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APRIL 2017

Ground Support

WORLDWIDE

EQUIPMENT – SERVICES – HANDLING

LEKTRO:
2017

PRODUCT LEADER

OF THE YEAR



GROUND SERVICE PROVIDERS
Airports and Ground Handlers
Need Each Other

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How the Middle East is Handling
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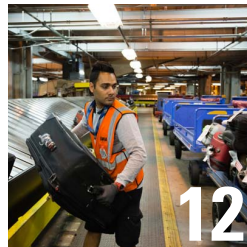
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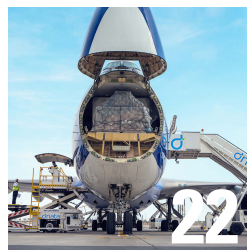
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Let's Be Social

There are many ways to connect with *Ground Support Worldwide* and *AviationPros* online. Have you found us on your favorite social media platform?

know that we all use social media on a regular basis, if not daily, and there are many different social media platforms out there.

Hopefully you have noticed (and have begun following) *Ground Support Worldwide* on these social media outlets. We are using these platforms to inform you about what is in each issue of the magazine as well as sending news out regularly throughout the work week.

If you would like to connect with us socially, at the bottom of this page you will find URLs for our Facebook, Twitter, and LinkedIn pages for *Ground Support Worldwide*. You can also find us on Instagram by searching GroundSupportWW.

In addition to the *GSW* social media platforms, we have a whole set of accounts for *AviationPros* that include Facebook, Twitter, and YouTube. These accounts also include valuable industry insight from our sister publications *Aircraft Maintenance Technology* and *Airport Business*. Links to these accounts can be found on page 3 at the bottom of the table of contents.

Getting information out there is what we do best and reaching you in a way that makes sense for you is why we use as many information outlets as possible.

There is no plan currently for the magazine to use Musical.ly, but my daughter has informed me that is a really cool one. Who knows? Maybe someday, it may be rather entertaining to see the GSE industry lip-synching their favorite songs.

If there is a social media platform that you use and you'd like to engage with *Ground Support Worldwide* or *AviationPros*, please reach out to us so we can continue to connect with the industry in as many effective ways as possible.

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► TOP NEWS

Tronair, Inc. Acquires Columbus Jack/Regent and GSE Spares

Tronair, Inc., a portfolio company of Golden Gate Capital, announced the acquisition of Quality Products Inc., the holding company of Columbus Jack/Regent and GSE Spares. Financial terms of the transaction were not



disclosed. Columbus Jack is the largest

supplier of hydraulic jacks to the U.S. Defense Department and also services commercial, business and civilian aircraft. GSE Spares provides a complete line of ground support equipment, spare parts, adapters and accessories to the U.S. military.

"Tronair is known worldwide as the leading manufacturer of ground support equipment for the aviation industry. We see the additions of Columbus Jack and GSE Spares as a natural and positive extension to Tronair's strategic plan," said Harley Kaplan, president and CEO at Tronair. "Both companies have outstanding product lines and reputations as aircraft GSE manufacturers, and when added with the product breadth of Tronair, we will be able to further penetrate strategic markets and fulfill our customers' needs."

IATA Cargo Handling Manual will Help Promote Standardization

The International Air Transport Association (IATA) announced, during the World Cargo Symposium in Abu Dhabi, the launch of the IATA Cargo Handling Manual (ICHM) to help airlines and cargo handlers work together more effectively while improving safety and efficiency in air cargo operations.

The ICHM is the first complete set of standards covering the operational activities of all stakeholders in the cargo handling supply chain. It was developed in consultation with Air Carriers and Cargo Handlers, based on industry best-practices, the Cargo-iQ Master



Operating Plan (MOP) and international regulations and standards.

"Cargo operations are performed at thousands of airports, by hundreds of handlers. With that number of parties involved, ensuring that global standards and best practices are being observed at all times is a constant challenge. The ICHM is a single reference source that will help promote global consistency and harmonization of cargo handling procedures, thereby facilitating the movement of goods safely, securely and efficiently while contributing to a reduction in air freight logistic costs," said Glyn Hughes, global head of cargo, IATA.

Unisys Introduces Digistics Cargo Management Solution

Unisys Corporation has launched Digistics by Unisys, a holistic and integrated cargo logistics solution that allows carriers to streamline freight management and improve operational efficiencies. Digistics enables air carriers to choose from a suite of offerings or select the specific cargo services they need. The system features cross-platform analytics allowing carriers to view past, present and forecast data for enhanced operations.

Digistics is a data-driven system that automatically records each transport and delivery checkpoint in the air cargo value chain. This provides airlines with real-time visibility of their shipments and gives carriers the ability to track and trace high-value products quickly and efficiently for an improved end user experience.

"Digistics is a business led solution for the air cargo industry that features a modern cloud-based architecture that allows any carrier to easily adapt the solution within their own enterprise system," said Dheeraj Kohli, vice president and global head of travel and transportation for Unisys. "We are proud to be the first in this industry to offer catalogue-based cloud services. Carriers can now select and subscribe to the features they need for their business operations, while the advanced level analytics will allow carriers to identify the factors to help them sustain efficient routes, as well as improve processes on less efficient routes."

► Upcoming Events

May 2-4
NBAA Maintenance Conference
West Palm Beach, FL

May 7-10
AAAE Annual Conference & Expo
Long Beach, CA

May 9-10
Aviation Festival Americas
Miami, FL

May 11-12
CAPA Airline Leader Summit
Dublin, Ireland

May 21-24
IATA Ground Handling Conference
Bangkok, Thailand

June 4-6
AirCargo 2017
Orlando, FL

June 6-8
NATA 2017 Aviation Business Conference
Washington, DC



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dnata Heathrow Receives ISAGO Registration

dnata secured IATA's Safety Audit for Ground Operations (ISAGO) registration for its Corporate Headquarters and London Heathrow station. This is the 10th station in dnata's ground handling operations to receive this certification. The other ground operations which are also ISAGO-registered are Dubai (DXB and DWC), Geneva, Zurich, Manila, Singapore, Sydney, Melbourne and Brisbane.

ISAGO is an internationally-recognized system for assessing the operational management and control systems of an organization that provides ground handling services for airlines.

"Safety has always been a guiding principle at dnata and is at the heart of everything we do. This certification is a validation of our unwavering commitment to ensuring the safety and security of our staff. Investing the time and effort in ensuring compliance with ISAGO standards reflect our diligence to continuous improvement in safety standards. It also highlights our goal to operate within globally recognised industry best practices," said Gary Morgan, CEO dnata UK.



BEUMER Group's CrisBag Totes Approved by the TSA

BEUMER Group became the first vendor to be certified as meeting TSA requirements for in-tote screening of baggage. CrisBag totes enable in-tote screening that, when used with Morpho Detection's CTX 9800 DSi explosives detection system, meets the detection and false alarm rates for explosives specified by the TSA. The certification applies to U.S. airports and for U.S. pre-border clearance.

"Because each checked bag remains inside the same individually controlled tote from check-in and early baggage storage to screening and discharge, the CrisBag system provides 100 percent tracking and traceability at every stage," said Klaus Schäfer, managing director, BEUMER Group A/S. "By collaborating with Morpho Detection and leveraging the imaging and operational capabilities of CTX 9800, BEUMER Group looks forward to bringing the benefits of in-tote screening and the CrisBag system to airports throughout the U.S."

Although tote-based systems have been accepted by airports throughout Canada, Europe, Middle East and Asia, it is a relatively new concept for North American airports.



ProFlo LATAM Facility Opens in Columbia

ProFlo Industries LLC has opened a new ProFlo LATAM facility located by the International Airport in Medellín, Colombia.

This facility will allow the company to offer more value, service and support to Latin American customers. The location is part of ProFlo's continued expansion, seeking to offer additional services to the industry while generating jobs throughout the United States and Latin America.

Southwest, AirTran Earn Top Customer Experience Ratings for Airlines

Southwest Airlines and AirTran deliver the best customer experience in the airline industry, according to the 2017 Temkin Experience Ratings, an annual customer experience ranking of com-

panies based on a survey of 10,000 U.S. consumers.

Southwest Airlines took the top spot out of the 10 airlines included in this year's ratings, earning a score of 73 percent and coming in 90th place overall out of 331 companies across 20 industries. Southwest has earned the highest score every year since the Ratings began in 2011, with the exception of 2015 when JetBlue came in first.

The ratings of all airlines in the 2017 Temkin Experience Ratings were Southwest Airlines: 73 percent, AirTran Airways: 70 percent, Virgin America: 69 percent, JetBlue Airlines: 69 percent, Alaska Airlines: 68 percent, United Airlines: 66 percent, US Airways: 65 percent, American Airlines: 62 percent, Delta Airlines: 62 percent, Spirit Airlines: 50 percent.

The average rating of the industry improved by nine percentage-points between 2016 and 2017, going from 56.4 percent to 65.6 percent. To generate these ratings, Temkin Group asked 10,000 U.S. consumers to evaluate their recent experiences with a company across three dimensions: success, effort and emotion. Temkin Group then averaged these three scores to produce each company's Temkin Experience Rating.

► PEOPLE

Luzius Wirth Appointed CEO Swissport UK and Ireland

Luzius Wirth has been appointed CEO for Swissport UK and Ireland. Wirth joined Swissport in 2012 and has since taken up various prom-

inent leadership roles within the group, and since 2014 he has held responsibility for Swissport's Group Services. From June 2017, his new tasks will include a focus on further developing and expanding the regional organization, as well as driving



customer-orientation and sustainable growth across the UK and Ireland.

He replaces Tommy Watt, who will retire from his daily activities by the end of July 2017.

"The UK and Ireland are important markets for us. We are committed to ensure a smooth transition and to continue to deliver services to our valued customers with reliability, consistency and quality," Eric Born, group president and CEO Swissport International Ltd said. "We all wish Tommy only the best for his future."

Garcia Named Chief Information Officer at WFS

Pedro Garcia has joined Worldwide Flight Services (WFS) as Chief Information Officer, based in Paris.

Prior to joining WFS, Pedro spent 10 years with Swissport, including the last five years in the role of

Vice President, Cargo Information Systems.

At WFS, he is responsible for the development of IT solutions that will support WFS

and its customers as WFS

continues to grow its global airport services portfolio.

"I am delighted to welcome Pedro to our executive team," said Craig Smyth, CEO of WFS. "Technology is going to play an important role in our plans to grow WFS. We want to standardize our applications to optimize our IT investment. We also see technology as a lever to add value to the company as we move to the next level across our ground handling business. This requires a clear focus on governance and business intelligence to ensure the whole Group is heading in the same direction, is fully coordinated and achieving the highest levels of efficiency."



► NEW DEALS

TICO to Acquire Vanderlande

Toyota Industries Corporation (TICO) has signed an agreement to acquire Vander-



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lande – a global market leader for value-added logistic process automation at airports and in the parcel market, as well as being a leading supplier for warehouses – from the company's current owner NPM Capital.

The acquisition has been fully approved and supported by Vanderlande's Supervisory and Management Boards, and Works Council. Vanderlande will retain its name and corporate identity, as well as continue its operations as a standalone entity from the same locations worldwide. The transaction signifies TICO's strategic ambition to increase its presence in automated material handling.

As Managing Officer for TICO and the designated Chairman of Vanderlande's Supervisory Board, Norio Wakabayashi says, "Vanderlande complements our current offering by providing a full range of

integrated automated material handling solutions. We also see a strong strategic match in our extensive sales and service networks. This acquisition creates even better global coverage across almost all of the markets that have a requirement for automation."

Unilode to Manage the ULD Fleet of Saudia and Saudia Cargo

Saudia and Saudia Cargo have awarded the management of their containers and pallets to Unilode Aviation Solutions, a global provider of outsourced Unit Load Device (ULD) management and repair solutions, with operations set to start on April 1.

Unilode will set up a regional ULD management office in the airlines' hubs in Jeddah and Riyadh, and will operate



a repair shop in Jeddah for the maintenance and repair of ULDs and galley carts, supplemented by Unilode's network of 30 repair stations. As an additional service, Unilode will undertake the management of ULD accessories.

"We are pleased to announce such a major ULD management agreement, which is a great sign of our business continuity and growth following the change of ownership of our company and our rebranding from CHEP Aerospace



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Solutions to Unilode Aviation Solutions,” Unilode president and CEO, Dr. Ludwig Bertsch said. “Middle Eastern carriers are the world’s fastest growing airlines and we are committed to support our customers’ growth plans which may include the purchase of additional assets and opening of new stations in our ULD management and repair network. We are confident that our flexible and customer-centric way of doing business will live up to the expectations of Saudia and Saudia Cargo and that our partnership will bring significant benefits to all parties.”

Hong Kong Airlines Acquires SATS HK and AAT Shares for Ramp and Cargo Handling Services

Hong Kong Airlines, through its wholly



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owned subsidiaries, has entered into Sales and Purchase Agreements regarding the acquisition of 51 percent shares of SATS HK Limited and 35 percent shares of Asia Airfreight Terminal Company Limited (AAT) respectively, subject to the approval from regulatory authorities and third party consents.

More cooperation between Hong Kong Airlines and the two companies is expected in the future, which will support the airline’s increasing ground and cargo handling needs.

“As an acclaimed full-service airline firmly rooted in Hong Kong and the second largest carrier at HKIA, Hong Kong Airlines is committed to progress in step

with Hong Kong,” Wang Liya, president of Hong Kong Airlines said. “We have experienced robust growth since our establishment in 2006, as demonstrated by our continuous growth in passenger volume which reached 28 million over the past decade, translating to a strong compound annual growth rate (CAGR) of more than 20 percent. The acquisitions of SATS HK and AAT will not only bring synergies to our increasing scale of operations and establishments at the HKIA, they also represent important milestones in the evolution of our company to become a globally-recognized carrier. We believe the acquisitions will further step up our efforts in strengthening Hong Kong’s position as the international aviation hub.”

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Avfuel Network Welcomes Temple Airport

Avfuel Corp. welcomed Temple Airport (Draughton-Miller Central Texas Regional Airport) to its network of branded fueling locations.

"The addition of Temple Airport to our branded fueling locations adds great value to the Avfuel Network," said Mark Haynes, Avfuel's vice president of sales west. "It's an upstanding location that's dedicated to serving the vast array of avi-

ation segments our industry has to offer with friendly service, and just the kind of location our loyal flight departments are looking for in the heart of Texas."

BGS and airBaltic Extend Ground Handling Cooperation in Warsaw

BGS, an international provider of ground handling and aircraft fueling services, has prolonged its deal with airBaltic – a low-cost carrier (LCC) from Latvia. The agreement covers ground handling services provided at Warsaw Chopin International Airport (WAW).

The extended ground handling contract strengthens a long-standing partnership between the companies spanning across six airports in Central and Eastern Europe.

"Maintaining the trust of the biggest



airline in the Baltics in the competitive environment of Warsaw airport is a clear proof of the quality of our services. This further strengthens our positions in the Polish market as well as gives us the confidence and motivational boost for the expansion of our operations," said Linas Geguzis, chairman of the board at BGS.

BGS, part of Avia Solutions Group, provides 250,000 tons of aviation fuel and handles more than 2.4 million passengers.

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ITW GSE Concludes 2016 with Key Contracts

The company reports its common platform design has been a fit for both domestic and international airports.

ITW GSE announced it shipped a number large-scale orders to multiple major airports in 2016. In total, the company reported that more than 2,500 pieces of equipment were shipped from its manufacturing plants in Palmetto, FL, and Odense, Denmark.

The majority of the units supplied by ITW GSE are based on the company's common platform design, which equips the units with a common icon-based user-interface. This platform has been implemented into ITW GSE's line power and engine driven product portfolio.

"Therefore, airport staff already familiar with one ITW GSE product can easily operate another ITW GSE product," explained Poul Elvstrom, vice president, global sales and marketing. "The common design limits the number of human errors during operation and makes product training much simpler. Other advantages are the quick service and repair, and the spare part commonality that reduces stock requirements."

ITW GSE Hobart installed 44 pieces of its 2400 GPU and two 3400 PCA 210 units at Newark Liberty International Airport (EWR) in addition to 14 2400 Power Coils at George Bush Intercontinental Airport (IAH) in Houston and 24 2400 Power Coils at Los Angeles International Airport (LAX).

Internationally, ITW GSE secured a contract for 52 pieces of 400 Hz ground power units and related equipment, which are to be installed under passenger boarding bridges at Dubai Airport.

"The GPUs will mainly be used to deliver electrical power to aircraft from Emirates Airline while parked on the apron with their onboard electrical supply switched off due to environmental concerns," Elvstrom said.

Additionally, ITW GSE AXA Power was awarded a contract to deliver 400 Hz GPUs and Pre-conditioned Air equipment to Istanbul New Airport as well as 2400 Power Coil and PCA 3400 units to locations in Pakistan and Vietnam.

ITW GSE includes the AXA Power, Hobart, Houchin, J&B Aviation and ITW GSE Military brands and has manufacturing locations in Palmetto, FL, and Odense, Denmark.

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Airports and Ground Handlers Need Each Other

Ground service providers and airport representatives need to communicate, address challenges and back one another to create an environment built on mutual trust and teamwork.

By Jen Bradley

It's like peanut butter and jelly, Sherlock and Watson; completely different, but completely dependent on the other for a great success story. Airports and ground handlers need each other.

It's a relationship that is so intertwined and yet, complex. They bring unique qualities and services

to their customers, the same people expecting a smooth, incident-free experience as they enter the airport doors.

While the names of the airport and ground handler are also different, in the customers' minds, they are the same. It is the overall package that

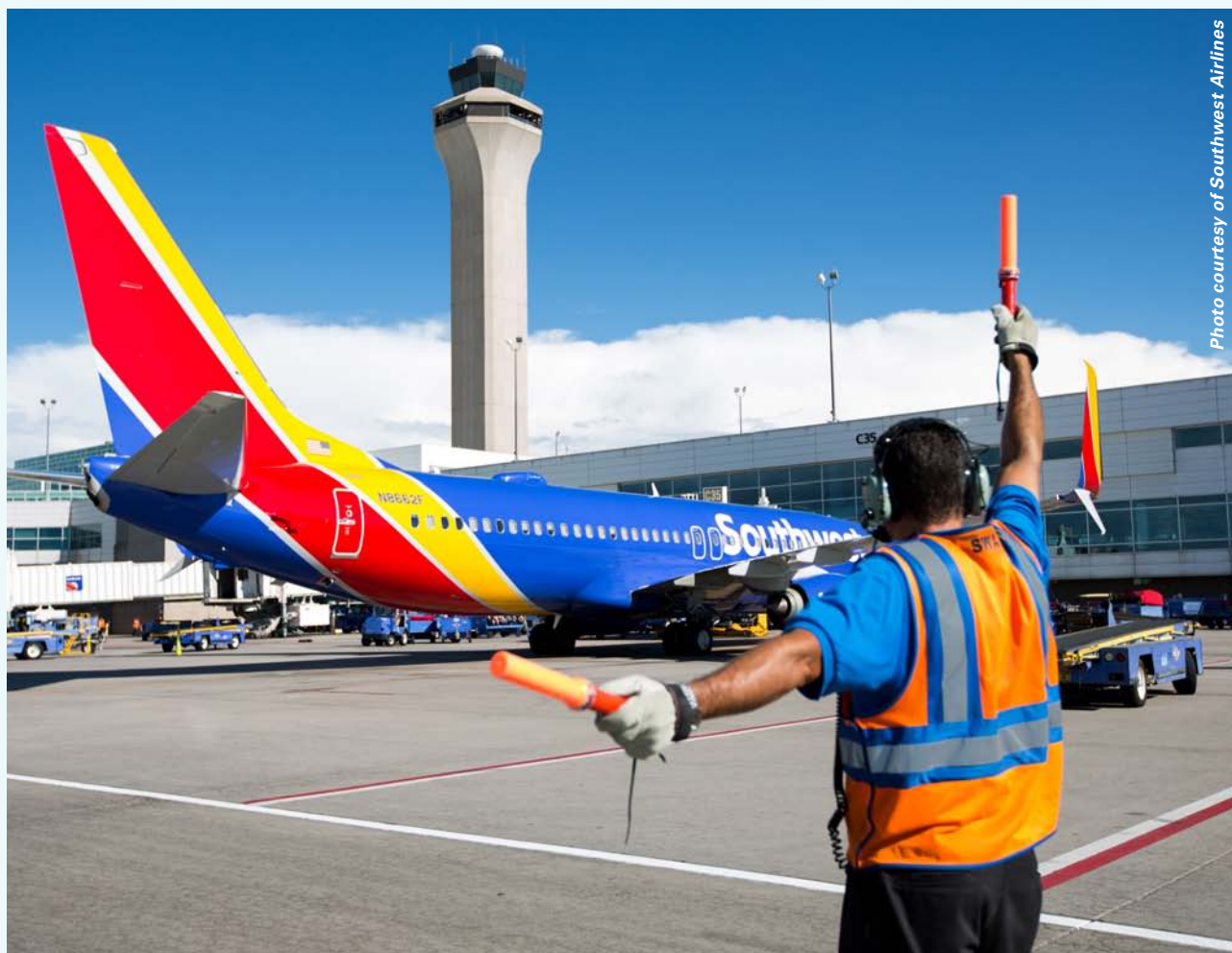


Photo courtesy of Southwest Airlines

matters, and to make that work, airports and ground handlers need to communicate, address challenges head-on, but most of all, have each other's backs in an environment built on mutual trust and teamwork.

A Common Mission

"Southwest Airlines and the airports depend on each other for our partnership to be successful," echoes Chris Johnson, senior director of ground operations at Southwest Airlines. "It takes both entities. We have a common goal to provide a safe environment and customer-friendly travel experience for our passengers."

Terry Blue, vice president of operations at Memphis International Airport (MEM), says it is essential for airports and ground handlers to recognize that passengers have options and they will go to a different carrier, or even airport, if they are met with inconsistent service. At MEM, the ground support companies are tenants, but operate under an operating permit which says they must abide by MEM's rules, regulations and standards of safety.

Johnson, who has worked in more than 10 airports during his career with Southwest, says the close relationship the airline continues to have with its peers exists because they don't allow relationships to become strained.

"It's in our best interest to make sure the customer's experience is great," he notes, adding that when a customer buys a ticket on a specific airline, it's that airline whose reputation is at stake.

Blue agrees, and says the airport recognizes that their reputation is on the line too, especially in today's competitive flying environment where airports and airlines want to be the top choice. As an example, Blue says one of his colleagues no longer flies with a specific airline because of a challenging experience many years ago.

"It certainly does last," he says of a company's impression. "She uses that in her daily job to remind her of the constant mission to take care of the customer first. If you would talk to many of the folks that I work with here, they all understand that message."

Johnson says at Southwest they use the word "hospitality" because it reflects the

highest level of customer service.

"It's more than just a transaction," he says. "It's how we treat our customers."

This message is carried to both employees in the airports and those involved with the aircraft itself. He says the airport teams really focus on ways to improve services such as baggage handling and safety, and encompass all these things into a very professional standard of operations for Southwest as a whole.

There are Challenges

Johnson of Southwest explains one of the things that must be balanced – and something that takes effort – is the airport's standards versus the Southwest standards of operation and customer service. He understands the airport must remain a neutral entity because they are working with many carriers and yet have their own standards.

"They might just not be able to honor the things you want," he says from the airline perspective. "They do a really good job of

Perception is something **all air travel entities** must manage, and this is where **teamwork** becomes so vital for **success**.

not playing favorites."

He says that at all airports, Southwest employees must be badged, whether working inside or outside. Driving rules, deicing policies, etc., vary from location, as does the way an airport administers its policies.

There are also differences in working with smaller airports and larger facilities, Johnson explains. The policies and procedures may be similar, but the message must also be expanded to a much larger group of staff say at Memphis versus a regional airport.

In order to keep all these fine lines in order, Southwest actually employs a sep-

arate Standards Department, tasked with ensuring all the policies and procedures at each airport are up to date, known by the station managers and then followed. With 101 airport clients, this is no small task, but an essential one for Southwest to maintain a high level of service.

Ben Leischner, airline scheduling manager at Seattle-Tacoma International Airport (SEA), explains that at Sea-Tac, safety requirements are very proactive and more conservative than any of those put in place by the airline partners.

"Due to recent litigation for accidents and injuries on the ramp, airports have gained a liability for maintaining safety on our ramps," he says. "One aspect of this is defining standardized approaches to the use and allocation of ramp space."

A unique challenge for Memphis, notes Blue, is the short travel distance from some of the gates' jet bridges to the baggage carousel. He says the first person coming off the plane could find themselves settling in for a 20-minute wait and that it's entirely possible that when the bags arrive, the last person on the last row of the airplane is still onboard.

"Perception is something we have to manage," he explains.

There is no 'I' in Team

Perception is something all air travel entities must manage, and this is where the teamwork becomes so vital to success.

MEM's Blue says that during his career as an airport executive, both in Milwaukee and Memphis, he's been blessed to see ground handlers really take on a teamwork approach.

"They recognize we are all in this together; we will all succeed or fail together," he says.

Leischner agrees, he says that Sea-Tac has always utilized a highly collaborative approach of being transparent as well as open-minded when enacting policies that affect air carriers and the way their operations function at the airport facilities.

"It is a constant and open line of communication, as we continue to have a record number of operations here at Sea-Tac, which is now the ninth busiest airport in the country," he notes.

Johnson says he started with Southwest as a ramp agent, then has worked his way throughout the company in several different positions, including leadership roles at the airport stations. This background has given him a lot of time to work with

airport executives, serve on boards and is the reason why he is confident in saying that the relationship must be a true partnership.

"We have a common goal of making sure we're safe, the customers are safe and they

are taken care of while traveling," Johnson explains.

He says this was proven to him the day he was working in a major airport and the baggage handling system went out of service during a busy travel period.

"The airport really stepped up and assisted us in every way possible," Johnson boasts. "We actually had to move bags through the airport in the same areas passengers traveled in. The airport extended out all their employees and assisted us in ensuring we kept operations in those terminals while transporting bags too."

Southwest checks the most bags of any carrier, 20 million a year, according to Johnson. Of those, he says 99.8 percent arrive as scheduled. So that baggage handling system malfunction was a major issue – and would be for any airport, airline or ground handler.



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Johnson says the teamwork that day spoke to a true partnership, not playing favoritism and working toward a common goal.

Blue says there are days when an airport deals with these irregular operations, and another challenge is when diversions from neighboring airports are being sent in.

"You need true teamwork to tackle airplanes landing left and right," he says. "You're definitely going to need your ground handlers because they will make or break you."

Maintaining Communication Matters

In order to ensure passengers have a positive experience, Southwest's Johnson says communications must flow through multiple levels and engage with the airport at all times.

Southwest headquarters has an Airport

Affairs Department, which communicates with airport leadership on items such as rates, charges, leases, space, etc. Then, at the local level, Southwest has leaders at each airport location.

"They are the grassroots people who on a day-to-day basis interact with the airport entities, attending regular meetings and assist in ensuring our spaces are adhering to the standards of the airport at the local level," Johnson explains.

Blue confirms this from the airport perspective and says that while the airlines hire all ground handling resources for MEM, the station manager attends meetings and is responsible for all airport standards being met.

Each month, MEM has a Customer Service Action Committee meeting. Blue says that while operational issues are addressed, of course, there is a deliberate focus on

customer service in that meeting of station managers for all airlines and ground handling companies.

Like any other business, he says the one between ground handlers and airports is about relationships.

"It's about having that 1:1 relationship and knowing how to call, when to call and being certain they will jump in and help – all recognizing that as a team we can accomplish so much more," Blue concludes. **GSW**

▶ ABOUT THE AUTHOR:



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2017 PRODUCT LEA



By Josh Smith

By upgrading major components while utilizing its existing chassis, LEKTRO was able to increase its electric towbarless tug's capacity to 280,000 pounds, providing the ability to handle regional and narrow-bodied aircraft up to the Boeing 757.

ADER OF THE YEAR



LEKTRO

In order to accommodate the handling of several aircraft, LEKTRO Inc. has taken steps throughout the years to create versatile pushback tractors that can handle a wide range of regional and narrow-bodied aircraft.



The Warrenton, OR-based company was challenged further to provide its customers flexibility when airlines chose not to abandon the use of Boeing's 757. But LEKTRO acted quickly, and in one year brought the AP8950SDB-AL-250 tug to market and received OEM certifications in that same time frame.

For the upgraded electric vehicle's range of operation and other impressive features, LEKTRO has been named the *Ground Support Worldwide* 2017 Product Leader of the Year.

Humble Beginnings

Established in 1945, LEKTRO has produced emission-free electric vehicles for decades.

"We built electric before electric was even cool. So electric has been a part of our core product from Day 1," boasts company president Eric Paulson, whose father Wilt founded LEKTRO. "We had to convince people to use electric vehicles."

Because electric vehicles were not accepted right away, Paulson is proud of his company's progress since it began operating out of a renovated military aircraft hangar along the Pacific coast just after World War II.

"We had to prove to the airports that our electric vehicle wouldn't die during a push-back," Paulson says. "To now be able to take



that technology and handle up through the 757 – so every narrow-bodied aircraft that flies today – can be handled with one tug. That's quite an accomplishment."

An Industry Need

While attempting to limit the variety of equipment needed, the functions airlines required from its GSE has evolved.



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Although the 250 model tug in LEKTRO's '89 series, debuted in 2016, the idea for a tug that could handle the B757 and smaller aircraft actually came about years prior.

In the late 1990s and early 2000s LEKTRO customers were looking for a tug that could handle a range of narrow-bodied and regional aircraft, including the B757.

However, financial limitations brought on by the terrorist attacks of September 11th and the economic slump in 2008 forced airlines to allocate their money elsewhere. As a result, LEKTRO elected to postpone the project.

Because of the hardships airlines were facing, it appeared that the B757 would be phased out of operation. However, when fuel prices dropped, the economy picked up and airlines began turning larger profits, the Boeing 757 didn't go away. Instead, airlines found that – while not the most efficient aircraft – the B757 filled a “seat gap” between a B737 or an Airbus A321 and a B767.

This led to a need for the 8950-250, which was then requested by United, according to Paulson.

“The 757 wasn't a wide-body, but it was an awful big narrow-body. So if you talked to an airline, it kind of fell right in this no-man's land,” Paulson says. “There were

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big tractors and there were small tractors, and the 757 was kind of like ‘what do we do with it?’

“In order to handle it, the airlines had to buy a wide-bodied tractor specifically for the 757 – which was then too big for the smaller airlines,” he adds. “But they had no choice.”

Now, the AP8950SDB-AL-250 allows customers to handle all of their narrow-bodied and regional aircraft.

Finding a Solution

When the industry recognized the B757 wasn’t going away, Paulson and his team at LEKTRO found themselves asking the same question.

“Is there any way that we can make our 8950-200 have the ‘57 capability?” explains Paulson.

“The goal was, how do we use the chassis we have and make it grow another 30 percent capacity?” he continues. “Now that we have the customers using the 8950 already, rather than trying to look at another com-

pletely different tractor, can we take the 8950-200 and super-size it?”

The conversion required a number of custom parts and modifications to existing components of the 200 model to achieve the specs required of the 250 – most notably increasing the tug’s 210,000-pound capacity to 280,000 pounds.

“The motor had to be changed. The battery had to be changed from an 80-volt to 120-volt system. The winch had to be upgraded. The drive tires, the wheels, had to be upgraded. The wheel drives had to be upgraded,” Paulson notes. “Almost every major component in the tug had to be upgraded.”

Although the components required an upgrade, the basic chassis still worked, which was essential in order to handle the smaller, low-profile regional aircraft.

Key Functions

The AP8950SDB-AL-250’s ability to handle a range of regional and narrow-bodied aircraft up to the B757 is made possible by

the unit’s Programmable Logic Controller (PLC) System. This onboard computer senses the aircraft’s weight and makes adjustments to properly handle each plane, transforming itself from a 280,000-pound capacity tug down to a 50,000-pound capacity tractor.

“Changing parameters so that the AP8950-250 doesn’t exceed the limitations of all the aircraft sizes set for by the manufacturer is critical,” Paulson says.

For smaller aircraft, the PLC changes motor power so there isn’t as much power on the throttle; reduces braking forces; reduces the forces the winch can pull; etc. Additionally, if a pilot forgets to release the hydraulic steering or there’s a bypass pin on the nose to avoid damaging the steering, the PLC will sense the torque and alert the operator once the tug is approaching OEM designated torque limits. If the operator continues and reaches the torque limits, the warning light becomes red and the alarm will not stop until a supervisor inspects the nose gear and tug and disables the alarm.



◀ **LEKTRO team members Henry Balensifer, Danny Harms Jr., Scott Mart, Eric Paulson, Paul Davis, Jeremiah Scott and Jesse Long stand beside the company’s electric towbarless pushback.**

"In the 250 model, the PLC system offers five settings," Paulson explains. "The airplanes are in these ranges. The first setting is for ERJs, the next is for CRJs, the next for the E-170-195 or MD80 or MD90, the next setting is the Airbus A318-321 and Boeing 737, and the final setting enables the tug to handle a 757.

"It adjusts all the parameters of the tug."

LEKTRO's winch, strap and cradle concept also provides versatility. By pulling aircraft onto the cradle system, Paulson says the tug can handle nearly any aircraft nose gear. This is particularly valuable in general aviation, he says, noting there are thousands of aircraft and hundreds of nose gear types.

"The 757 is the largest that you can stay with that," Paulson says, adding larger aircraft need to utilize a tug with a hard-capture design. "This particular tug still enables us to do all the corporate aviation, plus the airlines through regional aircraft."

Additional Benefits

In addition to its versatility, having one tug for multiple aircraft simplifies training and maintenance as well as streamlining equipment needs, according to LEKTRO. Plus, the electric vehicle helps customers meet environmental criteria.

"They're getting the advantage of electric, which is quiet besides clean. It's easier to maintain because there are less moving parts on an electric vehicle than there are on a combustion engine vehicle," Paulson says.

In addition to pushback operations, the tractor can also be used for towing, delivering airplanes to hangars for maintenance needs.

Paulson says LEKTRO's battery packs – the company uses lead acid batteries to take advantage of their weight – function for approximately five hours in standard pushback operations and about half that time when used for towing.

"The standard pushback, slow speed units, will go about five hours on a charge. That means five hours, half towing an airplane, half empty," Paulson explains. "If we're doing high-speed towing, we're using a lot more battery consumption. So in that case, we're about two or two and a half hours. And that's still a lot of towing.

"We typically see in pushback operations,

that they may only use 20 percent of the battery during the day."

The battery packs utilized by LEKTRO can be charged in about two hours with a rapid charge system, or eight hours with a traditional charging station.

Still Looking to Improve

The fruition of the LEKTRO AP8950SDB-AL-250 is due in part to the company's desire to improve its existing offerings.

"We're constantly looking at the tug, and we're constantly talking to customers as far as 'How can we make the product better?'" Paulson says.

Recent examples include creating a pawl adapter that replaces multiple towbars and, with one pawl head, allows ground handlers to pushback planes as large as the 757 all the way down to CRJs and ERJs. Paulson adds

the company has utilized bedliner coatings as well in an effort to minimize rust impact.

And as the company continues to evolve its electric towbarless tugs, Paulson says he is getting positive feedback from customers that include United, American, Delta, Southwest, JetBlue, Alaska, Air Canada, Air New Zealand, Qantas and others.

Approximately 20 units of the 8950-250 are currently in operation in locations including Los Angeles, Washington D.C., Atlanta, Denver, Chicago, Seattle and San Francisco, and others.

"We have spent a lot of time on the ramp, monitoring what works and what doesn't – as well as talking to operators and mechanics," Paulson says. "If we feel we can achieve most, if not all of the objectives, we move forward with the design." **GSW**

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How the Middle East is Handling Increased Traffic Volumes

The ground handling industry has a key role to play in the expanding aviation industry in order to take advantage of opportunities and overcome challenges that an industry expansion implies.

By Mario Pierobon

The Middle East region is witnessing a very significant growth in the aviation industry. According to statistics computed by the International Air Transport Association (IATA) – made available at the end of 2016 – the Middle East region appears to be the only region of the world that has consistently witnessed over the last five years a double digit percentage growth year over year in terms of both passenger traffic and capacity.

“Middle Eastern airlines have one of the lower break-even load factors. Average yields are low but unit costs are even lower, partly driven by the strength of capacity growth,” reads IATA’s 2016 End-year report.

The aircraft ground handling industry has a key role to play in the context of a strongly expanding aviation industry in order to both take advantage of the opportunities and overcome the challenges that an industry expansion implies.

One of the challenges concerns the adequacy of the aircraft ground handling infrastructure in the region to cater for increasing traffic volumes.

“Generally speaking, there are no significant ground-handling shortages observed in the region today, although a few exceptions exist,” says Shamel Shishani, IATA’s regional director – airport, passenger, cargo and security for the Middle East-North Africa (MENA) region.

Photo courtesy of dnata



According to Jon Conway, director general of the Airport Services Association (ASA), it is not really just about ground handling infrastructure.

"If one takes a holistic view, it is about overall airport infrastructure – terminals, concourses, baggage handling systems etc. – in addition to air traffic management, ultimately runway capacity, and then the surrounding infrastructure (road/rail links, etc.) to support the traffic increases still very much on the horizon in the Middle East," he says. "We ground handlers are simple folks. We like well-designed facilities, space to work and park our ground support equipment (GSE), efficient mechanical handling systems, sensible airside regulations enabling safe and efficient ground operations. I still think the industry misses a trick in not fully engaging with our sector when it comes to airport and airfield design and development. The handlers (the ultimate end user for many airport facilities) are often presented with sub optimal designs requiring either work arounds or (expensive) remedial work. This has always surprised me and I hope our recent efforts with Airports Council International (ACI) will help improve the level of

engagement, especially at the planning stage. There is an enormous amount of experience out there just waiting to be used."

There are several additional operational challenges for the aircraft ground handling companies in the Middle East in the context of an expanding industry. According to Shishani, these include security and immigration bottlenecks, a lack of proper airport-user service level agreements (SLA) with established key performance indicators (KPI) and minimum service levels for providers to start with – including ground handlers. In addition, he points out, airport operations are not being handled with a 'supply-chain' approach in mind that ensures all links in the chain enjoy proper communication, coordination and alignment on one ultimate customer.

"Cargo handling is not receiving a similar level of attention compared to the passenger side and, triggered by the drop in oil prices, the region is experiencing an unprecedented increase in user charge increases that is not being done according to ICAO main charging principles or industry best practices (i.e. transparency, user consultation, cost-relatedness and non-discrimination) and does not necessarily add value or improve services," says Shishani.

"More broadly, in the Middle East and elsewhere, the reduction of injuries and ground damage on the airside is of prime concern. To this end, we are working with ground service providers and GSE manufacturers to help develop GSE specifications that call for active measures to improve operational performance such as non-contact sensors, proximity based speed limitations, etc. Paired with this is strong dialogue with aircraft manufacturers to make it possible to actively guide GSE to its interface points at the aircraft fuselage," says Joseph Suidan, IATA's head of ground operations.

"Typically, in a constrained environment, the handler is working with systems and infrastructure which is often operating at or beyond design capacity. There is inherently higher risk when working at an airport which is operating above design capacity," says Conway. "Operational challenges would include – especially at peak times – maintaining quality of baggage handling, making increasingly aggressive MCT's (baggage) and moving around the airfield where airport operators, understandably, want every piece of available real estate to park or taxi an





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aircraft. Staff costs are an increasingly challenging issue. Many handlers do not have the luxury of recruiting local staff – there simply is not the population – so large numbers of expatriate colleagues are required. This is beginning to become more of an issue as employee related costs escalate.”

With respect to the availability of airport infrastructure in the Middle East, indeed, it can be said it is both expanding and witnessing some bottlenecks.

“Of course there is massive development in some parts of the region, like in the United Arab Emirates, with developments at both Dubai and Abu Dhabi. The new Doha International Airport is now on line and Bahrain has extensive development plans. Saudi Arabia also has identified a major need to expand their airports and I see that country rapidly developing its airport network in the coming years,” says Conway. “Unfortunately, there are no overnight solutions. But there are plans to build and develop, e.g. Dubai World Central will ultimately serve over 200 million passengers per annum.”

“When it comes to the 30-passenger terminals on our watch-list, based on the current capacity and annual growth rates, we have 15 terminals which have already reached full capacity today, one that will reach full capacity by 2017, five by 2019, three by 2020, two by 2021, three by 2023

and one by 2027,” says Shishani. “In summary, compared to other regions; MENA’s ground infrastructure is good today, with some exceptions. Many airports need to have proper planning to ensure catering for the impressive annual growth rates the aviation industry enjoys in MENA.”

The competitive scenario in the aircraft ground handling business in the Middle East region is indeed very peculiar as ground handling is more single-source than competitive in many locations with none or few options to choose from, according to Shishani.

A vital component that ties all of this together is better communication and harmonization between ground service providers, airlines, airports and IATA.

“There is a lack of sufficient regulatory framework in many locations and in some cases regulations work against a competitive market (i.e. enforcing one size fits all pricing in some occasions), and in some cases regulations focus on addressing safety and security but do not address service quality and cost efficiency,” he says.

“The Middle East has a mixture of sole provider ground handling and some airports which have a choice. I know some airline procurement types get very hot under the collar when negotiating with a sole provider and I can understand why. However, the model selected is typically a decision made by the governing authorities – not the ground handler – and, in my experience, the commercial aspects of handling negotiations were invariably professional and mutually satisfactory. I do not see a correlation between quality and competition and I have

heard a counter argument where ‘excessive’ handling licenses have led to a deterioration in quality,” says Conway.

“Huge variation exists across the region, with some locations taking advantage of the new technologies and best practices. For example, IATA Fast Travel initiatives enjoy good focus in the region. MENA comprises today 7.69 percent of the global traffic volumes, out of which 3.69 percent enjoy FT services. However, that good percentage is due to a few regional locations/players and it’s not spread across most locations/players,”

says Shishani.

“A vital component that ties all of this together is better communication and harmonization between ground service providers, airlines, airports and IATA. We are developing globally applicable standards and procedures for ground operations, identifying areas where a simpler and consistent approach will benefit the industry and driving improvements to align ground operations and IATA audit programs,” says Suidan. **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 marioprbrn@gmail.com.

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Mitigate Airport Security Risk Via Contractor Vetting

Improved contractor vetting can mitigate safety and security issues before they even happen.

By Mina Mina

Every day, millions of people head to airports around the globe. Some are going on dream vacations. Some are making moves across the country. Some are simply commuting for another day in the office.

As they head through security lines, these travelers have a lot on their minds. Am I going to make it on time? Did I pack everything I need? Will I be able to get my coffee before I board the plane?

While safety is often a concern, when passengers decide to travel by air, they're entrusting their lives and the lives of their loved ones to airline officials and airport employees who they assume are working to mitigate potential security risks at all times.

Though obvious aspects of ensuring airport security – such as passenger identification measures and adequate screening of people and personal property before boarding flights – are widely discussed among airport professionals and laypersons alike, one area that is often overlooked is potential security threats posed by airport contractors.

From facilities custodians to airplane mechanics to pilots, nearly one million contractors work behind the security wall at U.S. airports alone, according to CNN. And while security has significantly strengthened since 9/11, a New York Committee for Occupational Safety & Health (NYCOSH) report shows better supply chain risk management via stricter contractor screening procedures could have helped identify situations therefore potentially preventing a number of deaths and injuries at major airports in recent years.

So, what are the leading known, manageable risks associated with airport operations that are most frequently overlooked? And how can airports improve the contractor vetting process to mitigate the likelihood of behind-the-scenes safety and security issues that many passengers aren't even aware of?

Everyday Tasks

According to a Health and Safety Executive (HSE) study that examined accidents and dangerous

occurrences in the air transport industry over a four-year period, improper lifting and handling is the top cause of employee injury, accounting for a notable 39 percent of the report's total anonymized and aggregated data.

Despite the commonness and predictability of the activity, baggage lifting, in particular, results in significant muscular skeletal injury rates due to the ergonomics associated with handling heavy weight and the particulars of the position and height of the lift that's required, especially if done repetitively. The risk of injury also rises when performed in confined spaces in the cargo hold or amongst passengers in the cabin by ground staff and cabin crew.

Per the pie chart, shown on the next page, accidental slips and trips followed as the second most common injury type behind lifting and handling, accounting for 24 percent of total injuries. Being struck by an object ranked as the third highest reoccurring injury with 13 percent of the total.

Although not included in this chart, work stress is another potential risk airport contractors and their employees are exposed to daily. As with any job, harmful physical and emotional responses can occur when the requirement of the job does not match the capabilities, resources or needs of the worker.

Exposure to Unsafe Elements

Apart from these everyday tasks that are inevitably a part of the job description, NYCOSH's survey (cited above) of workers employed by some of the largest airline contractors operating at John F. Kennedy (JFK) and LaGuardia (LGA) airports reported hazardous materials, extreme weather and unsafe noise volumes as some of the harshest and potentially dangerous elements they are exposed to during the course of their workday.

If unaware of the chemicals in the cleaning and disinfecting products they are using, workers run the risk of suffering eye, skin and respiratory infections from inappropriate contact. Misuse can put

passengers at risk as well, as too minimal use, or no cleaning product use at all, can create unsanitary conditions that are breeding grounds for disease. Too much cleaning product can cause overwhelming fumes, putting pilots, crew and passengers at risk.

As worker's clean cabins, wheelchairs, terminals and more, they are also frequently exposed to blood and other bodily fluids, such as vomit and urine, posing the risk of coming into contact with blood borne pathogens that can transfer disease to humans.

Aside from these apparent chemical and biological risks, those working day-in and day-out on the tarmac are regularly exposed to fuel emissions and carbon dioxide coming from engines in jets, vehicles and equipment. While low levels of exposure can cause headaches, lightheadedness, fatigue, impaired judgment, motor skill deterioration and loss

of consciousness, high levels of exposure can lead to extremely severe side effects, such as cancer and death by suffocation.

Although most people are aware excessive amounts of exposure to CO₂ has scientifically been proven to cause health problems, a natural element that isn't always initially thought of as life-threatening is weather. However, excessive exposure to extreme heat can lead to heat rash, heat cramps, heat exhaustion and even heat stroke, while prolonged exposure to freezing or cold temperatures may cause serious health problems, such as frostbite and hypothermia.

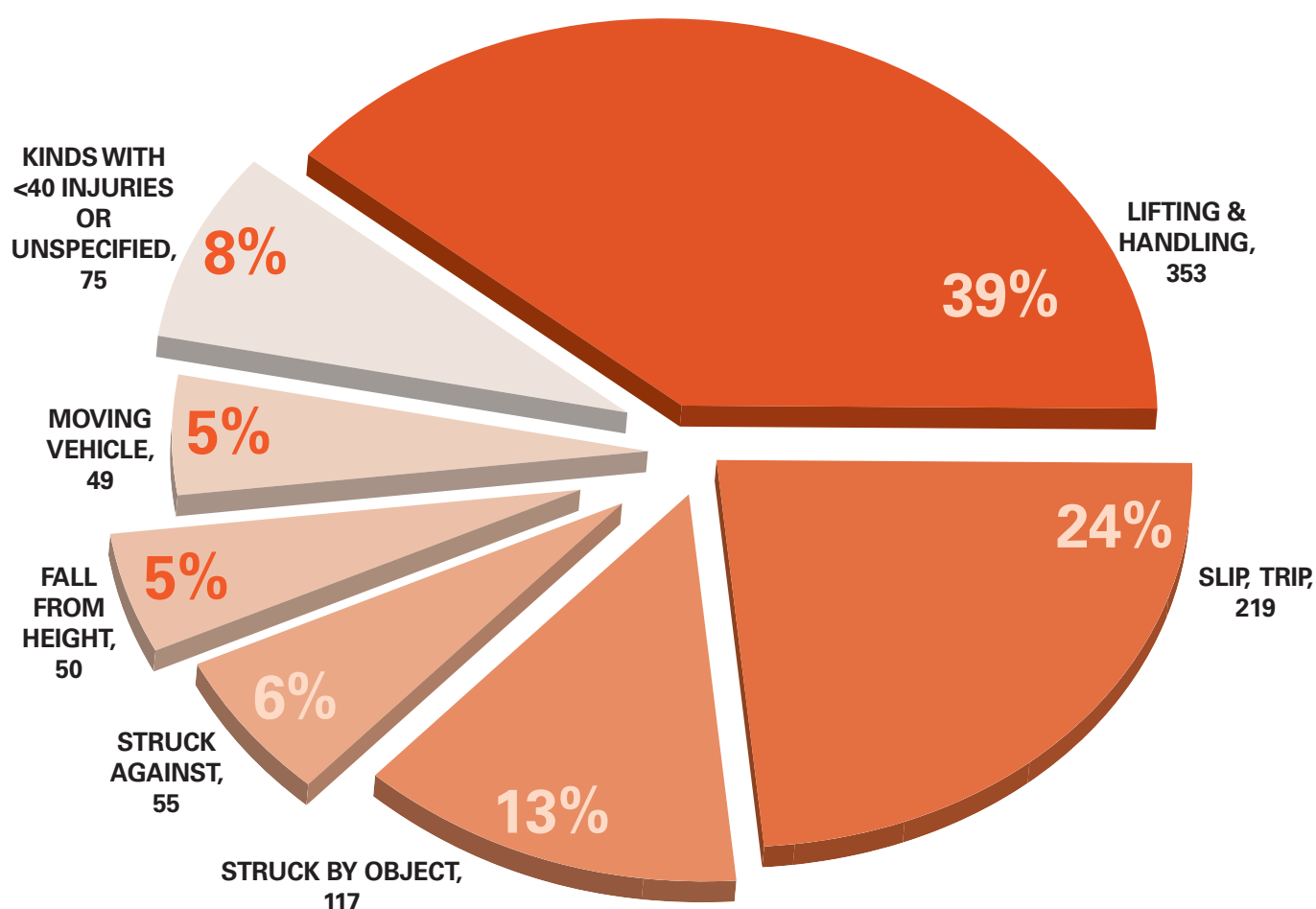
The final hazard discussed in NYCOSH's report was exposure to extreme noise levels from airplane engines, which can cause permanent hearing loss that cannot be surgically corrected or improved with hearing aids. Exposure to loud noise can also cause

psychological and physical stress and hypertension, reduce productivity, interfere with communication and concentration and contribute to workplace accidents and injuries by making it difficult to hear warning signals.

The areas of airport operations most likely to increase operational risk include but are not limited to:

- **Airside Driver and Vehicle Operations** – including safety policies, such as distance between vehicles, speed in designated areas and number of vehicles and drivers present in loading areas.
- **Apron Management** – managing aircraft parking, loading/unloading and fueling and boarding areas.
- **Biological** – including aircraft waste storage and disposal (blood borne pathogens).
- **Construction and Maintenance** – ensuring infrastructure is properly maintained

INJURIES TO EMPLOYEES IN AIR TRANSPORT, BY INJURY KIND, 2013/14P



and construction areas are appropriately marked and blocked during maintenance periods.

- **FOD (Foreign Object Debris) Management** – including any objects found in an inappropriate location that – as a result of being in that location – can damage equipment.
- **Ground Handling Operations** – defining the servicing of an aircraft while it is on the ground and usually parked at a terminal gate of an airport.
- **Hazardous Material Handling** – including oil or other petroleum products, solid waste and any other toxic substances.
- **Markings, Signs and Lighting** – including identification/notification of areas where an aircraft is to hold before entering a runway, where a runway or taxiway is closed and other important notices for entering and exiting runway and terminal areas.
- **Movement Area Access Aerodrome Works** – permitting access onto the movement area to authorized personnel and vehicles.
- **Movement Area Maintenance** – maintaining the runways, taxiways and other areas of the airport that aircrafts use for taxing.
- **Movement of Aircraft** – including ensuring

proper coordination with other aircrafts on runways, taxiways and other areas of the airport used for taxing.

- **Obstacle Management** – including defining, assessing, controlling and removing the obstacles in the vicinity of the area in which flight operations occur.
- **Rescue and Firefighting** – a special category of firefighting that involves the response, hazard mitigation evacuation and possible rescue of passengers and crew of an aircraft involved (typically) in an airport ground emergency.
- **Runway Operations** – including ensuring coordinated landing and takeoff of aircrafts.
- **Winter Operations** – planning and implementing safety policies and procedures around snow, ice and slippery weather conditions.

Improving Safety and Security

When time literally means money, the urgency for airports to keep their flights coming in and going out puts heavy pressure on employees to move as quickly as possible, potentially not allowing much room for reflection on safety standards. That is, until the airline receives a massive Occupational Safety and Health Administration (OSHA)

fine for violating federal requirements.

The haste associated with airplane turnaround times is often the cause of employee injury or death. In some cases, engineering controls can be put in place from a health and safety perspective to eliminate boots-on-the-ground hazards completely. However, each and every known risk could be properly managed through structured risk assessment and risk management practices that have been well-documented for airports through risk registers, such as TRB's Airport Corporate Research Program (ACRP) Safety Management Systems for Airports Guidebook Volume 2 and Airports Council International (ACI) Safety Management Systems Handbook.

Risks are systematically identified and risk control measures documented in such risk registers that define how each risk will be managed. The operational controls are generally formally captured in procedures that are incorporated into the airport's safety management system. For example, ACI's APEX program provides for auditing and benchmarking of the airports effectiveness by implementing an appropriate safety management system to manage safety risks.

Ensuring that all hazards are recognized and reinforced with education campaigns is imperative to preventing disaster. It should not be assumed that the employees engaged

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have requisite skills until they are vetted and operational safety procedures have been properly communicated before they undertake the work.

Contractor Vetting

Contractors have proscribed activity-dependent procedures that must be followed at all times to ensure the safety of everyone involved. For example, an airport contractor has lifting, working at height and airside vehicle operational procedures and training programs for its employees. If a contractor has not developed appropriate procedures for driving operations airside and ensuring they have processes to train their employees, there is a real risk of vehicle incident potentially impacting the airframe or other vehicles.

Likewise, there are significant working at height risks associated with a number of activities with ground handling and operations. Therefore, it is critical that the contractors are screened to ensure that they understand the risks and appropriate controls are developed.

The management of these risks has increased in complexity with the utilization of contractors to undertake ground support activities traditionally undertaken by the airlines. There is a growing need to prequalify the contractors to ensure that they have appropriately understood the risks associated with their services and that they have the appropriate controls in place to mitigate the likelihood of accidents.

Given the potential consequences associated with airside risks, in particular, it is critical that contractors are screened to ensure that they understand the risks that they are exposed to when they are airside. When inadequately addressed, these risks can significantly disrupt business, potentially impacting specific flights, airlines and airport operations.

The impact from one event can easily extend beyond the contractor. For example, if during a construction project a contractor's employee accidentally severs a major fiber optic cable at an airport just as it is coming into a peak traffic period, the airport would likely need to shut down for 90 minutes or more and redirect airplanes to other airports, until airport officials are able to bring the systems back on line.

The repercussions of this civil construction contractor not operating within appropriate ground disturbance procedures, resulting in the severing of the cable, would be significant to passengers, airlines and the operation of the airports. This event could have been prevented if the contractor had been screened and their ground disturbance procedure and training reviewed prior to being awarded the contract. And, while this was a serious event, resulting in inconvenience for airline passengers and personnel in multiple locations as well as financial loss

and reputational impact, it could have been far worse – contractor errors and inadequate contractor vetting can – and often do – result in more serious harm, including death.

Continually monitoring contractors and their employees to ensure they maintain airline, airport and industry best-practices promises to help close the gaps, resulting in fewer injuries therefore a safer environment for all, improved efficiency and reduced costs.

GSW

▶ ABOUT THE AUTHOR:

Mina Mina, ASP is senior director of client success for Avetta. He brings more than 15 years of dedicated health & safety professional experience, specializing in audits, commercial insurance and regulatory compliance and consultation based on jurisdictional requirements. Mina earned his Bachelors of Arts degree in Criminal Justice/Law from California State University, Fullerton. He also holds an ASP Certification through the BCSP (Bureau of Certified Safety Professionals) as well as other certifications relevant to the health & safety space.

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Photo courtesy of Cavotec

Cavotec Units the Right Fit for HAITEC MRO Facility

The 2500+ Series GPU allows the MRO to service an A380 and two B777-300s at its Frankfurt-Hahn hangar.

Faced with a need to maintain passenger and cargo aircraft, including an A380 or two B777-300s simultaneously, independent MRO company, HAITEC, found it was able to expand its aircraft servicing capabilities with the help of Cavotec.

Cavotec, a manufacturer and systems integrator of advanced ground support equipment, supplied HAITEC's hangar with eight 2500+ Series 400Hz Solid State Frequency Converters in addition to 400Hz pop-up pits, two fuel exhaust pits, concrete chambers and related ducting and cables in order to meet the MRO's needs.

"We were selected for this work, in part, due to our high-quality turnkey solutions that offer customers unique functionality for MRO operations," says Sven Paier, Cavotec business development director – airports systems.

"Combining our advanced Series 2500+ 400Hz Solid State Frequency Converter with our pop-up solutions was the most effective way of achieving increased operational flexibility at the HAITEC facility," adds Taner Türk, technical sales engineer at Cavotec Fladung.

Cavotec officials say the company's 2500+ Series GPU provides customers like HAITEC flexibility as it supports multiple aircraft power requirements and operation methods. The design ensures airports can use it for all types of gate designs, including passenger boarding bridge mounted, ground mounted, mobile, horizontally or vertically mounted.



Cavotec says the 2500+ is “designed to global standards for a global market” because it is a single product that meets the needs of airports, airlines and ground handling companies, whether installed at contact gates, remote aprons or MRO facilities, and in fixed or mobile configurations.

The unit can be used to service new generation aircraft, including the A380, B787 and A350. The 2500+ delivers up to 500 percent overload capacity, with continuous power factor 1, in ambient temperatures of up to 60 degrees C, according to Cavotec. It can also be integrated with a 400Hz coiler called the Cavotec 2500+ PowerPack I-Connect.

Cavotec says that having a single unit that can be installed at different locations in a variety configurations using the same parts improves operational efficiency and reduces operating expense. The unit measures 48 inches by 30 inches by 30 inches

and weighs 1,257 pounds.

The 2500+ is equipped with Cavotec Skyway, an embedded software interface, which provides information about the operational status of the converter, as well as equipment connected to it such as 400 Hz pits and coilers. Cavotec Skyway includes a data log and multi-language functionality, and it can be accessed remotely via Bluetooth-enabled devices such as tablets and smartphones.

The system also provides information from the unit, (status, performance etc.), via email or RDS feed. Operators do not need to be physically next to the unit to obtain such information, making operations faster and simpler, according to Cavotec.

The functionality of Cavotec Skyway can be extended with Cavotec Skyway Terminal, an application that maps airport gates and installed equipment such as 400Hz converters and Pre-Conditioned Air units.

It provides a live visual feed of equipment status. In the event of any problem, an alarm is displayed on the screen, or an alert is automatically emailed to pre-selected airport personnel. Operators simply click on any of the displayed equipment and remotely access the unit from wherever he or she is to obtain preliminary diagnostics on equipment status. If access to an Ethernet network is available, Cavotec service teams also receive live status information for the equipment, and are able to conduct an amount of troubleshooting remotely.

Cavotec, which has more than 40,000 aircraft service systems installed globally, can also work with customers on turnkey and tailor-made solutions to optimize the positioning of utility pits and relevant equipment associated with the company's systems. **GSW**

This article was provided by Cavotec.

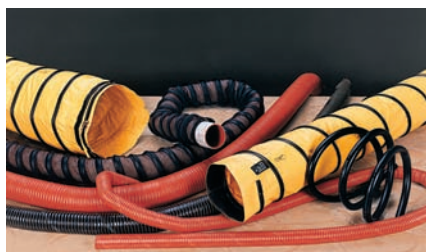


PCA610 PCAIR CONNECTOR

Page Industries

Page Industries' PCA610 PCAir Connector is an 8" nylon composite PCAir connector that comes standard with a field replaceable SNAP-IN gasket, internal spinning ring to eliminate twists in the hose, built-in FOD screen and provides maximum air flow to the aircraft.

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Thermoid, Inc.

Aeroduct Hose and Ducting have been standard products used by ground personnel worldwide for years. Aeroduct Jet Starter Hose is designed for wide temperature ranges (+500 degrees F to -80 degrees F), and it can be handled by one person, offers high burst strength (+400 PSI) and resists abrasion, fuel and mildew.

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JETLINKSYS

Unitron Power Systems

Unitron Power Systems presents the JetLinkSys, a self-contained cable management system with a 400Hz, 28VDC, 270VDC or combination Solid State Frequency Converter. The System is available in an overhead or fixed configuration.

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28.5V GROUND POWER UNIT

Tronair Inc.

Tronair's 28.5V ground power unit incorporates a Tier 4 final electronic engine. The Murphy operating panel displays engine, GPU, fuel status and alerts/warnings to abnormal conditions. The control panel allows digitally setting the output voltage, current limit and maintenance mode. The unit provides ultra-low ripple DC output for the most demanding aircraft. The large 35-gallon fuel tank allows 26 hours of run time at rated load, and a high ambient temperature cooling package.

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ELECTRICAL CABIN HEATER

Sky-Teq

The aircraft cabin heater from Aviata provides electrical heating of the cabin of regional, narrow- and wide-body aircraft even at ambient temperatures down to -50 degrees C. Electrical heating provides safe operation of the unit on the apron as well as inside the hangar during handling of the aircraft, maintenance or night stop.

Features of the cabin heater include construction made in stainless or galvanized steel; safe integrated storage compartment for the hose and connector when not in use; operator friendly touchscreen for easy handling of the heater; fan speed selection for more economical use; ventilation mode for usage during summer period; easy access to all components to optimize service; remote access to PLC control unit via Ethernet/Internet (option); and remote alarm to up to five mobile phones. Configurations include trailer mounted, pick-up/van mounted or PBB mounted.

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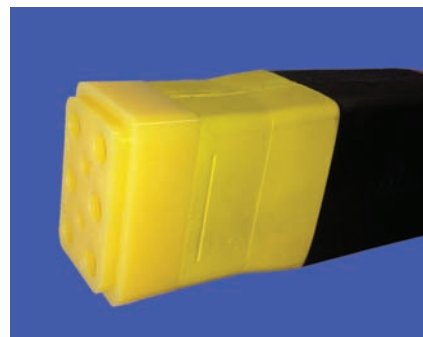


HIGH-IMPACT CABLES

MCM Engineering Inc.

The MCM GOLD X Nose used on MCM 400Hz Aircraft cables, is made from a material with high impact strength to help protect the power and relay contacts. A very low coefficient of friction makes it very resistant to abrasion.

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GASOLINE SERIES GPU BatesField GPU

The Gasoline 2000 Series BatesField GPU features standard 28.5v DC output voltage with 12v DC available as an option and 3,045 cranking amps; 200 amps for pre-start operations. The unit can be maneuvered by hand or tug. It comes standard with a minimum of 12-inch pneumatic tires (two rigid/two swivel) and a simple kick stand brake that lifts the front with the tow handle when tow handle is raised in the upright position. Pneumatic 16-inch tires are available with a heavy duty undercarriage with tapered bearings available with and without brake as an upgrade option.

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BELLYCOOL PCA ADAPTER ABC Industries Inc.

Cool ramp workers in a plane's belly by diverting air from the gate's existing PCA ducting with the Bellycool adapter. Available in 14-inch and 12-inch to 8-inch reducers, as well as 14-inch and 12-inch inline connections. Bellycool features a 4-inch port for wire-reinforced ducting that runs to the plane's belly.

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JETGO 550MTI 28V DC DIESEL HYBRID GPU AERO Specialties

The AERO Specialties JetGo 550Mti 28.5V DC diesel-electric hybrid aircraft ground power unit (GPU) provides continuous and peak power in addition to offering advanced aircraft protection systems. JetGo GPUs have been specifically designed to meet the increasing demand in the aviation industry for a quieter, yet powerful, "green" ground power unit. With an EPA Tier 4 rating for low-emission non-road diesel engines, JetGo GPUs meet all current air quality emission standards.

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PCA ADAPTER Hall Technical Services

The company manufactures 8-inch PCA aircraft adapters in nylon and metal, with or without screens. Handle assemblies are universal and the EPDM gasket is the best on the market, according to the company.

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NONMETALLIC PCA ADAPTORS

Sage Parts

The Nonmetallic PCA Adaptors offer lightweight, high-impact polyethylene and amorphous nylon construction for durability and safety. The adaptors resist corrosion and help eliminate dangerous rough edges that are common with metal adaptors as they drag along the ground. They fit any aircraft and attach instantly. Their airtight fit, will not shake loose. The adaptors are maintenance-free, never need paint and will not dent. They withstand hot and cold temperature extremes, and are available in all sizes.

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Verde GSE's line of PCA units are born from the toughness and simplicity demanded by the military, utilizing the highest quality components and most advanced technologies available. With a foundation in energy efficient technologies, the company provides a PCA solution with efficiency, flexibility and serviceability.

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EZ OIL DRAIN VALVE FOR GPUS

Global Sales Group

The Global Sales Group EZ Oil Drain Valve for ground power units and other aviation ground support equipment replaces the standard drain plug on any engine to assist with oil changes. The H-Type (straight hose end) allows easy hose connection to drain oil away from the engine for spill-free oil changes. The L-Type (90-degree hose end) prevents the hose from kinking, which can aid applications with limited space and access to the drain plug. The elbow is fully adjustable, 360-degrees in any direction, and may be secured by using the built in lock nut. The L-Type option is available for any engine with more than 30 different valve sizes. Other features include a ball valve mechanism for leak-proof operation; nickel plated; O-ring seal; reinforced plastic handle cover; laser etching to improve part number identification; and easy hose connection.

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GSE SUPPORT

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Servicore offers knowledge on ground power units, loaders, air starters and other equipment to bring its customers the best service possible. The company provides sales, rentals, replacement parts, safety supplies, ramp accessories, technical support and training for all GSE.

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▶ FOX CART MARK II - 18 INCH RISER KIT

FoxCart GSE, LLC

FoxCart GSE offers a '18 Inch Riser Kit' to be fully compliant with the safety regulations of a hangar environment. The "18 inch rule" requires there be no electrical connection allowed within the 18-inch area above the hangar floor as this area is considered to be hazardous because fumes from spilled jet fuel may not yet have dispersed sufficiently to avoid ignition were an arch to occur; in this context, a loose electrical connection within a mobile power unit (GPU or Cart).

AviationPros.com/12154944



▶ GROUND POWER UNITS

TUG Technologies Corporation

GPUs are available with AC kVA ratings of 60, 90, 100, 120, 140 and 180. The company says primary design objectives include simplicity, ease of service and maintenance, durability and performance. With the 28.5 VDC rectifier option, the unit can provide power to aircraft requiring 28VDC at 600 A continuous and 2,000 A peak.

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▶ AMPJET

Advance GSE Corp.

The Advance GSE Ampjet ground power unit is built to deliver continuous power and capacity, resulting in a more consistent power supply. It is also designed with Synergic Engine Generator Control – one controller designed to monitor both the engine and the generator simultaneously and adjust outputs and inputs accordingly. Made from high quality components that are almost universally available, Ampjet is safe to operate, and easy to maintain and repair. The GPU is also optionally equipped with telematics that allow for remote monitoring of the GPU to track maintenance needs and physical location of the equipment.

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HOSE REEL US Airmotive GSE

U.S. Airmotive offers hose reels that are capable of storing up to 80 feet of 12- or 14-inch diameter lay flat ducting. The all-aluminum construction, powder-coated white reel can stand alone or connect to bridge. The PCA adapter bar locks for storage and protection. It is available with 6- or 8-inch casters that resist wear and tear on concrete and asphalt; pneumatic tires are optional. Long-wearing bronze alloy bearings eliminate the need for lubrication. Expanded metal support prevents ground contact with coupler or hose. It measures 32 inches wide, 41 inches deep and 45 inches high.

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ECO-FRIENDLY GPU Start Pac/Rotorcraft Enterprises LLC

A patent pending eco-friendly aircraft ground power unit that uses up to 75 percent less fuel than traditional equipment has been launched by Start Pac. The lithium 26V hybrid ground power unit, the Hi-Brd 3 GPU, meets current Tier IV EPA emissions standards. It is available in two models: the self-propelled version, which makes it simple and easy to maneuver for shorter distances as well as towable for longer distances; and the Rover, which is an electric cart mounted drivable unit for longer distances that can also tow luggage and lav carts. The Hi-Brd 3 GPU also runs quietly and efficiently and the easy-to-use key ignition allows for fast on the job training and operation. The unit is also equipped with a built-in battery warmer and charger.

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3400 PCA ITW GSE Hobart

The ITW GSE Hobart 3400 PCA is available as a 280 lb./min and a 460 lb./min model. The Hobart 3400 PCA offers multiple, identical cooling modules. Each module can be swapped and replaced, like a drawer, in 20 minutes and by a technician with no HVAC skills. This minimizes downtime and keeps aircraft turn-arounds on schedule. The 3400 PCA can continue cooling the aircraft even with one module inactive.

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Eaton Corporation

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DIESEL 400 HZ GROUND POWER UNIT

JBT AeroTech, Jetway Systems

The D-180, a diesel-powered, trailer-mounted, 180kVA ground power unit from JBT AeroTech can continuously supply 180 kiloWatt service. 400 Hz power is produced from a diesel engine-generator combination available in either Tier 3 or Tier 4 configurations that meet the most stringent environmental requirements. The unit is designed for ease of access for all preventive and intermediate maintenance operations. The frame and shell are made of heavy duty materials, and controls feature a HMI console able to provide critical operational and diagnostic information to operators and maintenance personnel. HMI digital displays record engine performance data, relevant maintenance and diagnostic data, as well as key operational metrics such as fuel status, voltages, amperages, frequencies, kiloWatts, run times and unit status

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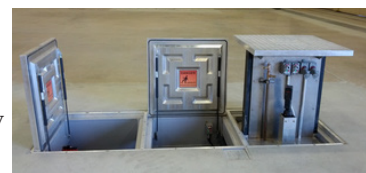


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28V DC POWER SUPPLIES

Current Power LLC

Current Power LLC manufactures energy-efficient 28v DC power supplies for corporate, military and commercial customers. The company is known most for its 600- and 400- amp mobile units, which provide 2,000- and 1,200-amp peak starting current, and its re-connectable input that makes a single model usable around the world, on any 50 or 60 Hz power. Additionally, the user can precisely set the maximum current limit with the push of a button.

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AXA 2400 COMPACT

AXA Power - An ITW GSE Group Company

The AXA 2400 compact GPU is the safe choice for the supply of modern aircraft. As the only GPU in the market, it has 400 percent overload at output. Also, it provides 90 kW continuous at an ambient temperature of 56 degrees C. The AXA 2400 Compact is equipped with the patented Plug & Play system. The magnetic wave-shaping topology ensures a clean input power with a unity power factor and a current THD less than 5 percent.

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This Month's Featured Equipment:

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- (1) 1996 NMC-Wollard, Model 140-F-12, Ford 300 gas, Allison trans, 12,000 DBP.
- (1) 2003 Navistar 4300, DT466 diesel, with Smith, 22-ft high-lift cabin service body.
- (1) 2014 TUG, Model GPU400/90/III 90 KVA with 28.5 VDC rectifier, 600 hours.
- (3) 2000 NMC-Wollard, Model TC-888-D, beltloaders, Deutz F4M1011, Ford C-6.
- (2) 2015 NMC-Wollard, Model 60DC baggage/cargo tractors, 3.3 Cummins tier 3, 5K DBP.

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How Do You Address Challenges?

When faced with an obstacle, the right frame of mind can be valuable and help us find the best solution.

The United States and United Kingdom recently enacted a ban on laptop computers, tablets and other devices larger than a cell phone. The U.K. ban applies to flights from Egypt, Jordan, Lebanon, Saudi Arabia, Tunisia and Turkey, while the U.S. ban enacted by the TSA is in regards to flights from 10 airports in the countries of Jordan, Egypt, Turkey, Saudi Arabia, Morocco, Qatar, Kuwait and the United Arab Emirates.

With the new rule taking effect on March 25, organizations like IATA have called for government officials to seek alternatives to the new security measures.

While we wait to see if requests like IATA's are addressed, Emirates took a different approach as it announced that the airline will introduce a new passenger service that allows customers flying to the United States via Dubai to use laptop computers and tablets until moments before they board.

This solution will allow travelers to use their electronic devices on the first portion of their journeys and during transit in Dubai. When it's time to board their flight to the U.S., customers will then declare and turn in their devices to security staff at the gate.

Emirates says the devices will be packed into boxes, loaded on the aircraft and returned to the customers once they've reached their U.S. destination – all free of charge.

Customer service is paramount in every industry. And the plan announced by Emirates is a great

example of a company adapting to serve its customers even when a situation is out of its control.

Emirate's plan may be a short-term solution now. But perhaps it will lead to a permanent solution for all airlines flying to the U.S. or U.K. from these designated airports.

The right frame of mind can help us all solve problems. Although Emirates would almost certainly prefer to use its manpower and resources for other tasks, remaining focused on a long-term goal – in this case, continued customer satisfaction – is more important.

Now look at your work place and the challenges you need to overcome. What is a better use of energy, time, etc. – fretting over factors out of your control, or finding a solution that will benefit your company and the customers it serves?

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