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# SUJORER 2024 OCTOBER 2024



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



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# Safety Features and Electrification on Display at GSE Expo Europe

During the three-day event, equipment manufacturers around the globe showcased their latest innovations.

he biennial GSE Expo Europe took place in Portugal, Lisbon, Sept. 17-19. More than 170 exhibitors highlighted the latest advancements in the industry.

Chief among those advancements was an increase in electric ground support equipment (eGSE) and enhanced safety features that keep personnel, equipment and aircraft safe of the ramp. I had the opportunity to speak with Swissport's global head of fleet, David Fernandez, for a special episode of the AviationPros Podcast from the event. He shared the importance of these trends for the ground handling market.

"Electrification is reaching nearly all kinds of assets," Fernandez said, noting even pushbacks, main deck loaders and other large pieces of equipment are being produced in electric units. "We really see that there are a lot of benefits along the value chain for us, for our customers, for our operators, for our technicians, for the environment as well.

"But the main challenge or the main difference that we are still seeing here is that the different manufacturers are still taking different approaches on how to electrify the units. The voltage rates of the units are still not homogeneous across the manufacturers," he continued.

"Electrification is one thing, but safety – for us, as ground handling is first," Fernandez added. "It's because, first, we want to have our guys coming back home safe. And also, we want our customers to have a seamless experience without any aircraft damage.

"Therefore, aircraft damage protection and also operators injury [prevention] is our priority."

Hopefully, you were able to attend the expo. But if you were unable to join in, we can get you up to speed with our coverage of the event. Visit AviationPros. com/magazine/76260 or scan the QR code below to view our eGuide of the event, which includes videos, podcasts, articles and other coverage of the 2024 GSE Expo Europe.

And mark your calendars for the 2025

International GSE Expo – Sept. 16-18, 2025, at the Las Vegas Convention Center. We look forward to seeing you there. **GSW** 



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#### TOP NEWS

### EZTow Autonomous Tow Tractor Deployed at GSP

TractEasy has announced the start of an EZTow autonomous tow tractor demonstration at Greenville-Spartanburg International Airport (GSP). The EZTow is now actively involved in the loading and unloading of cargo aircraft,



demonstrating its capabilities in a busy airport environment.

The driverless vehicle, manufactured by TLD and powered by EasyMile technology, operates on a one-mile route in mixed traffic, efficiently transporting cargo to a staging area. It will also operate on the passenger terminal ramp for Piedmont Airlines to assist in the baggage handling process.

"At GSP we are always looking for cutting-edge technology that makes the airport experience more safe, efficient, sustainable and affordable. We think the future for automated vehicles in the airport environment is very bright and we look forward to reviewing the results of this demonstration project to determine if the vehicle has applications for GSP," said Dave Edwards, president and CEO for the Greenville-Spartanburg Airport District.

"At Piedmont, we continue to look for new and innovative ways to drive value for American Airlines. We secure our success by embracing solutions that further improve our safe, reliable and efficient ground operations," said Brian Wemple, director planning and support at Piedmont Airlines.

"Deploying EZTow at GSP allows us to showcase the extensive knowledge and experience we've gained from global operations," said Richard Reno, CEO of TractEasy. "We are excited to demonstrate how our technology can make a tangible difference in airport efficiency and safety."

#### ASA's Global Role Recognized by ICAO

The Airport Services Association (ASA) announced it has been formally recognized by the International Civil Aviation Organization (ICAO) as an international association.



ASA has been an influential international trade body for more than 25 years, and this recognition by ICAO reinforces its role in the global aviation landscape.

"This is all very timely as ICAO has released a Manual on Ground Handling (Doc. 10121), which has become an undisputed authority on the topic and is widely used by authorities and ground handling providers. We are ready to roll up our sleeves and give ICAO all the support necessary to help the Ground Handling Task Force achieve its objectives. Not to mention that, as ICAO is

#### UPCOMING EVENTS

Oct. 22-24 NBAA-BACE Las Vegas, NV

Oct. 29-31 ASA Leadership Forum Istanbul, Turkey

Oct. 29-31 ULD Care Annual Conference Istanbul, Turkey

Nov. 11-14 TIACA Air Cargo Forum Miami, FL

Nov. 12-13 NATA Aviation Business Conference Nashville, TN

about to celebrate its 80th anniversary, we will gladly join in celebrating this important moment," said ASA director general, Fabio Gamba.

#### Harrods Aviation Earns IS-BAH Stage 3 Accreditation

Harrods Aviation announced its recent success in achieving Stage 3 accreditation with the International Standard for Business



Aircraft Handling (IS-BAH). Stage 3 is the highest level of approval within the IS-BAH program.

"We started our IS-BAH journey in 2016 and have found the implementation process to be profoundly beneficial in enhancing our safety management system. The framework provided by IS-BAH allowed us to build our safety landscape in a smart, manageable and measurable way," said Dan Holian, director of operations.

"Congratulations to the whole team at Harrods Aviation Luton and Stansted on showing their continual commitment to the voluntary implementation of the IS-BAH. As one of the early participants in the program, Harrods has progressively built on their achievements at Stage 1 to Stage 2 and have been able to evidence a positive safety culture in meeting Stage 3 registration criteria," added IS-BAH program director, Terry Yeomans.



#### Challenge Group Becomes IATA CEIV Lithium Battery Certified

Following six months of preparation, training and auditing, Challenge Group is now IATA CEIV Lithium Battery certified, in addition to its existing IATA CEIV Pharma and IATA CEIV Live accreditations previously awarded to Challenge Airlines and Challenge Handling in Liège.

"At Challenge Group, we are very concerned with detecting mis-declared or undeclared lithium battery shipments and therefore make certain that our people are trained in what to look out for." Yossi Shoukroun, chief executive officer of Challenge Group, said. "We are proud that our efforts have been officially recognized and that we may now carry the IATA CEIV Lithium Battery seal of approval as a visible demonstration to customers that their DGR shipments are in the best of hands, including the ones under UN3090 and UN3480."

"As the numbers of lithium batteries being shipped globally continues to increase, it's essential these vital items are transported safely and efficiently. IATA's CEIV Lithium Batteries was established to raise standards, spread best practice and ensure regulatory compliance across the supply chain. We commend Challenge Group for achieving CEIV lithium battery certification," added Brendan Sullivan, IATA global head of cargo.

#### Swissport Receives ISO 45001 Certification

Swissport International achieved ISO 45001 certification across its global network, demonstrating its commitment to safety and operational excellence. Lloyd's Register Quality Assurance (LRQA) has granted ISO 45001 certification to

PEOPLE

Swissport following an assessment of its Occupational Health and Safety Management System. "The safety and



well-being of our employees are our top priorities," said David Clark, head of quality, health, safety and environment at Swissport.

"Achieving ISO 45001 certification globally is a significant milestone that reinforces our commitment to providing a secure and healthy workplace for all our colleagues," Clark added.

### Vestergaard Announces Leadership Transition in North America and France

Vestergaard Company announced that after more than 20 years of dedicated service, Brock Crocker, managing director of Vestergaard Company North America, has retired. Crocker has been a key figure in driving the company's growth in both the United States and Canada during his tenure.

Taking the helm as the new managing director of Vestergaard Company North America is



Damien Le Gac, who most recently served as country manager for Vestergaard in France.

"I am excited to step into this new chapter at Vestergaard Company North America," said Le Gac. "The significant growth we've seen in recent years in North America is something I aim to build on."

With Le Gac's transition, Vestergaard Company France will see the return of Frédéric Le Breton as country manager. Le Breton, who previously held the role, rejoined Vestergaard four years ago and has been serving as sales and service manager.

"We are confident that Frédéric is the right person to take on the responsibility in France," said Stefan Vestergaard, CEO of Vestergaard Company. "His experience and leadership make him an ideal fit to lead our French operations once again. I am incredibly proud to see our staff thrive and take on new challenges within our organization."

#### Malinen to Start as Neste's President and CEO on Oct. 15

Neste announced on May 2, 2024, that the company's board of directors has appointed Heikki Malinen as the president and CEO.



He will assume the role on Oct. 15.

He succeeds Matti Lehmus, who will continue as the president and CEO of Neste until Oct. 14, 2024 and then act as an advisor to the company and its management until mid-November 2024 to ensure a smooth transition.

"Heikki has a strong track record of successfully leading international businesses and creating stakeholder value even in challenging market conditions," said Matti Kähkönen, chair of the board, Neste. "I believe that he is the best possible CEO for Neste right now and I wish him success in his new demanding role. On behalf of the entire Board, I would also like to thank Matti Lehmus, who has led the company with great commitment."

#### DoKaSch Appoints Steinhauer as Business Development Manager for Germany

DoKaSch Temperature Solutions is expanding its team by appointing Gianmarco Steinhauer as the new business development manager



for Germany, effective from Sept. 2.

In his new role as business development anager, Steinhauer will drive the expansion of DoKaSch Temperature solutions in Germany.

"I look forward to working with our customers to tackle their individual challenges and develop customized solutions that provide real added value for their cold chain logistics," Steinhauer said, regarding his appointment.

#### NEW DEALS

### Ryanair Extends Menzies Partnership Across Europe

Menzies Aviation has renewed its long-standing partnership with Ryanair for the provision of ground handling services at 10 locations across Europe. Under the renewed contract, which is set to run until October 2029, Menzies will continue



to provide ground handling services, expanding its remit to include Iași International Airport (IAS), one of the oldest airports in Romania.

This significant renewal will see Menzies manage more than 26,000 turns for Ryanair each year, building on a long-standing and trusted partnership.

"We are thrilled to embark on the next chapter of our relationship with Ryanair, one of Europe's leading airlines, expanding our ground handling services to 10 locations across Europe. It not only signifies the strength of our partnership, but also our shared commitment to delivering the safest, most secure and sustainable airside services. We look forward to continuing this partnership and expanding our services at a new location with the airline," said Miguel Gomez, EVP Europe, Menzies Aviation.



#### Air France KLM Extends Contract with WFS Across Major Airport Gateways in North America

Worldwide Flight Services (WFS), a member of the SATS Group, has renewed contracts with Air France KLM Martinair Cargo across major airport gateways in North America.

Air France KLM Martinair Cargo has renewed contracts to WFS at Chicago, Dallas-Fort Worth, Las Vegas, Los Angeles, Miami, New York JFK and Washington Dulles airports, which includes freighter services in Miami.

"We are thrilled to further enhance our partnership with Worldwide Flight Services, our ground handler agent across various stations in the United States," said Jean-Noel Rault, director cargo North America at Air France KLM Martinair Cargo.

#### dnata Secures Royal Jordanian Contract at JFK

dnata has been awarded a multi-year contract by Royal Jordanian Airlines at John F. Kennedy International Airport in New York. dnata will provide its range of passenger, ramp and baggage services. The contract expands their existing partnership in the USA, with dnata already providing its range of ground handling services to Royal Jordanian in Detroit since 2019.

"We are proud to expand our excellent relationship with Royal Jordanian Airlines into New York. Our experienced team looks forward to contributing to the airline's success by providing our best-inclass services," said David Barker, dnata's regional CEO, airport operations – Americas. **GSW** 





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Energy Storage Systems are a solution to the widespread infrastructure issues that inhibit airport electrification

BY REBECCA SCHNACK

n Energy Storage System (ESS) is a system of battery storage devices which are used to reserve energy for future use. In essence, it is a large reserve power system that is used to save energy when it is not in demand to supplement insufficient power in times of high demand.

As a permanent or temporary solution, Energy Storage Systems can be used to meet electrification goals in a timely fashion. Energy Storage Solutions are a modular solution with a broad range of capacity—anywhere from 250KWh to 4MWh. When the energy demand changes, Energy Storage Systems are able to add more storage or remove and redistribute excess power storage to other units.

While Energy Storage Systems are larger scale devices with sizes and weights that make them non-mobile, they are not grounded. An Energy Storage System can be relocated to other sites when business needs demand it. The Energy Storage System can be used to electrify an area, then moved to a second high demand area once the infrastructure of the first area catches up to the current needs. It can be used as a temporary solution to start electrification process in advance of or in lieu of infrastructure availability.

Energy Storage Systems primarily convert energy to DC for storage, before reconverting it to AC to send it back through the grid for usage at a later time. The process has a 93-96 percent efficiency. It is also possible from Energy Storage System to chargers to raise the efficiency rate and decrease the reliance of grid availability for energy usage.

Most commonly in the recent years, Energy Storage System's use lithium batteries for energy storage. Almost 90 percent of grid sized Energy Storage Systems in use today utilize lithium battery chemistries. This is due to lithium's greater power efficiency averaging around 95 percent. Lithium-ion also has a good energy density and longer cycle life. This makes lithium-ion

Almost 90 percent of grid sized Energy Storage Systems in use today utilize lithium battery chemistries. This is due to lithium's greater power efficiency. technology well suited for large scale reserve energy solutions.

One of the best applications of Energy Storage Systems is usage in tandem with renewable energy generation. Energy Storage Systems can pull power from multiple sources, reserving power generated from a renewable energy source and supplementing that limited supply by pulling from the grid as well when needed. Using an Energy Storage System in tandem with a renewable energy source mitigates the limiting need for the immediate usage of any most generated energy. This allows for renewable energy sources with





PHOTO COURTESY OF ALLEN ENERGY



generation limitations (such as solar energy's need for certain weather conditions) to be used more strategically. Rather than generating energy and needing to either immediately use it or sell it back to the utility company, with an Energy Storage System the end user is able to save and utilize that power themselves.

Energy Storage Systems are a solution to the widespread infrastructure issues that inhibit airport electrification. Using Energy Storage Systems, it becomes possible to electrify airports or terminals that do not have the infrastructure to support expansion and do not have the resources to begin a larger scale infrastructure project.

Through the use of an Energy Storage System's own internal microgrid, an Energy Storage System can store power from the grid or renewable source and run DC to DC power directly to chargers in places that are not currently outfitted with proper electrical infrastructure.

Airports with insufficient power allowances from their utility companies or governing bureaucratic institutions can reserve power from their low usage times for periods of peak energy usage. This process is known as peak shaving and has multiple benefits.

For the purposes of electric fleet expansion and other electrification goals, an Energy Storage System can use reserved energy to bolster the peak energy rate beyond any limited availability. This can allow for expanded electric fleets and charging during peak hours.

If there is no need for further electrification, an Energy Storage

on investment. Instead of artificially raising the cap for energy usage, the supplemental energy can lower the peak draw rate seen by the utility. Depending on the utility payment structure, lowering the peak draw rate can have significant financial benefits for the buyer. This is also potentially beneficial to the utility power distribution system, as peak shaving can minimize the chance of the system becoming overloaded during peak periods.

There is also the benefit of added resilience. Energy Storage Systems can be used in the occasion of a black out or brown out to keep the necessary functions running until grid power can be restored. In addition, it can be used to standardize the amount of power being supplied by the utility. Normal grid supply fluctuates as power supply changes. An Energy Storage System can be used to create a steady influx of power by reactively kicking into use when the supply fluctuates lower than the desired level. This keeps the power supply at a consistent rate and allows for chargers and electric equipment to always have the amount of energy needed.

To pursue an Energy Storage System, investigate financial opportunities regarding electrification incentives. Most places have significant tax returns or financial incentives regarding electrification which can be used for the Energy Storage System, whether that is on the local, state or federal level. This can make an Energy Storage System project much more cost effective and feasible.

Airports with insufficient power allowances from their utility companies or governing bureaucratic institutions can reserve power from their low usage times for periods of peak energy usage. This process is known as peak shaving and has multiple benefits.

System's peak shaving features can have a significant return The process towards getting an Energy Storage System must include extensive power studies to ensure that the system would be a sustainable solution for the specific application.

It is important to understand the energy needs of the site to understand what energy capacity is needed. The Energy Storage System must have enough capacity to fulfill the required usage during peak periods. There also must be enough non-peak availability to refill the Energy Storage System during non-peak periods. If the usage during peak periods requires a capacity that can not be met during non-peak periods, an Energy Storage System would not be the correct solution for that application.

Finally, the local regulations surrounding reserve power and battery storage will need to be checked before the installation of an Energy Storage System. The site location may have size and safety regulations regarding battery storage technology. These regulations may be a hurdle to installing an Energy Storage System.

Energy Storage Systems are a rapidly growing solution to an infrastructure issue that spans this industry and beyond. As renewable energy systems and sustainability goals continue to develop, Energy Storage Systems continue to be seen as a great way to reserve power within an infrastructure that is not reliable. **GSW** 

#### **ABOUT THE AUTHOR**

REBECCA SCHNACK Rebecca Schnack is an application engineer with Allen Energy, a company specializing in battery solutions for a GSE application.



#### **Cover Story**

# The Advantages and Benefits of Enhanced GSE

IATA's Enhanced GSE initiative aims to accelerate a transition to sustainable equipment with features like collision avoidance and inching technology.

#### **BY JOSH SMITH**

n an effort to make ground operations safer, more efficient and cost effective, new technology solutions are being incorporated into ground support equipment (GSE) on an ongoing basis.

Officials at the International Air Transport Association (IATA) have highlighted a number of benefits of utilizing enhanced GSE and recognized success to further encourage the ground handling industry to adopt the latest technology.

As part of the 2024 IATA Ground Handling Conference (IGHC), IATA identified three key priorities for the ground handling market – improving safety through reduced operational risk; implementing global standards; and embedding sustainability in all activities.

In line with its safety objectives, IATA officials stated their intent to reduce ground damage through a transition to enhanced GSE.

"The aviation industry is facing a massive challenge. With the number of flights expected to rise, ground damage costs could reach

IATA introduced its Enhanced GSE Recognition Program to encourage the use of upgraded GSE, such as equipment that uses anticollision technology to improve a ground handling agent's ability to control a vehicle and increase docking accuracy. \$10 billion by 2035. A key mitigation measure is the adoption of enhanced GSE to make the ramp a safer place for both personnel and aircraft," said Monika Mejstrikova, IATA's director

шZ





of ground operations. "This has the potential to reduce ground damage costs by 42 percent."

During this year's IGHC in Reykjavík, Iceland, IATA introduced its Enhanced GSE Recognition Program to encourage the use of upgraded GSE, such as equipment that uses anti-collision technology to improve a ground handling agent's ability to control a vehicle and increase docking accuracy. IATA officials add that most enhanced GSE is electrically powered, thereby delivering sustainability gains over most non-enhanced GSE.

The program follows IATA Ground Damage Report: The Case for

Hactl's Paul Cheng and Benny Siu (center), receive the Certificate of Recognition under the IATA Enhanced GSE Recognition Program at the IGHC from IATA's Massimo Cicetti (left) and Monika Mejstrikova (right).

> Enhanced Ground Support Equipment, which was published in 2022 and identified safety and sustainability benefits that could be gained from this transition.

According to IATA officials, ground handlers who integrate more enhanced GSE into their fleets above a set threshold will receive a twoyear recognition stamp.

"It was quite challenging for us to find the right path and the right way to somehow accelerate the adoption of the ground support equipment



#### **Cover Story**

that's enhanced," Massimo Cicetti, head of innovation and efficiency at IATA, said during the 2024 IGHC.

However, through the program, he noted many consistent benefits were documented as a result of adopting enhanced GSE.

IATA ran pilot programs with three organizations to measure the effectiveness of enhanced GSE and encourage ground service providers to increase the use of enhanced GSE in their operations.

"We have been able to justify it and also test it in a real operation that this solution works," Cicetti says. "Wherever the solution has been implemented so far, we have experienced no ground damage."

#### **First Recipients**

Menzies Aviation and Hactl were the first ground handlers to complete IATA's Enhanced GSE Recognition Program at various stations.

"The Enhanced GSE Recognition Program is another pillar of IATA's efforts to reduce ground damage by transitioning to Enhanced GSE fleets.



IATA's director of ground operations Monika Mejstrikova presents a certificate to Jonathan Hankin, VP of GSE safety and sustainability at Menzies Aviation, along with IATA's Massimo Cicetti.

GSE to non-enhanced GSE that exceeds a predetermined threshold receive a recognition stamp valid for two years, according to IATA.

Participation in the program is voluntary and free of charge.

IATA presented Hactl and Menzies with a certificate of recognition at the IGHC.

"Hactl is totally committed to all measures that improve ramp

"The Enhanced GSE Recognition Program is another pillar of IATA's efforts to reduce ground damage.... By Recognizing those companies leading the evolution, we aim to accelerate this critical industry transition." – Monika Mejstrikova

The transition has been slow, despite well-documented gains in safety, cost-reduction and sustainability. By recognizing those companies leading the evolution, we aim to accelerate this critical industry transition," said Mejstrikova.

The program allows participating ground handling service providers (GHSPs) to have their GSE fleets assessed. Following the assessment, those achieving a ratio of enhanced safety, and has once again leveraged technology to protect its customers' valuable assets," said Paul Cheng, Hactl executive director – operations. "We are proud to be the first ground handler in Asia to achieve this distinction, and applaud IATA's constant efforts in once again driving the adoption of best practice across the entire global aviation industry."

IATA officials estimate that the annual cost of ground damage

could reach \$10 billion by 2035 unless preventive action is taken. According to IATA, however, transitioning 75 percent of the global fleet of belt loaders, cargo loaders, passenger stairs and passenger boarding bridges to enhanced GSE, could reduce the current expected ground damage cost per turn rate by 42 percent. IAT<sub>P</sub>

IATA officials point out the IATA Airport Handling Manual (AHM) identifies the design and use of enhanced GSE as a best practice. IATA's Enhanced GSE Recognition Program is designed to complement the IATA Safety Audit for Ground Operations (ISAGO). ISAGO will include the integration of enhanced GSE into operations as of 2025.

IATA officials say the new program will be deployed in several phases. It will initially focus on assessing the three types of GSE most associated with ground damage incidents: belt loaders, ULD loaders and passenger stairs.

After the initial phase, IATA intends to expand the program to include lifting and elevating GSE units that dock at aircraft doors as well as GSE that couples to aircraft. **GSW** 



As is the case across the world, sustainability is an increasingly important issue for the aviation services industry in Central and South America.

S ustainability is a strongly felt topic in the aircraft ground handling industry throughout Central and South America, and sensitivity towards sustainability has developed significantly in recent times, with multiple best practices and initiatives implemented across the region.

Ground handling practices in Central and South America have become increasingly more sustainable and sustainability-minded in recent times as the global aviation community strives to meet its net zero emissions goals, according to officials with the UAS International Trip Support Americas team.

"We are seeing a growing interest in the adoption of electric ground support equipment (GSE) and other green technologies to reduce

Many airports require service providers to use more electric GSE, yet they may not facilitate the energy supply needed to connect the chargers.

#### **BY MARIO PIEROBON**

emissions and energy consumption. Major airports in cities like São Paulo, Bogotá and Buenos Aires are already implementing these technologies," the team says. "An increasing number of ground handling companies are developing and implementing environmental management systems in a bid to reduce their ecological footprint. This includes optimizing fuel usage, reducing waste and improving recycling practices."

As is the case across the world, sustainability is becoming an increasingly important issue for the aviation services industry in Central and South America, affirms Tomeu Mas, senior vice president for Central and South America at Menzies Aviation.

"This is driven by several factors including the increasing consumer awareness, regional regulations and global aviation standards," he says. "However, the degree to which sustainability is prioritized across Central and South America varies by country, region and organization."

David Fernandez, head of fleet at Swissport International, believes that sustainability is gaining importance in the airport ground handling industry across Central and South America, but the region faces challenges, particularly with infrastructure.



#### International

"There has been a noticeable shift towards sustainable practices driven by regulatory pressures, corporate responsibility initiatives and rising environmental awareness among consumers," he says. "While our overall fleet electrification is still in its early stages in LATAM, there has been significant progress in certain countries. In recent years, nations like Mexico, Trinidad and Tobago, Aruba, Costa Rica and Chile have made considerable efforts to introduce electric GSE, such as new electric baggage tow units (BTU), cargo belt loaders (CBL) and passenger boarding stairs (PBS). These efforts mark important steps towards more sustainable operations, reflecting a growing sensitivity and commitment to reducing the carbon footprint of the aviation industry in these regions."

#### Electric GSE

Gabriel Serrano, chief executive officer of Aeroservicios USA, observes that in general airports require service providers to use more electric equipment, yet they may not facilitate the energy supply needed to connect the chargers.

"Airports require emission reduction programs but they may also prevent the use of lower-emission fuels like propane gas. Very few countries in the region have ultra-low sulphur diesel available, which would allow



the use of lower-emission engines," he says. "Airports need to invest in infrastructure to provide the required electric charging capacity, and equipment operators need to invest more in electric equipment and chargers."

According to Mas, there is a clear divide between larger hubs in more developed countries, which tend to place significant importance on sustainability, and the less affluent countries and regional airports, which often lack the means to embrace sustainable practices.

"As a result, many airports in the region simply lack the infrastructure needed to support the rollout of electric GSE, for example. As an aviation services operator, we would welcome the ability to implement more electric GSE across the region," he says. "Recycling and waste management processes, however, are now far more sustainable than they were just a few

> years ago. Certain airports have even introduced recognition programs, rewarding ground handling companies which embrace sustainable operations."

> UAS is seeing private flights using electric cars for passenger

The degree to which sustainability is prioritized across Central and South America varies by country, region and organization.

#### Promoting social sustainability through fair labor practices, workforce training and community engagement is a very important pillar in the industry.

and crew transportation during ground operations in LATAM to reduce emissions and noise pollution.

"For instance, airports like São Paulo's Guarulhos International and Bogotá's El Dorado International have explored or implemented electric tow tractors and other equipment," the UAS Americas team says. "Some airports and suppliers are enhancing their waste management practices, focusing on recycling and reducing waste, such as separating and properly disposing of waste generated during ground operations."

#### **Pillars of Sustainability**

Efforts to improve energy efficiency in airport operations are also commonplace, and this includes initiatives to reduce energy consumption in ground operations through improved management practices and more energy-efficient lighting and facilities, the UAS Americas team highlights.

"More ground handling companies and airports are pursuing certifications like ISO 14001 (Environmental Management Systems)," the team says. "There are also increasing efforts to train staff and raise awareness about sustainable practices. Some governments and industry bodies are also beginning to support sustainability initiatives through incentives, grants or policy frameworks that encourage greener practices."

Another key point is the infrastructure development and collaboration, highlights Fernandez.

"There is ongoing collaboration with airport authorities to develop the necessary infrastructure to support electrification," he says. "Regular conversations are held to



demonstrate that what might seem like a far-off future for electric GSE is already a reality in many other stations within our network. These discussions are crucial for aligning regional airports with global sustainability standards and overcoming existing infrastructural limitations."

Aircraft ground handling sustainability in the region relies on the commitment of each link in the chain, according to Serrano.

"Few governments have incentive programs for transitioning to clean energy. Airport authorities would need to invest in facilitating energy supply, airlines would need to understand that this leads to higher operational costs, and therefore they would have to accept small cost increases from their suppliers," he says. "Also, the suppliers would need to accept that only by investing in electric equipment will they be able to close the loop and achieve sustainability."

Renewable energy integration, environmental compliance and certification and social responsibility and workforce development are other foundations of sustainability in the region, according to Mas.

"For what concerns energy efficiency and emissions reduction, our focus is on lowering the carbon footprint of our ground handling operations by adopting more energy-efficient practices and technologies," he says.

Promoting social sustainability through fair labor practices, workforce training and community engagement is an important pillar. "Key to this is upholding the highest standards and protections in relation to labor and human rights," Mas concludes. **GSW** 

#### This article was edited for length. Read the entire article at: AviationPros.com/55139228

#### ABOUT THE AUTHOR

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# Fork Truck Safety is a Core Value for Ground Support and Material Handling

Utilize appropriate training to ensure safe processes and prevent operator injuries and fatalities.

#### BY STEVEN K. FESS AND DOUGLAS E. ROEMER

**G** round handling operations at airports around the world – particularly cargo handling, use powered industrial trucks (PITs – forklifts / fork trucks) in warehouses, cargo facilities and many other areas. These are used in the course of operations, and are valuable for the movement of cargo, equipment and materials in preparation for transport.

However, every year, thousands of workplace incidents, injuries and fatalities related to powered industrial trucks occur. Fatality statistics indicate the three most common fork truck fatalities involve fork truck overturns, workers being struck by, and workers falling from fork trucks. The fork truck, the environment (e.g., warehouse, factory, tarmac, driving surface, ramp, dock) and operator actions can all contribute to fatalities, injuries and property damage involving fork trucks.

Incidents can involve property damage, including damage to overhead sprinklers, racking, pipes, walls, floors, loading platforms, electrical conduits, other vehicles and machinery. Unfortunately, most of these can be attributed to a lack of safe operating procedures, lack of enforcing safe operation and insufficient or inadequate training.

The Occupational Safety and Health Administration (OSHA) Powered Industrial Trucks standard "contains safety requirements relating to fire protection, design, maintenance and use of fork trucks, platform lift trucks, motorized hand trucks, tractors and other specialized industrial trucks powered by electric motors or internal combustion engines"[1]. Operator training requirements apply to all industries where powered industrial trucks are being used (except agricultural operations).

#### History of Forklift/PIT Standards and Requirements

OSHA revised its existing standard and requirements[2] for powered industrial truck operator training in 1999. The new provisions were intended to reduce the number of injuries and deaths that occur as a result of inadequate operator training. They apply to all industries -- including general industry, construction, shipyards, marine terminals and longshoring operations -- in which the trucks are used, except agricultural operations.

These provisions mandate a training program that bases the amount and type of training required on the operator's prior knowledge and skill; the types of powered industrial trucks the operator will operate in the workplace; the workplace hazards present; and the operator's demonstrated ability to operate a powered industrial truck safely.

It also requires refresher training if - the operator is involved in an accident or a near-miss incident; the operator was observed operating the vehicle in an unsafe manner; the operator has been determined during an evaluation to need additional training; there are changes in the workplace that could affect safe operation of the truck; or the operator is assigned to operate a different type of truck. Evaluation of each operator's performance is required as part of their initial and refresher training, and at least once every three years.

#### **Employee Training**

It is critical that every employer develop, implement and enforce a comprehensive documented PIT safety program that includes operator training, evaluation, licensure and a timetable for reviewing and revising the program.

At minimum, PIT programs should ensure that workers do not operate a fork truck unless they have been trained, evaluated and licensed, and that licenses are required for every type of vehicle the employee will operate. Training must cover all aspects of the equipment the



equipment the worker is going to operate.

worker is going to operate including the basics (e.g. when to set the parking brake) and factors that affect the stability of a fork truck—such as driving behavior, the weight and symmetry of the load, the speed at which the fork truck is traveling, the operating surface, tire pressure and type of tire, and how to perform a daily operational inspection per manufacturers (or your company) requirements.

Operators must understand handling asymmetrical loads when their work includes this activity. Operators of sit-down type fork trucks must understand the overhead guard is present to protect them from material being moved from an overhead position or debris from their load falling on them.

It is critical to ensure fork truck operator restraint systems are always used. Since 1992, fork truck manufacturers have been required to equip new sit-down type fork trucks (counterbalance) with operator restraint systems. Many manufacturers offer

restraint systems that can be retrofitted on older fork trucks. Many operator fatalities might have been prevented if the operator had been restrained. Train the operator to stay on the truck and hold firmly onto the steering wheel and lean away from the point of impact if lateral or longitudinal tip over occurs. The overhead guard and the structure of the fork truck can crush the operator's head, limbs or torso if he or she falls or jumps out the operator's compartment during a tip-over.

Train operators of stand-up style fork trucks with rear access that when a stand-up rider truck tips over, they can exit the vehicle by simply stepping backward, perpendicular to the direction of the vehicle's fall, to avoid being crushed. In this situation, the operator usually should attempt to jump clear of the vehicle, and should be trained accordingly.[3]

On numerous occasions, fork truck operators have stated - without reserve - their opinion of "what a nuisance the restraint system is and

#### **Cargo Matters**

their dislike for it." Our response was always positive, but to reinforce and emphasize the legal, company and operator requirements for their position. A seatbelt is designed to keep the worker inside the protective envelope of the operator's compartment in case of an accident, so there is no negotiating regarding seatbelt use and operator safety. At our former employer (a Fortune 100 Company), training included eight hours of classroom and interactive training, after be inspected by the driver at the beginning of each shift. If not done at the beginning of the shift, at a bare minimum, they should be inspected daily, if the equipment is used around the clock. Operators should check for any visible defects, including checking the tires, forks, seat belts, brakes, warning devices and fluid levels. An operator on a previous shift might not want to admit that they ran into something or were involved in an incident.



A seatbelt is designed to keep the worker inside the protective envelope of the operator's compartment in case of an accident.

which a written test with a minimum passing score was administered. A minimum of eight hours of hands-on driving for each vehicle along with a trainer under working conditions was required with a final review and evaluation. Finally, the driver was on probation and observation by supervision for a period of 60 days.

## Fork Truck Inspection and Maintenance

Fleet managers and operations supervisors should establish a vehicle inspection and maintenance program. Every manufacturer has recommendations for upkeep, performance and inspections (daily, monthly, quarterly, annual), but from our experience, fork trucks should

#### If Lifting Personnel – NOT Materials

Ensure only an approved lifting cage is used and is inspected. Adhere to required safety practices for elevating personnel with a fork truck. Also, the platform must be secured to the lifting carriage or forks per the manufacturer's instructions. Ideally, the platform should be surrounded by steel mesh and approved platform rails, have a secure locking mechanism and for additional safety, should be chained and locked to the lifting carriage or forks.

When lifting people versus loads, always provide a means for personnel on the platform to communicate with the fork truck operator and have shut-off power to the truck whenever the truck is equipped with vertical only or vertical and horizontal controls for lifting.

#### Working Around Pedestrians

While possibly unavoidable, separate fork truck and pedestrian traffic wherever possible. This can be done – if possible – by limiting some aisles to workers on foot only or fork trucks only, designated travel lanes in aisles, and avoid storing bulk materials and equipment in aisles where combined traffic exists. Fork truck use should be restricted near time clocks, break rooms, cafeterias and main exits, particularly when the flow of workers on foot is at a peak (such as shift end, lunch, or during breaks).

Install physical barriers (bollards, guardrails) where practical to ensure that workstations and congested work areas are isolated from aisles with heavy fork truck traffic. Evaluate intersections and blind corners to determine whether overhead dome (parabolic) mirrors could improve the visibility of blind spots for fork truck operators and workers on foot.

And finally, make the effort to alert workers when a fork truck is nearby. Use horns, audible backup alarms and flashing lights to warn workers and other fork truck operators in the area especially around blind intersections, obstacles and office area exits and entrances. Flashing lights over doors can be important in areas where the ambient noises levels are high.

The higher the volume of personnel in an area shared by fork truck traffic, the greater the risk of an accident, regardless of how diligent the efforts are to keep everyone safe. Once, an incident occurred where an office area had to be situated adjacent to a main aisle, but the offices entrances were recessed into alcoves separating them from the traffic lanes with flashing lights installed above the alcoves on the outside wall indicating when the office doors were opened to alert nearby fork trucks. Regardless of these measures, one day an employee came running out of the office so fast without paying attention to their surroundings that they ran headfirst into a fork truck that stopped for the flashing light even though the operator had stopped. In any location where sudden movement or inattention to surroundings may pose a hazard, the potential of those hazards has to be reinforced to everyone.

#### The Work Environment

Ensure that workplace inspections are routinely conducted by an individual who can identify potential hazards and conditions that are dangerous to workers and equipment operators alike. In essence, you have to consider anything or anyone that can be exposed to hazards. Hazards include obstructions in the aisle, blind corners and intersections, electrical equipment, building columns and fork truck traffic too close to workers on foot. The person who conducts the inspections should have the authority to take immediate action and implement prompt corrective measures.

Install workstations, control panels, electrical panels and equipment away from aisles whenever possible. Do not store bins, racks, equipment, pallets or other materials in aisles or at corners, intersections or other locations that obstruct the view of operators or workers.

Always enforce safe driving practices such as obeying speed limits, stopping at stop signs, moving cautiously in and around intersections (use your horn to alert personnel of your presence at blind spots and when personnel are preoccupied and blocking your travel path).

Just as important is awareness training (pedestrian safety) for all

personnel to be aware of fork truck traffic, workplace hazards and to use caution when walking around, near, or approaching a vehicle at all times. Also, it is critical to repair and maintain floors and driving surfaces, repairing cracks, crumbling edges on ramps and other defects on loading docks, aisles and on other operating surfaces.

#### From the Driver / Operator Viewpoint

"All the training in the world" is not a replacement for hands-on / practical experience on the vehicle. You, as the operator, are "the master of" your own destiny – which cannot be covered in a textbook. Safety is not "common sense," but respecting your vehicle and your co-workers. Do not rely on anyone else to do what is required for your job (e.g., installing a dock plate, trailer landing gear, wheel chocks or "dock-locks" on trailers, vehicle inspections and reporting problems promptly for correction). Make sure the driver of the transport vehicle understands your requirements for loading and unloading to assure your safety. Also verify the

vehicle you are loading will support the weight of your truck and/or the load you are carrying.

Having a semi-trailer roll away from the dock while entering the trailer with a fork truck, and rolling off the trailer onto the dock floor because the driver did not set the air brakes, the chocks were not installed, and the dock plate was set for loading (indicating the vehicle was set for the load) is a life changing experience - even if not seriously injured (yes, even experienced drivers can make assumptions - with negative consequences).

#### **Closing Thoughts**

Always remember, workplace safety should not be a "priority" - because priorities can and do change. Your company / workplace safety program should be a core value of your company's operation and culture.

Safety is not a choice, it's part of everyone's job – and it starts with you. **GSW** 

[1] 29 CFR 1910.178(A)(1)
 [2] 29 CFR 1910.178(L)
 [3] ANSI / ITSDF B56.1-2018 SECTION 5.3.22.(E) / CFR
 1910.178, FINAL RULE, SECTION III

#### ABOUT THE AUTHORS

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Steven K. Fess is a Certified Industrial Hygienist, Certified Safety Professional, Safety Management Specialist, and an AIHA Fellow. He has 44 years occupational health and safety experience, working at a Fortune 100 for 38 years in R&D, manufacturing, warehousing and logistics, facilities/ maintenance operations, and other specialized areas. Semi-retired, he is currently a member of Pine Bluff Environmental Associates, KEMRON Environmental Services' corporate safety team, and a part-time employee, consultant, trainer, and site safety representative for projects assisting numerous small businesses, consulting firms, and manufacturers.

#### DOUGLAS E. ROEMER

Douglas E. Roemer was a professional fork truck driver / material handler / powered equipment trainer and powered equipment instructor for a Fortune 100 company. During his 43-year tenure he operated numerous types and sizes of fork trucks and trained hundreds of employees in environments ranging from warehousing and rack storage to equipment manufacturing with dense employee populations. He is a previous winner of the Xerox Corporation Corporate Fork Truck Rally and the IMMS Rochester, NY Chapter In

Corporation Corporate Fork Truck Rally and the IMMS Rochester, NY Chapter International Fork truck Rally Driving competition, winning numerous awards on counterbalance and narrow-aisle vehicles. His career also included time as a Union Representative (including Sargent-at-Arms, Treasurer and Contract Negotiations team member).





Ground Service Providers

# Ice, Wind and Snow: Confronting the Elements in Ground Handling

Extreme winter weather patterns create unique challenges that must be addressed to prevent injury and ensure on-time performance.

s weather conditions change with each passing season, so too does the risk associated with aircraft ground handling. Unlike airports, airlines and ground handling personnel, the weather takes no consideration for the needs of passengers.

Wintertime in Sweden, Denmark, Finland and Norway brings unique challenges and hazards to businesses and personnel operating aircraft. Aviator Airport Alliance confronts wintertime challenges to ground handling in its operations at 15 airports across the Nordics.

As a full-range provider of aviation services, Aviator sees an increase in deicing operations during the period of cold climate and the company's corporate safety and compliance manager, Ola M. Bakk, explains how winter affects the ground handler's seasonal safety preparation.

"Winter starts early for us, with a spread of stations from Tromsø (TOS)

at 69 degrees north to Copenhagen (CPH) at 55 degrees north," Bakk says. "At TOS, snowfall is not unusual in September, but across our network, the deicing season usually lasts between October and April."

Extreme weather patterns have phenomenons such as ice, wind, temperature fluctuations and precipitation that have compounding associated risk. The winter weather creates unique challenges that must be addressed to prevent injury.

"We see an increase of extreme weather over the last few years with days when wind gusts exceeding 60 knots combined with precipitation occur almost every week," Bakk says. "That combination gives us very slippery work surfaces."

#### Decreasing the Level of Danger

To reduce the number of incidents during the winter, Aviator has elected to surpass regulatory and industry requirements for safety standards during wintertime ground handling operations. This excess to the already stringent Nordic law is based on additions to industry association framework ground operations manuals.

"We begin our policy by adding to the industry guidance provided by the International Air Transport Association (IATA) Ground Operators Manual (IGOM)," Bakk says. "We have heightened precautions and need for greater training in response to the unique challenges we face at our airports."

For its part, Aviator monitors some of the same weather reports used by pilots for flight planning, including Meteorological Routine Aerodrome Reports (METAR) and Terminal Area Forecasts (TAF) for weather planning.

"When we receive forecasts on extreme weather, we ensure that precautions described in our manuals are set into action at the affected airports," Bakk says.

Using these reports, the ground handler will equip its personnel with personal protective equipment (PPE) used in winter operations, including high-visibility vests, jackets, balaclavas and gloves.

"Over the past decade, PPE for winter operations has seen innovations in materials and design," Bakk says. "More modern materials such as Thinsulate, Gore-Tex and other high-performance synthetic insulations provide superior warmth-to-weight ratios, enhanced breathability and improved moisture management."

#### **Deicing Aircraft**

Aviator performs approximately 18,000 to 20,000 deicing operations



per season, with December and January serving as the busiest months. Removing ice from aircraft involves careful movement of machinery and personnel with caution during hostile outdoor conditions.

Bakk points out that while

aircraft align with the wind during take-off and landing, ground support equipment (GSE) is given no such provision.

The orientation of aircraft when parked can require GSE to work against the wind.

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#### **Ground Service Providers**

During winter, polar fronts of low-pressure areas often pass through the Nordics, bringing a combination of low temperatures and high winds. Given airplanes' lightweight and aerodynamic nature, these winds can push the machines, personnel and aircraft.

#### Snow and Wind Compound Problems

"Ice-covered surfaces and 60-knot winds give a really challenging work environment," Bakk says. "If it's icy, both aircraft and GSE can be moved by the wind, creating a substantial hazard for both personnel and equipment."

Glycol-based compounds are used for runway and taxiway deicing, while sand is generally used on the tarmac to treat icy surfaces. Bakk says that when combined with strong winds, Aviator team members can sometimes face issues such as the sand and snow in the areas of operation if there was not careful coordination with airport authorities.

"During heavy snowfall, the ramp can get covered with a thick layer of snow quite quickly and airport authorities will prioritize snow removal from the maneuvering areas before removing the snow from the ramp," Bakk says. "This sometimes can cause us difficulties driving our ground support equipment."

Snow can also reduce traction that, in turn, may cause issues controlling machinery – starting, turning or stopping GSE.

Besides the decrease in driving surface conditions, the snow can also lower the visibility of markings on the ground that are vital for equipment operations.

"This could make it hard to get the arriving aircraft parked at the correct position, and our staff sometimes needs to remove snow by hand just to ensure that aircraft can park correctly," Bakk says.

Bakk adds that loaders, loading belts, trolleys and dollies all need to be clear of snow prior to use.

#### **Changing Temperatures**

In some places, the temperature might drop to an extreme -40 degrees C, and ground handlers working outside need warm clothes, which lower freedom of movement and therefore adds to the time required for a task.

According to Bakk, low temperatures have a big impact on vehicles, causing decreased visibility outside frozen windows and reduced functionality of hydraulic controls.

"Sometimes the machines can stop



working entirely," Bakk says. "On our loading belts, the belt itself could get covered with ice making cargo and bags just slide on the belt."

Not every ground handling company uses the same equipment. Aviator itself has been on an aggressive strategy to convert modern equipment as part of its initiative to become carbon neutral.

"As we invest more and more into electric-powered machinery to lower our environmental impact, we are faced with the difficult task of operating electric GSE (eGSE) in low temperatures," Bakk says. "The batteries lose their ability to hold their charge, this requires good planning."

#### **Keeping Aircraft Warm**

Aircraft parked overnight require special care and attention during winter months. Some airlines will require different needs for their aircraft during winter, and ground handlers must coordinate with their airlines to provide these services during the hostile weather conditions of winter.

"In some cases, outflow valves need to be in a specific position during winter, extra chocks also might need to be used if it's windy and slippery, and in some situations, we do preventive deicing to ensure morning readiness," Bakk says.

#### Tackling the Challenges

As a proactive measure, Aviator issues bulletins and adjusts recurrent training prior to the season with winter operations as focus areas. The ground handler will schedule preventative maintenance (PM) prior to winter to ensure operational reliability under stress.

"We also have the advantage that winter operations are quite normal in our areas, and our staff is experienced to operate in this kind of weather," Bakk says. "In general, we



emphasize the importance of situational awareness and following procedures during winter operations." The conclusion of rising to the challenge of winter operations is

unnoticed, as the difficulties go unseen by the flying public. While the lack of impact on passengers is a desired outcome, the lack of awareness is something Bakk

As a proactive measure, a ground service provider may issue bulletins and adjust recurrent training prior to the season with winter operations as focus areas.

hopes to change.

"We work hard without notice, and this is thanks to preparation and training to guarantee that operations are conducted almost entirely without the passengers noticing it," Bakk says.

"When you are warm, sitting indoors and watching a snowstorm outside, send a comforting thought to those who, despite the weather, get aviation to operate without a hitch " GSW

This article was contributed by Aviator Airport Alliance

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The Electric Hydrant Dispenser utilizes a lithium ferrophosphate (LFP) battery, which requires 240 volt, 40 amp charging.

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# Supporting Fueling Applications with eGSE

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Garsite's Electric Hydrant Dispensers operate similarly to standard ICE vehicles, enabling integration into existing fleets.

ith environmental initiatives influencing the ground handling industry, more fueling service providers are seeking ways to reduce carbon emissions while working on the ramp.

To assist ground handlers with this mission, Garsite offers electric versions of its hydrant dispenser vehicles.

As electric units, the hydrant dispensers operate very similarly to standard internal combustion engine (ICE) vehicles, which allows for easier integration into existing fleets, explains Terry Bosserman, chief commercial officer for Garsite. However, users realize benefits such

#### BY JOSH SMITH

as reduced emissions and less noise by using the electric version.

"The majority of our customers are looking for reliability and good battery life," Bosserman points out. "Ultimately, they want a unit that operates as similar as possible to their internal combustion engine (ICE) vehicles."

Garsite has supplied its Electric Hydrant Dispensers since 1999. Bosserman says the company prides itself on staying at the global forefront of aircraft refueling equipment design and manufacturing. Hence, the electric vehicle was designed to support the industry's efforts to lower its carbon footprint.

Company officials note the hydrant dispenser offers a fully

self-contained and maintenance-free pressure control system, which does not require an external air source, electrical source or nitrogen source. Additionally, the all-aluminum deck and hose reel reduces maintenance requirements.

The Electric Hydrant Dispenser utilizes a lithium ferrophosphate (LFP) battery, which requires 240 volt, 40 amp charging.

"We offer several chassis options and flow rates, ranging from 450 gallons per minute (GPM), or 1,700 liters per minute (LPM), to 1,000 GPM, or 3,800 LPM," Bosserman says. "We also offer a mini dispenser with a fixed fueling platform, in addition to our standard wide-body units." Garsite's multiple chassis options includes a cost-effective narrow-body unit built on a Charlatte electric tractor.

"We have made many chassis advancements since we first launched our electric units in 1999, with the largest being improvements to the battery packs and battery management," Bosserman says. "Charging solutions have greatly improved as well. We continue to monitor chassis advancements and look for ways to further improve our electric designs."

Garsite's Electric Hydrant Dispensers support fueling for all series of aircraft up to the Boeing 777-9 and Airbus A380.

And with an integrated solar-powered system, additional benefits can be achieved.

"The integrated solar-powered system helps isolate the electrical requirements for the pumping system and extends the life of the battery pack between charges," Bosserman says.

Additional standard features include hydrant coupler, filter/monitor, deadman control, pressure controls, meter, single wrap fueling hose reel, fueling hose, underwing nozzle, wraparound style inlet hose, product recovery tank and aluminum piping.

Compliant with all NFPA 407 codes and ATA-103 requirements, the hydrant dispensers include safety features such as a manual rewind static reel with a 50-foot cable and clip, a brake interlock system, emergency shut down system and a fire extinguisher.

Currently Garsite has units in operations in multiple locations across the United States, Canada, South America, the Caribbean and Southeast Asia. Feeback from these customers has been positive, according to Bosserman.

"The electric units offer reliable operation and lower maintenance costs, compared to an internal combustion engine unit," he says. "Many customers have had to develop new policies for stationing and charging the vehicles as well as working with their local fire marshal to ensure policies are developed for daily operation."

To select fueling equipment appropriately for a given operation,



Garsite's hydrant dispenser offers a fully self-contained and maintenance-free pressure control system, which does not require an external air source, electrical source or nitrogen source.



Dispensers support fueling for all series of aircraft up to the Boeing 777-9 and Airbus A380.

Bosserman recommends specifying component brands, registration and connectivity features, flow rate, fueling platform type, and position when making a purchasing decision.

"Consider driving conditions, range and charging options when deciding between electric and internal combustion engine vehicles," Bosserman adds. "For the fueling system, consider local regulations and standards, aircraft types to be serviced and personnel familiarity."

What's more, extreme cold and hot weather can affect battery performance without the proper modifications, Bosserman advises.

"Electric chassis units will require downtime for charging, so you must look at flight schedules and travel distance to ensure electric units work for your operation."

To keep units in good working conditions, regular preventative maintenance (PM) schedules and inspections should be adhered to, in addition to battery charging.

"Selecting the proper equipment can lower maintenance costs, reduce equipment downtime and, over time, make fueling operations more efficient and profitable," Bosserman concludes. **GSW** 

#### **Product Hangar**



#### 5K AIRCRAFT REFUELER BETA FUELING SYSTEMS, LLC

The 5K Refueler features BETA's engineered frame made with aluminum for lighter weight while tanks come in aluminum, stainless steel or a combination of the two. The side modules are designed to provide maximum protection from impact using a narrower chassis and flexible joints to protect the pipework and valves. Individual control and filter modules mount directly onto the chassis rather than a subframe. The 5K Refueler comes standard with BETA's all-aluminum filter vessel. It also features an underwing hose reel with electric rewind; a single foot valve for simplicity and ease of maintenance; and more durable stainless steel pipework.

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pump with 12-volt DC motor has a flow rate of up to 15 gpm. Mechanical meter is GPI M30. The hose is ¾ inch and 25 feet long with an overthe-wing fuel nozzle. Other features include a 2" lockable, vented fill port; 1" bulkhead drain; and Sentry at-a-glance fuel gauge. Fuel type and warning decals are applied to all four sides of the tank.

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The Airfield Automation safe2go app consolidates data on airport fueling operations, verifies fueling requirements and captures an acknowledging signature from the pilot or airline representative. Aside from the enhanced safety barrier, operators benefit from faster, more comprehensive and more accurate fueling as well as data delivery.

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#### EMR4 VEEDER-ROOT COMMERCIAL-INDUSTRIAL PRODUCTS GROUP

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#### **Product Hangar**



## HEIGHT ADJUSTABLE FUELING STAND #21147 WAAG

This height adjustable fueling stand uses hydrant cart plumbing to fuel the aircraft. No stand certification is required. This stand can fuel E-175, E-190, B-737 and B-737 MAX aircraft when in the down position. In the up position the stand can fuel A-320 aircraft.

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Gorman-Rupp O Series self-priming centrifugal pumps with hydraulic motors can move the same rates of fuel as the company's power take-off (PTO) models. Model O3H1-HYD provides an alternative to PTO power requirements. Close-coupled to a hydraulic motor, they are an efficient compact solution ideal for handling aircraft fuels.

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#### WATER BARRIER FILTERS PARKER VELCON

Parker Velcon's CDF-X and ACO-X filters block water before the aircraft without using SAP. CDF-X is qualified to EI-1588 and is a direct drop-in replacement for all 2" SAP monitor cartridges. ACO-X filters are designed for the company's VF-61, VF-62 and VF-609 filter housings and similar competitors' housings. ACO-X meets



the effluent fuel quality and structural requirements of EI-1588. There are no additional parts required to install, no piping changes and no operational changes. Additionally, Parker Velcon's new WIF (Water In Fuel) is a simple, accurate, precise, affordable and reliable solution for water detection. WIF is designed to meet EI-1598 Specifications for electronic sensors used to monitor fuel contamination.

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#### MODEL 43-46 AUTOMATIC CONTROL VALVE CLA-VAL COMPANY

The Cla-Val Model 43-46 is an automatic control valve typically installed on the discharge side of a filter vessel. Its purpose is to limit the maximum flow rate through the filter vessel, preventing the filter vessel from exceeding its maximum flow rate while providing water defense shutdown capabilities. It offers redundant shutdown capability in water defense applications with the ability to shutdown hydraulically by a signal from a Cla-Val Float Control installed in the sump of the filter vessel or electronically when water is detected. This would be via electronic water detection technology offered by others. It also maintains a minimum differential across the valve to ensure positive shutdown if a water slug event takes place.

#### AviationPros.com/21159945

#### LCR.IQ LIQUID CONTROLS LLC

The LCR.iQ is Liquid Controls' newest fueling register that is a product of customer development collabora-



tion. Easy to operate, intuitive and fully configurable to automate even the most complex fueling operations, the LCR. iQ was built with the future in mind to accommodate highly sophisticated wireless automation and data transfer systems, and

is compatible with critical system sensing devices.

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#### HYDRANT CARTS WESTMOR INDUSTRIES, LLC

Westmor Industries offers customizable lines of aviation products, allowing customers to choose options as well as the configuration. The company's Hydrant Carts are towable up to 25 mph and fuel up to 450 gpm. The units utilize a solar-powered electrical system with battery storage and electric registration system.

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#### **Product Hangar**



#### RAMPSTAR **ENGINE & ACCESSORY, INC.**

The Rampstar is an EAM custom 10,000-gallon rear engine aircraft refueler chassis. Several models are available.

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# Spotlight on: Jerry Crump

#### BY JOSH SMITH

#### Ground Support Worldwide:

What attracted you to a career in the ground support industry?

Jerry Crump: Funny enough I chose 6000 Series MOS at the Marine Corps recruiting station. That MOS series encompasses all of the aviation jobs within the Marine Corps. It was not until I graduated boot camp that I truly understood what GSE was. After being hired by Swissport from ERAU Daytona Beach I saw a pushback in SFO that Wollard manufactures for the US Military go rolling by. After pointing out I knew what those were, my brief stint of about three months outside of GSE came to an end.

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

JC: To be totally honest in the last 25 years I have watched and participated in a lot of the change that has happened in the industry around green technology, and even space tourism. These changes, combined with the opportunities I've had helping customers (internal or external) find solutions that fit with their operational needs and incorporating these changes keeps me engaged. More than that, this industry has some amazing people I have developed relationships with over the years and that I would sorely miss if I ever stepped away.

# **GSW:** What role has eGSE played in advancing the ground support industry?

**JC:** Some of our fleets are very old, but that is because the old technology

worked without much more training than we got on the farm, or in our driveways. However, these older fleets are not always more reliable simply because they may be simpler technology to work on.

eGSE has gone through its own growing pains, and the learning curves have been steep at times. When I first looked at eGSE in 2008, some of those ahead of me had been dealing with DC drive systems, and the maintenance issues involving them. This translated to some reluctance toward eGSE at the time, even though drive systems were migrating to AC motors.

Now we are watching as more fleets are making the move to lithium from the lead acid technology that we have spent over two decades coming to understand. This transition drives changes to both engineering and design due to performance advantages. Where some systems had rapid energy capture and discharge, or extra battery capacity designed into them for lead acid they may be able to reduce capacity and complexity by swapping the battery type to lithium.

New technology such as lithium batteries do bring advantages, but it also comes with a need for possible change in infrastructure, training and operational processes. In the end eGSE seems to be driving some additional upfront cost due to the need to support it such as infrastructure but in the end, it is cheaper to operate, more reliable, and healthier for the operators.



Job Title: Director of Sales / Marketing Company: Wollard International

Years in Ground Support Industry: 25

Years with Current Company: 1.5

#### **Previous Employers:**

United State Marine Corps, Swissport USA, Somerset Capital, Virgin Galactic, Webasto Charging Solutions, Green Cubes Technology

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

JC: The change from internal combustion motors to electric has been the largest change across the industry. During my time at JFK, almost all our engines had little to no emission controls, and now we are just a short time away from having zero emission ramps. This can only be made possible by GSE manufacturers making equipment that can take the place of the internal combustion equivalents, airport infrastructure investments and the adaptation of new technology by the GSE community. **GSW** 

This article was edited for length. Read the entire interview at: AviationPros.com/55134410



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