013. I was immediately exposed to both military and civilian aircraft such as C-17 GlobeMasters, LC-130 Hercules, Twin Otter, DC3 Baslers, Bell 212 and A-star Helicopters," Goodale recalls.

> However, his experience designing large-scale irrigation systems for retail shopping centers and other developments prepared him for comparable concepts.

"The principles within the fuels department are similar, including fluid dynamics such as flow rates, friction loss calculations and pump types," Goodale explains. "The major exception is it's fuel and not water. Additional considerations come into play as well as the need to understand how fuel acts differently than water, and the need to focus on static build-up and above ground impacts of expansion and contractions within pipelines."

# Sub-zero Work Conditions

The harsh environment prompts quick learning, primarily how to stay warm while working all day.

"The work is hard, and the hours are long, but the community of people whom surround you make it all worthwhile," Goodale explains. "Attitude is key. Maintaining a positive attitude can take you far."

While the schedule is prone to daily changes, Goodale and his team will have three LC-130 morning lines and two LC-130 night lines. The Twin Otters and Baslers vary depending on the time of the year but can fly in and out up to eight times per day.

"In McMurdo, we have two airfields – one is a skiway, which the LC–130s, Twin Otters and Baslers fly out of. The second airfield is an ice runway," Goodale explains. "The surface is as dense as a paved surface to support the weight of a C–17 GlobeMaster, Airbus A319, C–130 and 757.

"Over the course of a 16-week flying season, we typically see 70–80 flights reach the South Pole to deliver valuable cargo resupply, science cargo and over 80,000 gallons of fuel to resupply fuel reserves in preparation for the fast-approaching winter," he continues. "Every year, we have various deep field camps with required resupply flights of fuel and cargo. The number of flights to each camp varies annually, but the latest field camp we're supporting is the Thwaites project, which is a collaborative effort between the British Antarctic Survey (BAS) and the United States Antarctic Program (USAP).

Last year, alone, Goodale's team delivered more than 50,000 gallons via LC–130, along with cargo. According to Goodale, that is equivalent to 50 flights.

Much of the work performed by Goodale's team is considered sustaining, but they have seasonal projects as well.

"Each year, between September and October, we lay a 6" layflat Angus Chemicoil hose 7.5 miles from McMurdo Station to the William Field skiway," Goodale says. "This project takes over six weeks from start to finish. Following its completion, the hose line is used to transfer 80,000 to 160,000 gallons a week throughout the season. In a typical year, we'll transfer 1.2 to 1.5 million gallons of AN–8 through this pipeline." Throughout October and November, Goodale and his crew drain bulk tanks that require cleaning or are slated to receive an API out-of-service inspection for recertification.

Then, starting in January, preparations are being made to receive a resupply tanker.

"Every other year, we receive a mass resupply of fuel to replenish our reserves," Goodale explains. "On-station, we can bulk store a three-year supply of fuel, two years of operations reserves and one year as a contingency."

In order to receive the tanker, Goodale says a U.S. Coast Guard (USCG) Cutter Polar Star is deployed to break the ice within the Ross Sound. The Polar Star is deployed from Seattle and once the ice breaking is complete, a fuel resupply is required.

"We'll typically transfer 300,000 to 400,000 gallons to the ship," Goodale says.

"Once the ice channel has been milled, the USCG Polar Star will escort the annual resupply vessel and tanker into the McMurdo pier," he adds. "The first week of February is when the tanker is pier side. This evolution takes 72 to 96 hours to offload approximately 185,000 gallons of mid-grade unleaded motor gasoline (MUM), 850,000 gallons of JP–5 and 6.7 million gallons of AN–8."

Following a safe completion, all efforts are then focused on shutting down operations in preparation for winter.

"The 'fuelies' work very hard to leave operations in the capable hands of our two winter-over operators whom will remain until the following October and look after winter operations," Goodale says.

### Seasonal Shifts

While some workers stay year-round, Goodale (like the majority of personnel) is deployed to Antarctica from October through February. During this time, the bulk of science is conducted and samples are collected. He spends the months of March through September in Denver, spending the northern hemisphere summer season by helping complete planning for the next deployment.

"I work on hiring candidates for the upcoming season, procurement of consumables, equipment and updating process and procedure," he says. "It's a very busy time of year."

Within Goodale's department, there are 24 personnel on staff in Antarctica during



the peak season. These people are stationed in various places, including the helicopter refueling station at Marble Point – 60 miles away from McMurdo Station – and deep field camps stationed at the South Pole Station.

"We have five different positions starting at the top with the fuels supervisor, and then a fuels foreman, fuels coordinator, six fuel operator leads and 14 fuels operators," Goodale says.

# Challenges Presented by the Cold

It's not surprising to learn the biggest challenge of handling aircraft in Antarctica is battling extreme weather conditions and adhering to environmental requirements.

"We're constantly struggling to keep equipment from weeping," Goodale notes. "Because Antarctica is a protected area, we're responsible for mitigating any release into the





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environment. We take spills very seriously.

"In order to maintain such high standards, we implement a rigorous preventative maintenance and lifecycle replacement program," he adds. "Our equipment is routinely inspected and repaired to operate in such harsh conditions as Antarctica."

The ground support equipment (GSE) used by Goodale's team is comparable to what's used at other airports. However, the way it is used can sometimes vary. When it comes to the fueling process itself, the biggest difference is aircraft come to the fuel pits to receive fuel instead of a truck or hydrant parking alongside a plane at the gate.

"Because our runway and ramp are made of snow, we can't have any permanent structures. So, we use portable tanks and 4" portable hoses to deliver fuel to aircraft," Goodale says. "Our fuel is delivered via a 6" layflat Angus Chemicoil hose. The hose is



laid over seven–plus miles and delivers an average of 1.5 million gallons over the course of a season."

There are other unique elements of working in the southernmost area of the planet, beyond the cold.

"When I deploy, I can expect the sun to set for a few hours over the course of a few short weeks. When the sun does go down, there is still a bright glow upon the horizon," Goodale explains. "By the third week in October, it's 24/7 daylight until mid–February."

It takes a specific personality and mental

fortitude to work in Antarctica. During the peak season, the population at McMurdo station can exceed 1,000 people. But Goodale says the average number fluctuates between 750 and 850 people. But those people make the job worth it, he says.

"People ask 'why?" Goodale says in regard to working in an extreme climate. "Aside from the obvious, that it's a unique place to visit, the biggest reason is the people. I have had the opportunity to meet and work sideby-side with some amazing people." GSW



## eGSE Plans Expand in Thailand

#### Panus/Bliss-Fox is growing the electric vehicle industry for the GSE market.

By Jen Bradley

lectric vehicles are not a "Back to the Future" dream anymore. They can be found worldwide and new charging stations to power them are popping up every day. For the ground support industry, electric vehicles are beginning to enter the market space and offer a green option to help professionals save time, money and emissions.

Australian-based Bliss-Fox began manufacturing airport tractors in 1991 and in 2015 Panus Assembly Co. Ltd. took over the trademark from Thailand. Two years later, in 2017, the company's first electric vehicle prototypes were developed and then displayed for the first time at the International Airport GSE Expo in



Las Vegas last fall.

"This year, we also started a mass production line," adds Simone Livraghi, senior sales and marketing manager with Panus Assembly. "No one has ever done a push tractor of this size, fully electronic, with lithium-ion batteries."

Models F1-340E and F1-280E are the ones on the market now from Panus, which is building a new facility in Thailand dedicated solely to this venture. Visitors to inter airport Europe 2019 in Munich will be able to see for themselves the brand new F1-280E which will be unveiled in Germany.

Australian Bernard Dubois is the product and business development director for Panus Assembly, as well as the mastermind behind these electric tractors. He and his team designed the vehicles and he says that their collective vision was to contribute in a positive way to the environment while maintaining the functionality of modern GSE.

Dubois says the F1–340E can push up to a Boeing 777 at 400 tons take off load, while the F1–280E can manage both A330 and B787 aircraft types at 300 tons take off load. Both of these will be produced at the new manufacturing space in Thailand and ready to launch at airports worldwide. These will be followed by the new F1–150E and F1–400E to be released in 2020.

#### **Benefits of Electric**

Thai-based Panus Assembly is still using the basic Australian design for the electric tractor models, but added a very modern style, the duo says.

Livraghi explains that a standout component of this vehicle line is the composite cab, a step away from the traditional steel cabs found in most tractors. The panels to access the tractor's components have been relocated too, on the side rather than the top of the vehicle. They are also made from composite materials.

"This composite is very strong and will not rust, eliminating much maintenance needed for steel parts," he explains.

Dubois says the cab is a modern, ergonomic design that offers great visibility and easy operation. Full touchscreen operation also has simplified access for maintenance to the electrical system. Sound proofing helps buffer the outside noises.

The heavy chassis offers a large engine bay with no steel in the middle. Livraghi explains that this allows people to work without any obstructions in viewpoint.

The motor also boasts a technological benefit to it, as it is water-cooled, meaning that it gives the user the ability to operate via battery in very hot climates. Livraghi says only lithium batteries are used in these tractor models, as they have a better performance record than their lead acid counterparts. It can last up to 10 years and takes only 40 minutes to charge to 70 percent. He says an average run-time on a full battery is six hours to meet the needs of busy ground service providers.

"This gives the electric vehicle a very strong performance, because they are almost at the level of a diesel tractor," Livraghi adds.

In addition to design and battery life, Livraghi, a career-long GSE veteran, says that the green side of electric tractors is one that many find appealing.

"It gives the ground handler a real possibility to purchase a machine that will not be limited for an emissions level – a really big advantage," he explains.



#### **Technical Specs**

"The difference from conventional tractors, besides electrification, is the way we totally redesigned the look, practicality, ease of operation, safety and ease of internal access for servicing," Dubois notes.

He says the steering is either two-wheel, four-wheel or crab steer. The biggest advantage of electric tractors compared to conventional

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tractors is producing maximum torque of 0 rpm for effortless pushback. The two-speed transmission offers more efficiency with an inter-axle.

As far as axles go, Dubois says the units are heavy-duty, steerable Kessler axles with a 20-ton capacity. They boast hydraulic parking brakes, dry disk brakes and integrated transducers to control turning alignment.

Electric fans bank over a liquid cooling system and have 40kW capacity cooling motors, inverters and controllers.

"Our new F1-280E offers reliability, high performance, cost savings, safety and above all else, customer satisfaction," Dubois adds.

He says he is especially proud of the safety systems with these vehicles, as the limp mode will allow operators to inch forward at a very slow pace to eliminate the risk of entrapment while connecting to aircraft. In addition, an automatic fire suppression system is available through heat and smoke sensors, while the main battery is isolated for further safety measures.

#### **New Factory**

Just a one-hour drive from Bangkok, in Chonburi, the company's new eGSE factory is being built. It's located in what's called the Industrial Triangle of Thailand (Bangkok, Chonburi and Rayong). Livraghi says that the current factory for Panus Assembly manufactures not only ground support equipment, but is the largest trailers manufacturer in Thailand among other SBU, which include petroleum, military equipment and projects with GSE covering just 20 percent of the factory's capacity.

Approximately 1,200 employees are working at this plant today and the new portion is expected to create up to 300 additional positions.

The owner is in the process of building the

new, modern facility to specifically focus on the manufacturing of these electric ground support tractors. The value of the factory is \$8 million US, Livraghi says, and added that construction broke ground on Feb. 26, 2019, and will be completed by mid–2020. It will not be a completely new facility, but it will add to the capacity of the existing infrastructure, he explains.

"It's a really big change for our company, as normally these advanced electric technologies have come from Europe or the United States," he says. "This time, however, it's Thailand and the Thai people are really proud of that."

The components will originate from around the world, but the tractors will ship out fully assembled from Thailand. In addition to sales, Panus also offers rental, lease and service options for clients, so the new space is a welcome and much-needed addition for the entire company's footprint.



#### Challenges

The biggest challenge Livraghi says he sees facing ground handling providers and airports today is the little availability and cost of installing charging stations. Other equipment is becoming electric too, and he says that in the future, all will have to install chargers.

"It's a big challenge, and airports may see it as an endeavor that will end up in other expensive equipment just being stowed away," he says. "But they need to think of this as the fuel for the future, and how it will be the next generation for the ground handler."

While many airports do have battery charging stations at some capacity, Livraghi explains that its likely not strong enough to charge the 650–volt batteries installed in the electric tractor models. This is almost the same level of power used in professional mining operations, he gives as a reference point.

Livraghi says that while, yes, the cost of

buying an electric tractor is higher, the operating costs are so low that in two or three years the gap is covered. The company has developed a formula which illustrates this benefit, and even with a traditional 10-year life span for both diesel and electric, Livraghi says the gap in dollars becomes very wide, very fast.

Demand for these is also a hurdle the company is working to overcome. Livraghi explains that it really is a new product, but they have signed a trial run at Bangkok's Suvarnabhumi Airport (BKK), which is being conducted now and another to be started soon at London's Heathrow Airport (LHR). The first results will be released in early fall.

The interest in Europe and the Middle East is growing, however, as well as in Asia. He says these groups and growing numbers in North America are very careful about emissions requirements and sensitive to the positive impact which green vehicles have at their facilities.

"If a ground handler really wants to go green, this is their opportunity," he says. "We can support them if they buy the product and also offer local support in their country." GSW



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## Are Big Changes on the Horizon in Japan?

Additional players are competing with local entities for a share of the country's growing ground handling market.

By Eugene Gerden

he Japanese ground handling service industry may receive a powerful impetus for growth in years to come, thanks to recently announced plans of the national government to double the number of inbound tourists in the country up to 60 million by 2030, compared to 30 million in 2018, according to recent statements of some leading local ground handlers and industry experts.

According to officials, successful implementation of these plans will result in the growth of demand for ground handling services provided at local airports, creating conditions to attract new industry players and investors.

Keiichi Ishii, the Minister of Land, Infrastructure, Transport and Tourism, (a state agency, which, along



with the Japan Civil Aviation Bureau is responsible for the development of aviation and the ground handling industry in Japan), says the government expects the number of inbound tourists in Japan to grow up to 45 million people as soon as 2023.

He notes this growth will be associated with the need to add the equivalent of 100 new narrow-body daily flights each year for the next four years. According to Japanese aviation experts, in order to deal with such traffic, serious improvements will have to be made to the country's ground handling industry, in order to make them more prompt and efficient.

As part of these plans, a particular attention will be paid to raising the quality of provided services and expanding their range. What's more, the government plans to create conditions for the attraction of foreign investors to the sector and stimulate competition within it. The latter should contribute to a reduction in cost of the provided services in the field of ground handling services across Japan.

Currently, high tariffs for the ground handling services provided in the majority of Japanese airports remains one of the major problems of the industry, which complicates its further development.

This has also prevented the arrival of new ground handling operators to the market – particularly foreign entities, whose presence in Japan, so far, has been relatively low.

At present, the ground handling sector of Japan is mostly dominated by local companies and airlines. Among the leading players are two of Japan's largest airlines: All Nippon Airways (ANA) and Japan Airlines (JAL). Both of them provide services in the field of ground handling at the majority of the country's largest airports, including the Tokyo Haneda International Airport (HND), Narita International Airport (NRT), Kansai International Airport (KIX) and Chubu Centrair International Airport (NGO) among others.

The provision of services is usually conducted through their subsidiaries, as their customers are both leading domestic and foreign airlines. As a rule, these subsidiaries can operate in different airports throughout Japan, while their activities are not restricted by their base airports.

In terms of market structure, according to assessments of experts of the Japanese Ministry of Land, Infrastructure, Transport and Tourism, the combined share of both All Nippon Airways and JAL Ground Service, (a ground handling subsidiary of Japan Airlines) is estimated at 62 percent (31 percent apiece), which make them absolute leaders in the market, in terms of value of the provided services.

In the meantime, the share of Swissport – the third largest player in the local market – is estimated at about 12 percent of the market. At present Swissport, along with the Universal Aviation, remain the only foreign providers of ground handling services in Japan.

In regard to Swissport, the company expanded in the Japanese market as far back as 2006. That took place by the acquisition of the local ground handler ShinMaywa Ground Services. Swissport now operates in the majority of Japanese major airports, including Chubu Centrair International Airport, Narita International Airport and Kansai International Airport.

Stephan Kaeser, director and COO at Swissport Japan, says in recent years the company has significantly increased its presence in the Japanese market, which resulted in the addition of several new routes as well as some new airline customers in all five airports of its Japanese stations – among which are Fukuoka, Nagoya, Osaka, Tokyo Haneda and Tokyo Narita.

Kaeser also adds that the company



will continue its expansion in the local market within the next several years with plans to open a new station in Okinawa. That was scheduled to commence in September, 2019.

According to assessments of the Japanese Ministry of Land, Infrastructure, Transport and Tourism, at present the Japanese market of ground services is estimated at about \$2.3– 2.4 billion (USD) in value terms, however, the increase of tourism flows to the country and other factors may contribute to the growth of these figures up to \$3 billion (USD) over the



next several years.

Implementation of these plans, however, will also depend on the ability of the state plans to stimulate competition in the industry, which is still restricted by the ongoing domination of the largest domestic players, as well as strict rules for doing business in the country, not to mention high tariffs for ground handling services in the local market.

Swissport's Kaeser also adds the "potential growth can be constrained by the capabilities of a tight labor market as well as the infrastructure at airports as they work to find solutions to deal with the increase in tourists."

Kaeser, however, expresses his hopes that the current situation in the industry may improve soon, due to the recent talks between the Japan Civil Aviation Bureau (JCAB), ground handlers and airport authorities, "which are aimed at understanding the challenges and developing plans for overcoming them."

In the meantime, representatives of Univer-

sal Aviation remain more pessimistic.

"We think the current condition of the Japanese market of ground handling services is still in the early stage of development," says Shinsuke Honda, manager, strategic and marketing for Universal Aviation Japan.

"As there will be some international events like the Imperial Enthronement Ceremony (October 2019) and the 2020 Olympics Games and the strong backing of the Japanese state, we predict it will grow in near future."

In regard to local airports, their market share in the field of ground handling remains insignificant, as the majority of them have never been actively involved in the provision of such services in the past.

Despite the ongoing domination of both Japan Airlines and All Nippon Airways in the local market, many local analysts believe their activities are not associated with any threats of monopolization. This is mainly due to the fact that the number of ground handlers operating in almost each large airport of Japan, is usually varied in the range of four to five companies. The list of major independent ground handling providers includes Showtoku Corporation, Japan Airport Service Corporation, Kansai Air Cargo Center, Haneda Air Ground Handling and some others.

According to analysts, the problem of monopolization remains more pressing for some smaller airports of the country, as the level of competition in their ground handling sectors often remains low. Currently Japan has 76 airports with domestic service, including 29 airports with international service. **GSW** 



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#### THE NEXT STEP FOR Accurate Baggage Handling

RFID capabilities allow bags to be identified and tracked without the need for human intervention.

#### By Josh Smith

t takes a remarkable amount of teamwork to get a passenger's bag from check-in to the carousel at that person's destination.

Those intimately involved in the ground support industry can appreciate the amount of planning and coordination that goes into baggage handling. But a passenger only cares about whether his or her bag has successfully made the journey. So, reducing the number of mishandled bags continues to be a critical focus for airlines, airports and ground service providers.

It's understandable that the International Air Transport Association (IATA) recently endorsed a resolution during its 75th Annual General Meeting (AGM) supporting the use of radio frequency identification (RFID) technology to enhance the industry's ability to track luggage.

According to SITA's annual baggage report, less than 0.6 percent of more than 4 billion bags were mishandled last year. Yet, RFID capabilities allow bags to be identified and tracked without the need for human intervention, which could help improve accuracy further.

In a video interview from the AGM, IATA's SVP of airports, passenger, cargo and security Nick Careen explains the initiative's importance for all parties involved.

"It's necessary because we've been able to improve the processes of baggage to a certain point. In order to be able to get it to the next level, we need to track them 100 percent of the time," he says.

"It's also important because our customers want us to do this," Careen continues. "In our global passenger surveys, the statistics are compelling. Nearly 80 percent of customers are saying they want us to track the bags.

"And even further to that, there are efficiencies to be gained by being able to utilize the data that we would garner from this to improve the processes even further when it comes to handling baggage."

In addition to supporting RFID technology, IATA is also calling for the implementation of modern baggage messaging standards, which the association believes will help improve the accuracy of baggage tracking in real time across multiple points of the item's journey.

The resolution implores airlines to "transition to

bar-coded bag tags with RFID inlays and use RFID data alerts to enact processes with airports and ground handlers that prevent potential mishandlings."

Careen describes the implementation as "a passive tag that readers would pick up throughout the chain as the bags move through our airports and our aircraft."

According to IATA, RFID read rates are accurate up to 99.98 percent – significantly outperforming barcodes. IATA adds that when RFID capabilities and modern messaging standards are combined, the mishandling rate could be reduced by as much as 25 percent.

"Passengers want to arrive with their bags. And on the rare occasion when that does not happen, they want to know exactly where their bag is," IATA 's director general and CEO, Alexandre de Juniac explains, in the resolution. "Deploying RFID and adopting modern baggage messaging standards will help us to cut mishandlings by a quarter and recover bags that are mishandled more quickly."

While there are no specific timelines for the technology to become mandated, IATA anticipates acceptance rates to be high, noting in the resolution "global adoption of RFID could be achieved within four years."

"For the next steps, instead of putting hard dates on it, all of our airlines – as illustrated in passing the resolution, want to do this," Careen says in the AGM video interview. "The business case is sound and our customers want it as well, so we believe that it's not necessary to set a date."

In addition to better baggage tracking, IATA also points to improved aircraft loading and off-loading; simplified adoption of IATA Resolution 753 and enhanced data consistency as benefits for RFID adoption.

For adoption to be successful, however, IATA officials note there must be cooperation between multiple parties. That means airports must incorporate RFID technology capabilities into infrastructure and implement modern baggage messaging standards, and ground handlers need to replace manual tracking operations with RFID options when possible.

"There needs to be a lot of collaboration and cooperation as we move forward," Careen adds, also pointing out manufacturers will need to be prepared. **GSW** 

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## Cargo Needs Drive Leipzig/Halle Airport Development

A new cargo center is planned to upgrade the airport's infrastructure and improve distribution facilities.

#### By Manik Mehta

eipzig/Halle Airport's expansion plan, unveiled some time back, shows that the airport will focus on upgrading infrastructure expansion and improving distribution facilities, including a second Cargo City, at an investment tag of 500 million euros.

The Mitteldeutsche Flughaefen board – Flughafen Leipzig/Halle GmbH, Flughafen Dresden GmbH and PortGround GmbH are managed by Mitteldeutsche Flughafen AG – has approved the investment plan for new apron areas, logistics and office buildings in the northern and southern part of Leipzig/Halle Airport (LEJ) along with a second Cargo City in the northern sector. This also includes the expansion and upgrading of the existing hub of DHL, which already maintains a strong presence there.

The allocated 500 million euros, spread over the next few years, will be the largest investment package earmarked for a German airport's upgrading in the last 30 years.

Leipzig/Halle Airport, located in Schkeuditz, Saxony in eastern Germany, serves both Leipzig, Saxony, and Halle in Saxony-Anhalt. It is Germany's 11th largest airport in terms of passenger traffic, handling more than 2.57 million passen-





gers in 2018, mainly, on flights to and from European destinations.

In terms of cargo traffic, the airport is the fifth-busiest in Europe and the second busiest in Germany, after Frankfurt Airport, having handled 1,221,429 metric tons of cargo in 2018, a 7.3 percent growth yearon-year basis. The airport is DHL's central European hub and main aerologic hub.

LEJ has faced pressure to expand its existing infrastructure, particularly because of the incredible 10–fold growth it recorded in its cargo volume during the last 12 years. The growth driver has been the DHL hub, but other players at the airport also recorded healthy growth; more than 50 cargo carriers offer flights to Leipzig/Halle.

Last fall, the airport management company had also announced the expansion of the DHL hub in the southern part of the airport. This included an improved link between the two start and landing strips as well as creating new parking spaces for the aircraft of the logistic company, which wants to further increase its capacity and the number of flights. As of today, up to 60 aircraft can be loaded simultaneously in Schkeuditz; with the expansion, there will be an additional 36 parking spaces.

According to the Leipzig/Halle sources, the new Cargo City will be independent of DHL. Indeed, there are already 50 more



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cargo companies at the site and their operations are expected to grow in the future as well.

This investment is being touted as the "biggest investment package" of the Mitteldeutsche Flughaefen since the expansion of the Leipzig/Halle airport in the 1990s. The money is being provided by the airport management company.

The airport's management company has ambitious plans for the airport's growth. Indeed, the chairman of the board of management of the Mitteldeutsche Flughaefen AG and the chairman of the Leipzig/Halle and Dresden airports, Goetz Ahmelmann, has been describing LEJ as among the most dynamically growing cargo airports worldwide, offering the necessary conditions and having potential to expand its role as a multimodal hub for express and cargo traffic between Europe and the world markets. The airport, he points out, offers certain market segments, such as e-commerce, attractive operating conditions, particularly faster processing as well as a permanent readiness of customs clearance.

Germany's air-cargo sector, as members of the Aero Club Germany privately lament, also faces a challenging environment. Many German airports, for example, face nightflight bans or the protracted implementation of the European Union's custom or security regulations, while other West European airports still operate night flights and are far less restrictive.

Professor Christopher Stoller, the ACG president, points out during a recent meeting that special regulations at the national level continued to impede development of Germany's air-cargo sector. Germany's export cargo is transported by trucks across the borders and, from there, flown unim-



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peded to various destinations. The ACG has been urging the European Union to create uniform regulations for the air-cargo sector. Such a move could considerably enhance the cargo volume – not only of Leipzig/Halle but also other German airports.

LEJ is also expanding its horizons and reaching out to international markets, particularly in the Asia–Pacific region, the world's most dynamic region. With the air– port on a continuous growth trajectory in cargo traffic for over 13 years, Ahmelmann describes Leipzig/Halle as a "freight hub of international importance" with up to 1,000 cargo flights starting and landing at the airport per week. These include about 120 weekly flights to and from Asia.

DHL, which has made Leipzig/Halle its cargo hub, plans to further extend its engagement.

"There are presently plans to add another 36 parking spaces for aircraft besides the existing 60 parking spaces used by DHL. This is a renewed commitment by our customer to its Leipzig/Halle base and is pursuing a clear growth strategy from which the airport and, indeed, the entire region will further benefit," Ahmelmann says.

Ahmelmann explains that Leipzig/Halle airport, with its "ideal conditions" for aircargo and logistics companies, provides direct connectivity to the trans–European road and rail networks as well as daily freight trains linked with seaports. He points out it also offers adequate capacity reserves. Because of the airport's central location in Europe, trucks could reach other European destinations in a span of eight hours.

He further notes that the associate company PortGround offers logistics, ground and passenger clearance as well as cargo services as a one-stop service. The airport also has a 24/7 approval process for cargo flights.

"The customs service is also available round the clock which is, particularly, relevant for the e-commerce segment. All things considered, I see our airport well positioned in international competition and further on the growth path," Ahmelmann says.

At the Paris Air Show held in June, Leipzig/Halle signed a MoU with Volga-Dnepr Group (VDG) aimed at building up a long-term strategic partnership for the airport's further development as a multimodal logistics hub.

Effective at the end of 2021, the airport plans to increase the weekly flights alone with the Boeing freighter fleet from 20 to 50 by 2030.

"In addition, our companies plan an intensification of cooperation in areas such as marketing, operations and business and personnel matters. In the course of this cooperation, the VDG has been since 2006 a close partner of our airport. The Antonov 124 and IL 76TD–90VD freighters are part of our daily feature as also the Boeing 747 of AirBridgeCargo. Over and above, the associate company of Volga–Dnepr Group AMTES maintains here an MRO base for Russian as well as Western aircraft," Ahmelmann says.

Being among the group's long-standing strategic partners, Leipzig airport hosts VDA operational base, which has been functioning with assistance from Aircraft Maintenance and Engineering Service GmbH (AMTES), part of Volga-Dnepr



▲ Goetz Ahmelmann, chairman of Leipzig/Halle airport and chairman of the Mitteldeutsche Flughaefen Photo courtesy of Leipzig/Halle Airport | Ronald Bonss, photographer

Technics. For the next 30 years, AMTES will take on lease renewed hangar facilities to maintain effective and timely MRO of the group's fleet. The company plans to modernize an existing 12 An-124-100 planes to meet existing ICAO requirements. VDG is a world leader in the market of oversized and super-heavy cargo transportation.

Despite the uncertainties plaguing global trade with the ongoing US–China trade war and its impact on the cargo business, the airport's cargo volume rose by some 2 percent to over 511,000 metric tons; indeed, it achieved a record cargo volume of 110,419

metric tons in March 2019.

Ground handling is an equally important segment for the airport whose associate company PortGround has been investing in new technical equipment.

Besides capacity expansion, the airport chief says that it pays great attention to increasing efficiency, deploying new technologies and simplifying procedures.

"The environment-friendly switch from diesel to electric-powered equipment plays an important role," Ahmelmann stresses. GSW



#### ABOUTTHE AUTHOR:

Manik Mehta is a New York-based journalist, who specializes in all the aspects of aviation and logistics, including airlines, aircraft leasing, airports, infrastructure, cargo and ground handling, as well as global markets, trade and business.

## Groundbreaking Ground Power!

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## How to Support Safe Working Practices in Aviation

The nonlinear shape of aircraft and the intricate maintenance tasks that must be done without causing any damage to the surface or structure of the aircraft can create difficult working environments that could pose additional risks.

By Stuart McOnie

ircraft maintenance can be a major project involving significant engineering processes, or it can consist of minor checks and repairs between flights. However, regardless of the extent of the operation, it is imperative it is carried out as quickly and efficiently as possible to reduce any downtime for the aircraft and keep costs for the airline to a minimum.

The hazards and risks involved in aviation



maintenance work are similar to those found in construction. However, the nonlinear shape of aircraft and the intricate maintenance tasks that must be carried out without causing any damage to the surface or structure of the aircraft can create difficult working environments that could pose additional risks. Much of this maintenance work will include working at height, so it is imperative that the maintenance engineers can work, know-

ing they are safe.

Falls from height are an increasing major contributor to the fatal occupational injuries recorded by the National Census. In 2017, 17 percent (887 people) of those killed at work were a result of high level falls. Additionally, according to the Bureau of Labor Statistics, between 2011 and 2016, 26 percent of fatal work-related falls were from lower levels and invariably included falling from ladders. These statistics demonstrate that working at height can be dangerous and, if accidents occur, they can be life threatening or have a dramatic effect on the individual. All the more reason why specially designed access steps and platforms provide a safe working environment.

Further confirmation of the importance of providing a safe working at height environment is OSHA's requirement that workers on surfaces "with an unprotected side or edge which is 6 feet or more above a lower level shall be protected from falling by the use of guardrail systems, safety-net systems, or personal fall-arrest systems."

#### Types of Aviation Access Equipment

The aviation industry has a wide range of access and ground support equipment

(GSE) that enables aircraft engineers to conduct their maintenance work safely. With an office recently established in Arlington, Texas, Semmco designs, manufactures, installs and services a wide range of access steps and platforms for both narrow- and wide-bodied aircraft. The company will manufacture its entire range of products at this new facility so that it can provide products, local support and servicing to its North American clients that include Air Canada, Delta and American Airlines.

Semmco's range of modular platforms can be used across multiple aircraft. Products in the range are easy to operate and locate, limiting manual handling and improving efficiency and include adjustable handrails. Some of the platforms include a mechanism to adjust their height so that they can be used across multiple aircraft. Manufactured from quality materials, and designed with the user in mind, the products enable the engineers to work safely while also preventing potential damage to the aircraft.

"Demand for aviation maintenance in the USA is increasing due to the upsurge of airline passengers. Our USA facility will support the growth in demand for high quality, reliable, and safe MRO equipment across the region," explain company officials. "We are incredibly conscious of the welfare of workers and protecting them against the potential hazards they may face at work. We want to create equipment that will support them in what they do, enabling them to do their work efficiently but also, safely."

Providing a safe working environment is not the only focus for the design of the equipment. Some of the working at height steps and platforms need to be able to be moved around the aircraft whether it is in the hangar or airside. Consequently, all Semmco access steps and platforms are manufactured from lightweight aluminum, incorporating simple height adjustable systems so that they can be raised or lowered depending on the differing heights of the aircraft, and because they are lightweight but sturdy, can be easily moved around the aircraft, hangar, or tarmac.

"Not only does providing engineers with intelligently built equipment keep them safe from workplace risks associated with tasks such as working at height, but prioritizing worker welfare and well-being through ergonomically designed equipment improves productivity, service quality, and employee engagement, and helps to create a better safety culture," explain Semmco officials.

#### **New U.S. Facility**

The Arlington facility (18,000 square feet) opened for business in January 2019 and is central to the Dallas–Fort Worth metrop– lex, encompassing 13 counties in the state of Texas. A team of four from Semmco UK moved to Texas to set up the company, bringing their experience and knowledge to this new subsidiary. Going forward, the company will focus on recruiting local people, engineers, assembly workers and administration staff. By the end of 2019, Semmco is aiming to have more than 10 local employees working on the site.

Ultimately, the facility in Arlington will act as a hub for the U.S., providing service and equipment for customers across the country. Product development, manufacturing and repairs will all be managed and delivered from Dallas although the company will also carry out repairs at the customers' sites if required. **GSW** 



#### ABOUTTHE AUTHOR:

Stuart McOnie, Managing Director at Semmco, has years of experience with different, leading global businesses which has culminated in him being able to achieve accelerated growth through improving product design, processes and production. Since 1993, Semmco has provided innovative designs and intelligently engineered maintenance equipment for the aviation and rail industries alongside respiratory safety equipment for teams working in high-risk environments.



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## A Baggage Loading Animal

Dubbed the "Mongoose," Wollard International's TC-999 Belt Loader ensures ground crews can load baggage efficiently and injury free.

#### By Walker Jaroch

t's the age-old ground handler dilemma – how do you get baggage from the ground to the plane without breaking your back? Luckily, since 2008, ground handlers have needed neither super strength nor an exoskeleton to do the job, but instead a "mongoose."

Introduced in 2008 as the Mongoose Belt Loader, Wollard International's TC-999 Belt Loader has been helping save employees from back and knee injuries since it hit the market. Founded in the 1930s, Wollard International designs, manufactures, markets and services a broad line of aviation ground support equipment, industrial tow tractors and front-end articulated loaders/tool carriers. Their products can be found throughout the world supporting military operations as well as commercial and corporate aviation.

"The commercial aviation industry is safety

focused. Employee injuries, primarily back and knee injuries, resulting from working in cramped, confined aircraft baggage storage areas prompted improvements to alleviate those injuries through technical solutions," says Greg McDermott, president of Wollard International, on the TC-999's conception. "The TC-999 is designed for the commercial carrier, specifically, to reduce aircaft turnaround times and minimize employee injuries handling heavy and awkward bags."

Last year, the TC–999 was modernized with several key electrical and hydraulic systems upgraded to include technical innovations from the past decade and to simplify maintenance and servicing.

"The Mongoose has evolved and transformed into a technologically advanced piece of GSE. Electrical upgrades to the TC-999 based on automotive industry standards and manufacturing processes





feature colored and marked wiring, automotive electrical connectors, circuit breakers and fuses, CANBUS communication between engine, transmission, smart switches and Belt Control Unit, LED lighting throughout the vehicle – in essence, the TC–999 is similar to working on a new car. Hydraulic components have been upgraded, a reservoir that utilizes a filter, fully integrated within the reservoir tank, eliminating external valves and hoses previously used," describes McDermott.

One of the most recent upgrades to the TC-999 was the addition of a fully compliant IATA AHM913 collision avoidance system. The system monitors objects from 30 meters up to the point of aircraft interface, assuring that any and all contact with aircraft, other vehicles or personnel is avoided. Additionally, the TC-999 is available with optional baggage counting and RFID systems.

The infrared sensor system activates the brakes and reduces engine RPM, stopping the unit within 3 inches of an aircraft. Additional position sensors are engaged to confirm the handrails are stowed and the steering wheels are in the straight position to eliminate turn incursions while backing away from the aircraft.

The TC-999 is designed to be used with all commercial aircraft, and McDermott says the TC-999 has been tested with Boeing 737s and 767s and Airbus A320.

"Our engineering department designed the TC-999 using IATA aircraft standards for cargo entrance dimensions. The TC-999 is designed to eliminate one person from the baggage handling crew, freeing that person to perform more vital ground functions. And the fact that bags do not need to be thrown from the cargo door further into the aircraft will speed loading and unloading. To get the most out of a TC-999 an operator simply needs to purchase the unit. We will perform unit training upon delivery with the local baggage handlers and GSE maintenance technicians to optimize its daily performance. The TC-999 will prove itself through daily use on the flight line," adds McDermott. McDermott says that one of the key features of the TC-999 is its extending flexible belt and its 'tipper head.' The tipper head raises and lowers to adjust for ease of bag movement. The TC-999 is self-leveling, adjusting to the height of the cargo door entrance through built-in sensors. In the event of a breakdown, ramp ground crew can operate a built-in hand crank system to retrieve the flexible belt back into its storage location, allowing the unit to be moved away from the aircraft without involvement from GSE maintenance personnel.

"The TC-999 is specifically designed to bring safety, as well as time and labor efficiency, to the baggage handling task," McDermott says. "Reliability, durability and ease of service further rationalize the decision to upgrade fleet baggage handling with a TC-999." **GSW** 



#### **PRODUCT HANGAR**



#### WALK-BEHIND BELT LOADER EAST Global Solution

#### **FAST Global Solutions**

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#### P6000 BAGGAGE CHUTE PAGE GSE

The PAGE GSE P6000 Baggage Chute utilizes modern manufacturing techniques making this chute reliable and easy to install. The P6000SP Service Platform can be mounted to any baggage chute for storage of chocks, safety cones, wands and includes a secure FOD bin.

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#### CARGO PALLET TRAILER Clyde Machines Inc.

The Caster Bed Cargo Pallet Trailer offers protected lead on rollers and casters mounted in recessed cross members. Tine way pockets protect casters from forklift damage. This trailer also has towbar actuated self-adjusting brakes and recessed sides to protect customer markings.

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#### DRIVE CASTERS Caster Concepts Inc.

Drive Casters from Caster Concepts, can ramp up productivity and prevent employee injury simply by automating the process. Drive Casters are easy to install and fit on just about any piece of equipment, and allow a single operator to start, maneuver and stop a heavy load effortlessly using a control panel and tank steering.

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#### CT-4000 SINGLE CONTAINER TRAILER Par-Kan Company

Par-Kan Company's single container cargo trailer supports the transfer of LD1 and LD3 containers around the airport with ease. These container trailers can be configured for single or double ackerman steering as well as with casters or rollers. Powdercoat and galvanized finished are available too.

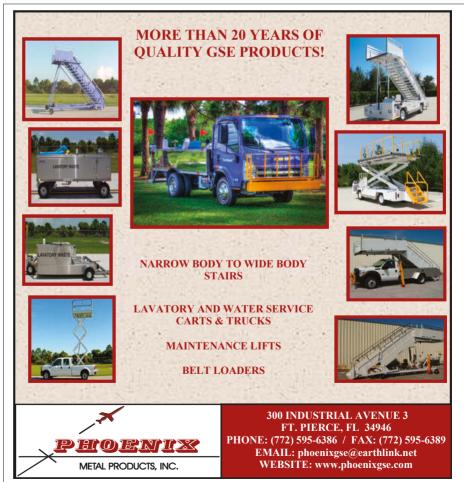
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#### MILITARY K-LOADER (KL-11000) Timsan

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The Aviramp Belt Loader is part of the company's Turnaround Kit. The Turnaround Kit comprises three specific components: an Aviramp boarding ramp/bridge, a belt loader and a set of steps, offering single use training to operate all three units. The belt loader has an additional aluminium ramp, which allows crew safe access to easily load heavy electric mobility aids onto the belt without any lifting required. The loader is also height adjustable, both front and rear, to make it versatile to use on various aircraft types. There is also an auto breaking system built into the equipment, so the emphasis is always on maintaining and improving safety and negating damage, for both the user and equipment. The remote control mechanism offers complete 3D viewing of the entire docking area, and shares the same controls with Aviramp.

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#### RIP-STOP BAGGAGE CART CURTAINS Estex Manufacturing Co. Inc.

Estex Manufacturing's FR700 Rip–Stop Baggage Cart Curtains dramatically increase the life of the curtain while decreasing the repair/replacement expense and labor cost. The unique nature of this material prevents punctures from spreading and provides handlers the opportunity to repair the curtain as opposed to replacing it like traditional curtains.



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#### BAGGAGE CART TIRE GTC North America

The GTCNA Baggage Cart Tire is sold with a two-piece split rim assembly and now is active at many commercial airports in the United States. The tire is available in black, grey and non-marking compounds. Additional features and benefits include: 5-bolt pattern steel wheel with 3.375" pilot hole; temperature and wear resistance; and low-rolling resistance for increased equipment efficiency. AviationPros.com/12387391



#### FLEET

#### Vanderlande Industries, Inc.

Vanderlande's FLEET is a flexible logistics solution. By utilizing intelligent automated guided vehicle (AGV) technology, FLEET replaces the need for fixed conveyors and sorting systems. Each individual vehicle within the fleet carries a single bag and determines the most optimal route through an airport. In addition, a vehicle can be



given priority, which helps to safeguard the delivery of bags on time. AviationPros.com/12378365



#### BAG LIFT Austral Star LLC

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#### TISABAS Ramper Innovations

TISABAS is a compact, motorized, folding conveyor system that goes into the belly of narrow-bodied aircraft and mechanically moves baggage, eliminating the need to throw heavy luggage and commodities the length of the aircraft. It reduces time and operational costs while making ramp agent jobs safer, easier and more efficient.

#### **PRODUCT HANGAR**

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JET-16 and will integrate all remote control, communication and safety detection tools developed by EasyMile as part of their driverless technology.

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#### CONVEYOR BAGGAGE TRANSPORT R.J. Design LLC

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#### SHERPA BAGGAGE AND CARGO TOW TRACTORS Goldhofer Aktiengesellschaft

The Goldhofer Sherpa Baggage and Cargo Tow Tractors are based on a compact and modular vehicle concept. The Sherpa range of tractors enables users to find the tow tractor for individual requirements – depending on drive train, engine power, ballasting, cabin form and exhaust class. Additionally, there are many options for operators'



comfort. The narrow body is stable and offers an easily accessible cabin with a good view. The Sherpa is available in three different diesel engine versions, as well as the fully electric Sherpa E, which features a maintenance–free lithium battery.

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#### BAGGAGE UNLOADER BEUMER Group

The Baggage Unloader from BEUMER Group transfers bags from a container onto a conveying line in the airport, allowing operators to slide bags onto the conveyor rather than lift them. This technique reduces the risks of operator injury and damage to baggage and enables faster, more efficient unloading of unit load devices (ULDs).

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#### This Month's Featured Equipment:

PUSHBACKS (1) 2005 FMC Model B400 35K GVW. 28K DBP Cab & AWS (1) 2007 TLD, Model TMX-150-15 33K GVW. Cab & AWS

#### DEICERS

(1) 1999 FMC, LMD2000 Freightliner Chassis, Open Bucket (1) 1999 FMC LMD2000 Sterling Chassis, Enclosed cab, First Air

(1) 2006 FMC Commander 15I Wide Deutz diesel 9,100 hours

CARGO LOADER

#### **CABIN SERVICE TRUCKS**

(1) 2000 Global, CT-22-228, High-lift, International 4700 diesel (3) 2005 Global, CT16-168, High-lift, Ford F650 diesel

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## We Hear You

The magazine, and our industry, benefits from the excellent feedback received through our annual Readership Survey.

he *Ground Support Worldwide* team recently concluded its annual Readership Survey, which is a useful tool for the editorial staff. It allows us to gear articles to the topics most important to all of you in the industry.

For example, the third annual Global Issue that you're currently reading came to fruition through readership feedback.

Survey results showed us there was a desire for additional international articles beyond the regular features that appear in each month's issue. With that, we hope you enjoyed our topics from Europe and Scandinavia to the Middle East to Japan to Southeast Asia and Australia and even Antarctica.

> We're already working on next year's editorial plans as well, incorporating additional equipment features, technical articles and other important news – per your requests.

The editorial team remains dedicated to covering the topics most critical to you, the reader. We'll be at trade shows and industry conferences keeping up to date alongside the rest of the ground support world.

But we also encourage readers to reach out to us directly with topics or concerns being faced on a day-to-day basis while manufacturing GSE, turning around aircraft or providing other services to the industry.

Ground support can be approached in so many ways, and we want to make sure you're represented in the pages of this magazine.

Be sure to stop by the *Ground Support Worldwide* booth and chat with us at inter airport Europe in Munich, Germany. You can find us in Hall C6, Booth 2016.

Thank you for reading and providing valuable feedback.

osc

#### **SOCIAL MEDIA & ONLINE CONTENT**



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