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SEPTEMBER 2018

Ground Support

WORLDWIDE
EQUIPMENT – SERVICES – HANDLING

THE GLOBAL ISSUE

- IGOM's Impact on Industry Standards
- The State of Ground Handling
- India's Burgeoning Pharmaceutical Trade
- Russia's Ground Handling Industry is on the Verge of Breakthrough
- Should U.S. FBOs Adopt a European Model?
- Stuttgart Airport Upgrades IT System



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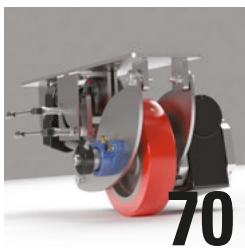
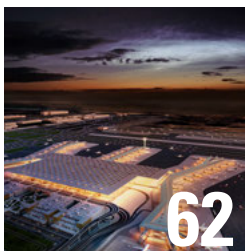
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Bigger is Better

Between the second annual Global Issue and the GSE Expo, we at *Ground Support Worldwide* have a lot to share with you.

I cannot wait to see everyone at the International Airport GSE Expo. We have been preparing for this event since the last expo ended in 2016, and the 2018 edition is going to be the best event yet!

The indoor exhibit hall is bigger, and the outdoor exhibit space is bigger, too. In fact, this year we have grown by more than 40 companies, equaling more than 25,000 square feet.

In case you missed it ... WE ARE BIGGER!

Besides the show being expanded, this magazine issue is the largest folio that we have had in over a decade -- more news, more products, more articles. In this issue, which we refer to as The Global Issue, we cover ground operations all around the world.

As always, thanks for reading!



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► Upcoming Events

Sept. 30-Oct. 2
ACI-NA Annual Conference and Exhibition
Nashville, TN

Oct. 2-4
IATA Global Airport and Passenger Symposium
Athens, Greece

Oct. 16-18
NBAA-BACE
Orlando, FL

Oct. 16-18
TIACA International Air Cargo Forum and Exhibition
Toronto, Canada

Nov. 12-14
ACC Annual Conference and Expo
Southampton, Bermuda

Nov. 15-16
IATA Alternative Fuel Symposium
Singapore, Singapore

Jan. 19-Feb. 1
NBAA Schedulers and Dispatchers
San Antonio, TX

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RIO ALL-SUITE HOTEL AND CASINO
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BUSINESS BUZZ

► TOP NEWS

STS Aviation Group Enters GSE Services Market with New Division

STS Aviation Group announced the launch of STS GSE Services, a company based out of Melbourne, Fla., that's dedicated to offering cost-competitive maintenance, refurbishment, spare parts and warranty services to the aircraft ground support equipment market.



Mark Smith, Group President of STS Aviation, will oversee the operations of STS GSE Services alongside Gabriel Girard who has been promoted from his former role as Operations Manager for STS Mod Center to Director of Operations for STS GSE Services.

In addition to servicing aircraft ground support equipment at its aircraft hangar facility in Florida, STS GSE Services will soon begin troubleshooting and repairing GSE at STS' growing network of line maintenance stations across the United States and Bahamas.

"Servicing GSE equipment will be at the center of what we do, there's no doubt about that, but our team will also focus on refurbishing old equipment, selling spare parts and offering extended warranty services," says Girard.

Air BP Presents Carbon Offsetting Program for Business Aviation

Air BP highlighted its pioneering carbon offset program for business aviation in Brazil at LABACE, the largest business aviation conference and exhibition in Latin America. Through this program Air BP offsets carbon emissions, via BP Target Neutral, related to the use of aviation fuel supplied to its customers.

This initiative supports the aviation industry's ambitious targets set by ICAO of



achieving carbon neutral growth by 2020 and a 50 percent cut in total emissions by 2050, relative to 2015.

"We are very proud to present such an important initiative during LABACE. We are offering our business aviation customers the opportunity to proactively work towards achieving the industry's ambitious carbon reduction targets by offsetting the emissions from the aviation fuel used in their flights, as part of their wider carbon management programs" says Ricardo Paganini, General Manager, Air BP South America.



Bakersfield Jet Center Awarded IS-BAH Registration

Bakersfield Jet Center, located at Meadows Field Airport, Bakersfield, Calif., has successfully completed an International Standard for Business Aircraft Handling (IS-BAH) registration.

A full service FBO, the company has been owned and operated by the Loyd family since 1958 and offers aircraft fueling, maintenance, parts, storage, charter, aircraft sales and management.

"At Bakersfield Jet Center, our team believes that safety and service go hand-in-hand which provides the foundation for a great customer experience," said Steven Loyd, President. "With an internal safety core anchored by the standards within the IS-BAH registration program, we are able to provide the safest operating environment

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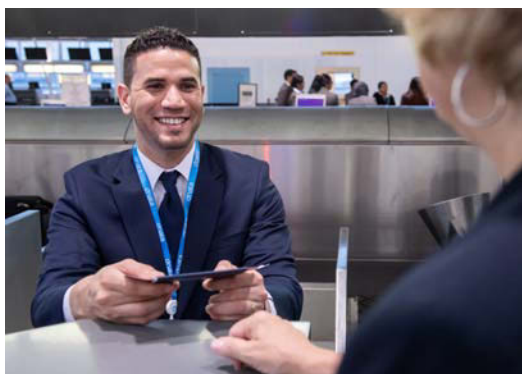
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possible for all our stakeholders.”

IS-BAH was established through the efforts of the International Aviation Business Council (IBAC) and the National Air Transportation Association (NATA) as a global code to identify and promote the use of industry best practices by means of a progressive Safety Management System (SMS) for both FBOs and Business Aircraft Handling Agencies (BAHA). It follows the format and structure of the International Standard for Business Aircraft Operations (IS-BAO) program and incorporates many of the guidelines of the NATA Safety 1st Ground Audit Standard and elements of NATA's Safety 1st Program.



dnata Launches Passenger Services at JFK

dnata has launched passenger handling operations at New York-JFK Airport. The launch customer is Copa Airlines, the flag carrier of Panama, which operates four daily flights with an annual capacity of 364,000 passengers between New York and Panama City using the Boeing 737 aircraft.

Including Copa Airlines, dnata's global ground handling operations now serve over 270 airlines at 75 airports in 13 countries.

“Commencing passenger handling operations at New York-JFK is an important milestone for dnata in the USA. Expanding our passenger services portfolio is part of our overall strategy to offer a full range of quality ground handling services in all of our

27 airports in the country. With our dedicated team and passion for service excellence, we continue to deliver the promises our customers make, while ensuring the highest level of safety across our operations,” said David Barker, CEO of dnata USA.

Significant Growth in Aviation Jobs Expected

The International Air Transport Association (IATA) published the results of a global survey of Human Resources professionals in the aviation industry, highlighting key challenges in talent acquisition, training and retention.



Among the results, more than 73 percent of respondents expect the major areas of job growth to be in ground operations, customer service and cabin crew.

Finding new talent is a challenge for 48 percent of the respondents, both because of the lack of availability of candidates with the right skill levels and qualifications as well as, in some cases, salary demands of new applicants. What's more, the HR professionals identified career progression opportunities (49 percent) and development and training (33 percent) as high priorities in job satisfaction and retention.

Only 28 percent of respondents reported that current training is effective, with many organizations seeking to complement their in-house training with external partners to improve the effectiveness of the training.

“It is an exciting time to be in this business,” said Guy Brazeau, IATA's Director of Training and Consulting. “We were really looking forward to receiving the results of this industry survey and we hope it can be helpful to guide HR professionals in their decisions regarding staff-

ing planning, training opportunities and areas to focus on as our industry grows to unprecedented levels.”



Power Stow Receives Southwest Airlines' Equipment Provider of the Year Award

Power Stow was recently named as Southwest Airlines' Equipment Provider of the Year. The award was presented to Power Stow in recognition of meeting or exceeding Southwest Airlines' expectations for on-time deliveries, equipment reliability, customer service, parts support, training and adding value to their operations as a primary equipment partner. Power Stow also received this award in 2015.

“My co-workers and I are very honored to be recognized by Southwest Airlines,” Ben Reeves, Vice President of Power Stow Americas, said. “We strive every day to provide a highly reliable product on time with world class customer service. We truly appreciate the relationship that we have with the folks at Southwest GSE.”

“From proof of concept to the decision of making Power Stow a standard piece of equipment in our fleet, the Power Stow team has done an outstanding job throughout the entire process. As a result of their outstanding performance in 2017, we at Southwest are honored to present this award to Power Stow again,” added Larry Laney, Director of Ground Support for Southwest Airlines.



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Pushing Forward

NBAA Annual Compensation Survey Shows Business Aviation Salaries are Up

The 2018 NBAA Compensation Survey results reveal that industry salaries are on the upswing, with several positions reflecting double-digit growth on average compared to survey results from 2017.

This year, 790 NBAA operating member companies participated in the survey by providing compensation and benefit data for 4,130 employees – the survey's largest data set to date.



Across all 16 surveyed job descriptions pay increased by 3–4 percent on average. The categories seeing the biggest increases, according to the audited data, were aviation department managers (managers who don't fly), up 30 percent in total cash compensation to \$205,000; maintenance foremen, up 14 percent to \$127,000 and senior captains, up 12 percent to \$164,000.

"The survey shows that our members are adjusting and keeping up with industry trends," said Peter Korns, NBAA's manager, tax, operations and workforce engagement. "As our industry continues to work to attract and retain quality talent we are seeing real efforts to fairly compensate pilots and mechanics who may otherwise seek out alternative opportunities."

The overall increase, he said, "is on par with expectations, however we see some significant decreases in dispatcher and line service personnel salaries (12 percent and 10 percent, respectively), which is cause for further analysis."



NAS Introduces Pearl Assist Baggage Delivery Service at Kuwait International Airport

National Aviation Services (NAS) has introduced the Pearl Assist Baggage Delivery Service at Kuwait International Airport. This service allows passengers arriving at the airport to have their luggage delivered to their doorstep allowing them to exit the airport faster without waiting for the checked-in baggage.

The Pearl Assist Baggage Delivery Service is open to all passengers flying any airline arriving at the Kuwait International Airport and the luggage can be delivered to any area in Kuwait.

The NAS Pearl Assist team will ensure that the luggage is kept safe and secure during the whole process. Bags are safely sealed at the luggage belt and scanned for tracking. This seal will be intact until the bags reach a customer's doorstep. They will receive SMS messages on the status of the luggage at different stages of collection or delivery.

GOL Introduces SITA Self Bag-Drop at Rio de Janeiro International Airport

GOL, Brazil's largest airline, is introducing new self-service bag-drop technology to speed up the airport

experience. Passengers of the carrier, can now use SITA's Scan&Fly to check in their bags when flying domestically from Rio de Janeiro International Airport and will soon be able to do so at São Paulo–Guarulhos International Airport as well.

GOL, which flies around 32 million passengers annually, is attempting to reach the targets set as part of the IATA Fast Travel program.

"GOL has always pioneered the use of innovative processes," Sergio Quito, Vice President of GOL Operations, said. "Self-service is important for us because it improves the customer experience and helps streamline our operations. SITA's self bag-drop technology provides what we look for – it is fast, reliable and easy to use."

SITA is retro-fitting Scan&Fly units at each airport. As well as the units themselves, SITA also provided consultancy to develop the optimized processes in both airports, integrating the solution into the airlines' and airports' infrastructures.

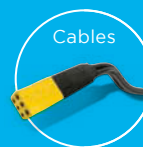
"Our goal is to use technology to improve the passenger experience and to make airline and airport operations more efficient," Elbson Quadros, SITA Vice President, Latin America, said. "Our self bag-drop solution does exactly that. We are proud to have GOL as the first airline to adopt this technology in Latin America."



Universal Aviation Mexico Opens Fifth Hangar at MMTO

Universal Aviation Mexico, a joint venture between Avemex, and Universal Weather and Aviation, Inc. to provide ground support throughout Mexico, has officially opened its new \$3.5 million, 50,000 square-foot hangar on the





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property of their FBO at Toluca International Airport (MMTO).

"Both based and transient, non-based operators at Toluca have struggled to find parking and hangarage due to shortages in recent years at this already congested airport. That challenge is only exacerbated during high-traffic periods like the annual Mexico City F1 race and American Football games in Mexico City, so we made this investment in this fifth Universal Aviation Mexico hangar at Toluca to meet that growing demand," said Greg Evans, Chairman, Universal. "Along with the multi-million-dollar renovation of our state-of-the-art FBO two years ago, our new hangar is recognition of our commitment to supporting our clients' critical missions at this important destination for business aviation."

"We built this 'low-movement hangar' to meet the parking and hangarage shortages at Toluca without compromising safety by either positioning aircraft extremely close together or having to make excessive movements to get in and out," said Agustin Lanzagorta, President of Grupo Avemex. "We've seen tremendous interest in the new hangar and have already secured many base tenants. We're excited to now have more capacity to protect our customers' aircraft and ensure our customers have a safe place to protect them from the extreme Toluca weather."

► PEOPLE

Delta Cargo Appoints New Operations and Customer Experience Managing Director

Delta Air Lines Cargo has appointed Rafael Figueroa as Managing Director – Cargo Operations and Customer Experience, a role previously



held by Julian Soell.

Effective this Fall, Figueroa will transition from Aeromexico Cargo to Delta Cargo to lead a team of over 1,600 employees, managing Delta's worldwide cargo operation to deliver industry-leading customer service. This appointment is part of an international talent exchange program between Delta and Aeromexico, which aims to share best practices and skills across all areas of the business.

"Rafael brings extensive experience to Delta – not only through his knowledge of the cargo and ground handling industry, but also through his understanding of the Latin America market," said Shawn Cole, Delta Cargo – Vice President. "With his familiarity of Aeromexico, we will also be able to deepen and strengthen the cargo joint cooperation agreement (JCA) between Delta and Aeromexico, as well as continue the momentum of providing industry leading operations and customer service."

With 12 years in the airline industry, Figueroa most recently served as Vice President for Aeromexico Cargo, with prior roles as Vice President – Ground Handling for Aeromexico and as Chairman of the Board for SkyTeam Cargo Alliances.

Air Partner Appoints Jack Burt as Vice President of U.S. Cargo

Air Partner announced the addition of Jack Burt as the lead of its U.S. Cargo division. In his new role, Burt will be responsible for the implementation of air cargo strategy throughout North and South America, as well as the overall establishment of the U.S. cargo division itself.

"We are excited to welcome Jack Burt to Air Partner's growing team of aviation experts and are confident that his skills and experience will provide tre-



mendous growth to our company," said David McCown, president of Air Partner's U.S. office. "We look forward to growing in the coming years with Jack and are excited to have him on board."

Before becoming the vice president of Air Partner's U.S. cargo division, Burt served as the cargo director for a number of other aviation companies where he led a large portfolio of clients and was responsible for overall sales.

Born Extends Swissport Contract Through 2019

HNA Group and Eric Born announced they have agreed to extend Born's contract as President and CEO of Swissport International AG to Dec. 31, 2019.



"Given Eric's outstanding leadership, his understanding of the airport ground services and air cargo handling industry, and his clear vision for Swissport's future, the company will be best served by his continued leadership as HNA evaluates the strategic options for its Swiss subsidiary," said Adam Tan, CEO of HNA Group.

Born has been serving as the President and CEO of Swissport since August 2015. During his tenure, Swissport further extended its global leadership and saw its profitability strengthened.

Continental Commercial Specialty Tires Names New Head of the Americas

Continental Commercial Specialty Tires has appointed Pavel Prouza the head of sales and marketing for the Americas. In this role, he will oversee all material handling, earthmoving and agriculture tire business in North America, Central America and South America.





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He will report directly to Enno Straten, the global head of Commercial Specialty Tires.

"With his experience at the headquarters and his deep knowledge and experience in the Americas, Pavel Prouza heading the team will further strengthen our position in the American markets," Straten said.

Prouza succeeds Federico Jimenez, who is joining the Commercial Specialty Tires team in Spain as the key account manager for EMEA (Europe, Middle East and Africa).

Hatz Adds to Inside Sales Staff

Hatz Diesel of America has promoted Vicki Zarletti to Inside Sales Coordinator as part of its continuing

program to expand customer support throughout North America.

Zarletti has been a valued member of the Hatz family for more than 20 years and has served in several sales support positions within the company. She will assist in quoting and processing engine orders, production scheduling, customer forecasts and marketing support.



► NEW DEALS

PrimeFlight Aviation Services Begins Into-Plane Fueling for Southwest Airlines at TPA

PrimeFlight Aviation Services began into-plane fueling operations on behalf of Southwest Airlines at Tampa International Airport (TPA) effective Aug. 1.

"PrimeFlight is excited to expand its



relationship with Southwest Airlines as well as expanding its fueling footprint," said Dan Bucaro, CEO of PrimeFlight Aviation Services. "This marks our entry into fueling at TPA, and we hope to continue expanding the presence of our fueling services into 2019."

Southwest Airlines operates more than 75 flights each day out of TPA, totaling more than 25,000 flights annually.



WFS Awarded Five-Year easyJet Ground Handling Contract in Edinburgh

Worldwide Flight Services (WFS) has been awarded a five-year ground handling contract by easyJet for its operations at Edinburgh Airport.

Commencing Nov. 1, WFS will provide passenger and baggage handling services as well as ramp handling for 13,000 easyJet flights a year. easyJet is the largest airline in Edinburgh and flies four million passengers a year from the Scottish capital to destinations across its European network including London, the Canary Islands, Cyprus, Denmark, France, Germany, Iceland, Italy, Northern Ireland, Portugal, Spain and Turkey.

"This is a major new contract that significantly supports our ground handling growth strategy. We look forward to delivering the highest standards of customer service and operational resilience in partnership with easyJet, underpinned by our shared commitment to best-in-class safety and security," said Will Facey, EVP Ground Handling, Europe Middle East Africa & Asia (EMEA) at WFS.

easyJet operates a fleet of 308 air-

craft on more than 1,000 routes to 154 airports across 33 countries. More than 300 million Europeans live within one hour's drive of an easyJet airport.

Menzies Oceania Wins Cargo Contract with Virgin Group

Menzies Aviation Oceania has been awarded the Virgin Atlantic Cargo contract in Sydney, Brisbane and Melbourne. This five-year agreement will expand operations to include international long haul cargo handling into all ports in Australia.

"Our reputation in the cargo industry throughout the region continues to go from strength to strength after the significant investment in state-of-the-art facilities, processes and staff training and development," Stuart Key, VP commercial for Oceania and SE Asia, said. "We are extremely proud of the commercial and operational progress we are making with the Virgin Group, which can be attributed to the safe, secure and efficient service that our front line teams provide as well as the head office relationships built in recent times, led by the introduction of Suzanne Mullen as global key account manager."



Also, Menzies Amsterdam has renewed contracts with both FedEx and Kalitta Air.

FedEx renewed its long-standing ramp and cargo contract, and Menzies will continue to handle a daily freighter into Amsterdam Airport (AMS).

United States-based cargo carrier Kalitta Air also renewed its contract for ramp handling at AMS, in addition to moving their cargo handling to Menzies.

"This good news is thanks to the hard work and dedication of both ramp



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and cargo teams at AMS, which I'm sure made it an easy decision for FedEx and Kalitta Air to renew with us for another term," Miguel Gomez, senior vice president continental Europe, said.

TSAS signs major deal with Air Transat

Trans-Sol Aviation Service Inc. (TSAS) has entered into an agreement with Air Transat, as part of which TSAS will provide passenger services and cabin grooming in Air Transat's aircrafts in Montréal as of this November. Both



companies are already partners at the Québec City Jean Lesage International Airport and the Montréal-Trudeau International Airport.

"Over the years, TSAS has stood out through its excellent service and commitment," said Jean-François Lemay, President and General Manager, Air Transat. "We therefore gladly add pas-

senger services and cabin grooming for our aircrafts in Montréal to the services already provided by TSAS in this city."

"We are thrilled by the trust Air Transat has placed in us," said Denis Jacob, President and CEO, TSAS. "This is an important milestone for TSAS, as we now provide all services in Montréal, thereby giving us a distinct edge with regard to our overall growth and prospects moving forward."

Sea-Tac Security Increased After Ground Handler Steals Plane

Port of Seattle Commissioner Courtney Gregoire addressed security measures following the incident.

After a "one-in-a-million" scenario, Seattle Tacoma International Airport added temporary security measures in cargo areas and terminals, according to local reports.

On Aug. 10, 29-year-old Richard "Beebo" Russell, a ground handling agent working at the airport, stole a turboprop plane from Horizon Air and stayed aloft for more than an hour before crashing the aircraft into Ketron Island in Puget Sound.

Russell died in the incident, but no one else was injured.

In a press conference following the incident, Port of Seattle Commissioner



Courtney Gregoire

Courtney Gregoire said all security protocols were handled appropriately.

"Just about 18 months ago, when we took a look at some of our options for improving

security, we implemented physical security screening for all airport employees. That means, of course, all employees who work at the airport get a security badge. They've gone through a federal background check with the TSA, that's a 10-year background check, and that badge is renewed every two years," she said.

"But to make sure we were thinking about human factors in the operations of this airport, we added employee security screening—physical screening like you experience when you go through and travel through this airport," she added. "We're one of the only airports in the country to do this when we took that voluntary leap."

The Seattle Times reported that Russell was one of approximately 13,600 people with access to aircraft at Sea-Tac.

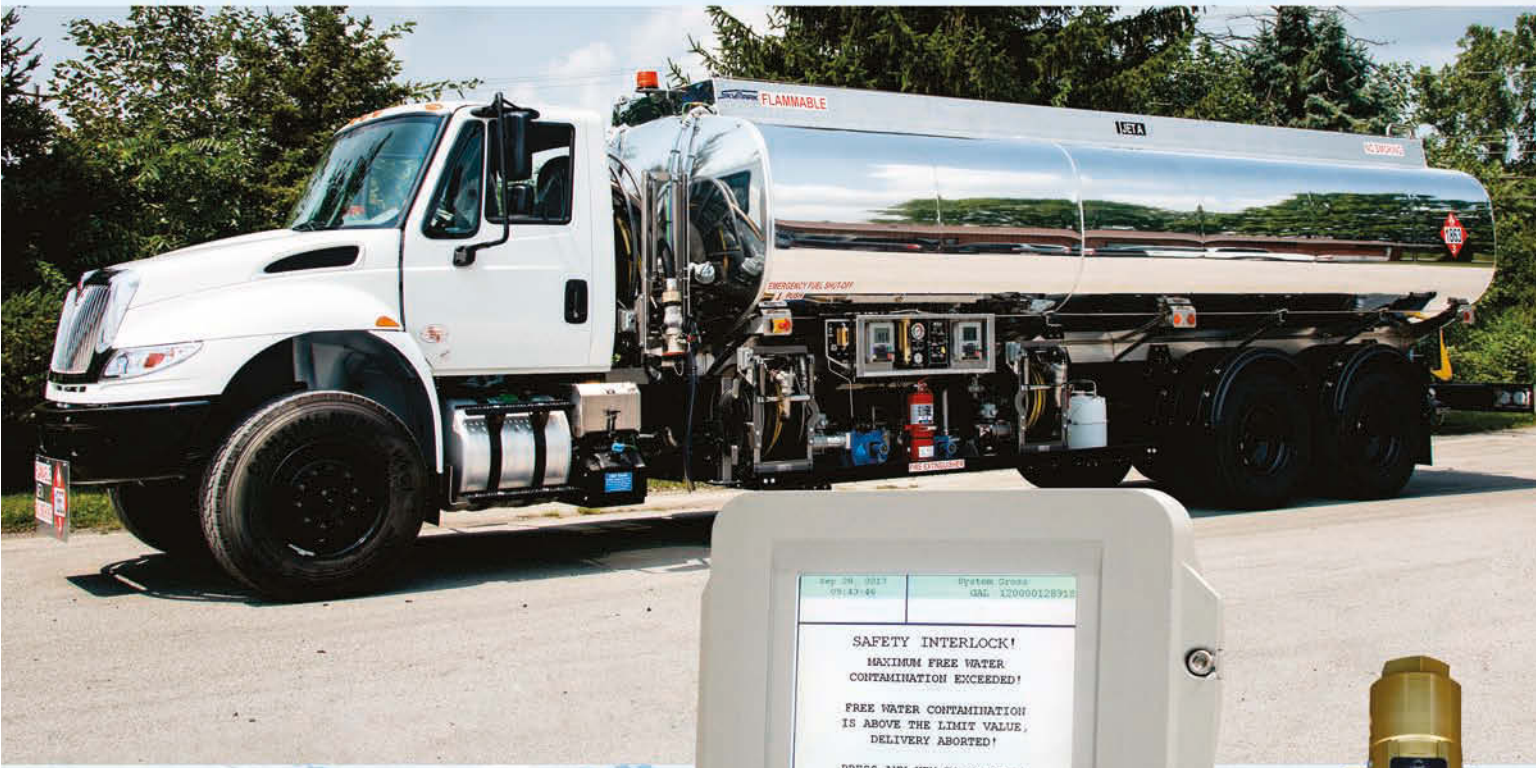
As a result of the incident, Gregoire



said during the press conference she expected a larger national conversation about security to take place, involving federal government review of regulations.

Sea-Tac officials said approximately 75 flights were delayed the night of the incident while nine flights were diverted to other airports and five others were cancelled. Operations returned to normal by 1 a.m., according to the airport. **GSW**

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Reducing Replacements with Proper Shift Control Maintenance

Regardless of the type of shift control used on your GSE, proper maintenance is essential to avoid unwanted expenses and challenges.

By Brady Haugo

Shift controls are some of the most used and abused components in ground support equipment. Cycling through many times each day, the proper maintenance of these small but essential components can mean the difference between downtime and replacement parts and a longer lasting lifespan of your fleet.

A direct drive shift control connects to a cable, which has two main parts – the inner cable and the outer sheath. The inner cable will slide within the outer sheath. The inner cable will move depending on the gear that has been selected. The opposite end of the cable is connected to the transmission's gear selector.

An electric shifter uses electrical signals to make or break contacts to communicate the desired gear.

Regardless of the type of shift control used on your ground support equipment, proper maintenance is essen-



Photo courtesy of United Equipment Accessories Inc.



tial to avoid unwanted expenses and challenges.

Wear and Tear

Shift levers in ground support equipment take a surprisingly rough beating.

Over time both the transmission and the shifter can begin to wear down, more so on direct drive cable shifters. If this wear and tear gets bad enough, the shifter may not indicate the proper gear anymore. Wear within the transmission may create 'play,' or dead band, that requires more movement from the shifter.

Shifters with switches, either rotational or linear, can also be affected by wear and tear. If the shift positions are altered by wear and tear in the shift lever or gate pattern, the

switch may not adequately make the proper contacts, which will cause shifting issues. Very high cycling can cause the switches on shifters to malfunction.

Some import cable shifters don't harden the shift levers. Over time a non-hardened shift lever, without any other type of wear protection, can dig in and create deep grooves across the shift lever. This can be dangerous as the shift lever can eventually break off and leave an exposed sharp edge.

A less common, but easily avoidable wear and tear issue that can occur is when the shift lever can bend if excessive load is placed on the lever, such as an employee using it as a support handle for climbing into the vehicle. The gate pattern can also become damaged, which would allow the shifter to come out of or into a gear easier. Over time, the shift lever and gate pattern can become so worn out that they need to be replaced.

Indicator Lights and Switches

Shift indicator lights can burn out, which can happen on a normal schedule after so many hours. Or it can occur because the shifter has experienced very rough conditions and rattled the light bulb enough to damage it.

Excessive Vibration

Excess vibration can wreak havoc on many intricate assemblies like electronic shift controls. The ground support industry is notoriously hard on items. A lot of the hardware within a shift is susceptible to loosening up.

In addition, excess vibration can also damage wire harnesses within and exiting the shifter. Over time, if a wire rubs on a hard edge, it can slowly remove the wire harness covering. When this happens often enough, the copper wires within the harness can become exposed and actually short out on the shifter or break.

Mounting Hardware

If the mounting bolts loosen up, the shifter may move slightly, which can place additional stress on some of the mounting tabs. It's possible if the mounting hardware loosens up, it can break off some of the mounting tabs.

Proper Maintenance

A properly installed shift control should not have any issues for a long time. While there is no real set standard for when maintenance is needed, the user should do a visual inspection upon entering the vehicle to make sure it appears functional.

The shifter again should be visually inspected and shifted during regularly scheduled vehicle maintenance to make sure it is functioning properly. At this time, the harness should also be visually inspected to ensure nothing is wearing away the wire protection.

The most common maintenance needed, if any, will usually involve tightening hardware or replacing components. If components need to be replaced it is important to determine if the part is available and the lead time to determine the best course of action. If the issue is caught early enough, it's possible to send the vehicle back into service while the new part is on order, as to not have any downtime.

Identifying early signs of the issues means you can usually rectify the problem before the component needs replacing. Loose hardware, worn gate patterns and shift levers can be easily caught if attention is paid to these small items. If they are not caught, they can eventually lead to bigger issues and higher maintenance costs.

The benefits to a properly maintained shift control are numerous, all of which will contribute to longer life span of the equipment. **GSW**



► ABOUT THE AUTHOR:

For the past seven years, Brady Haugo has worked at United Equipment Accessories (UEA) and is currently the Hydraulic Engineering Supervisor, leading his team and working on hydraulic swivels, shift controls and other custom projects.



IGOM'S IMPACT ON INDUSTRY STANDARDS

By Mario Pierobon

Over the past several years the IATA Ground Operations Manual has set a direction towards standardization, which most in the industry think should be followed.

A yellow aircraft handling truck with a crane arm is positioned on a wet, reflective tarmac. The truck has "CZECH AIRLINES HANDLING" and the number "1805" on its side. The crane arm is extended upwards. In the background, the tail section of an aircraft is visible. The sky is a clear, pale blue.

IATA member airlines have been contributing to the development of the IATA Ground Operations Manual (IGOM) since 2007. Over the past several years IGOM has set a direction towards standardization, which nearly everyone in the industry thinks should be followed.

"IGOM's early days saw little take-up from the airlines. The ground service providers (GSPs) however quickly identified the potential benefits of unified, consistent standards and a manual of references that would also align and match with the IATA Safety Audit for Ground Operations (ISAGO) and the Airport Handling Manual (AHM)," says Maurizio Anichini of consultancy Twiga Aero.

"Unfortunately, still today, many airlines do not fully adopt and implement IGOM," he continues. "IATA measures and provides statistics on the number of member airlines, which have undergone what is known as the IGOM gap analysis. This approach determines how many IGOM standards match, exceed or are below the IGOM standards. Measuring a gap analysis does not ensure its implementation."

"If we compare the previous versions of IGOM with the current version, the last version enables more options with certain procedures," adds Jan Abraham, quality manager at Czech Airlines Handling, providing handling services at Prague Airport. "If we look, for example, into the simple aircraft chocking procedure, we can notice that previous versions of IGOM provided one standard chocking for aircraft type. The latest versions provide options for aircraft chocking for the same aircraft type. Simple procedures should avoid variations and should have simple standards. There should be one

standard for aircraft chocking for one type of aircraft.”

On one hand, it can be said IGOM has not yet reached its full potential. On the other hand, it is also true that IGOM is progressively developing.

“We see it very positively about IGOM implementation. Most of the major airlines and GSPs are following IGOM as the base of their GOMs or standard operating procedures (SOP),” says Sachiyo Miyata, head of operational standards and key account support at Swissport International. “This has significantly supported the ‘standardization’ of ground handling. A challenge is that IGOM provides a set of minimum recommendations and airlines may have more

“The harmonization and integration of our procedures, aligned to IGOM standards, aim to meet high levels of safety and reliability for customer experience. This sets a benchmark, which we continuously strive to achieve and maintain.”

Procedural Development

While the standards on how to work the basic airline procedures for ground operations are fundamentally the same when a company decides to adopt and implement IGOM, the process requires a full procedural review.

“Many companies might find this an additional burden. However, all the standards point to the fact that SOPs must

commensurate with world-class ground operations – whether for an airline or GSP. Incidentally, the civil aviation authorities (CAA) have repeatedly spoken favorably on the procedures and concept of IGOM.”

According to Haddad, dnata stations perform a gap analysis to measure conformity levels and address any gaps that require alignment to IGOM as part of dnata’s quality management system.

“We continue to adopt, develop and maintain SOPs. We also recognize that there are operational differences between countries and airports that require local variations,” she says. “Adaptations are critical to reflect local airport regulations, equipment servicing, working environment (including language, different nationalities) and communication protocols. Likewise, as we service numerous customers across our extensive network, we need to complement these basics with specific requirements as per service level agreements (SLA) and airlines’ GOMs.”

Swissport is reviewing the corporate SOPs every year aligning IGOM updates with its subject matter experts from eight different regions, Miyata explains.

“IGOM is a minimum recommendation, so the customizations happen according to risk assessment, aircraft types, type of GSE, infrastructure and customer airlines,” she explains.

“The most difficult part, when adopting IGOM, is to change the way of thinking of the airline/GSP staff. Chapter 1 – Passenger Handling Procedures – needs significant customization by airlines as it is the part that mostly covers the difference perceived by the common airline/GSP customers/passengers,” notes Abraham of Czech Airlines Handling.

Safety Benefits

In addition to efficiency benefits stemming from standardized procedure, there are also safety benefits that can be derived from common and standardized ground handling procedures.

“The workforce on the ramp of the world should not be challenged with multiple standards to achieve the same task for the same aircraft type. They have enough to think about in terms of the sheer number



requirements than IGOM, therefore GSPs need to comply accordingly.”

“dnata top management has mandated the endorsement of IGOM across our dnata airport operations. IGOM has become our reference manual,” adds Chrystelle Haddad, quality and compliance manager at dnata.

undergo a yearly review, as a minimum, possibly more frequently in the event of operational, infrastructural or other changes linked to operations and policy,” says Twiga Aero’s Anichini. “The extra burden is now removed, and the way is opened for the implementation of a robust set of procedures

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of procedural detail they need to remember in an unforgiving work environment,” says Anichini of Twiga Aero. “These professionals work in extreme weather ranging from -50 to +50 degrees C, they are exposed to blizzards and sandstorms, face floods and electrical storms and deal with heavy snow and volcanic eruptions. Do they really need to deal with an extra cone or chock on the same aircraft type just because the whim of a ground operations manager?”

“Let’s put this into the right perspective and make sound, common, uniform standards that make it easy and possible to turn the aircraft around in good time and in a safe environment. The benefits are clear: simple operational process that are applied consistently across a network.”

“This global approach to standards and processes can remove in part some complexities to our frontline, from having too many procedures and ways of doings. It lays the foundations for safety requirements for the operations. It also simplifies training and enhances consistency to follow the same standards regardless of where we operate in the world,” adds dnata’s Haddad.

While the IGOM standards provide safety benefits for airlines and GSPs, adopting IGOM should also mean performing safety risk assessment with respect to the IGOM provisions.

“Airlines and GSPs adopting IGOM should perform safety risk assessment in accordance with their own internal procedures. Airlines and GSPs have a safety management system (SMS) in place and usually apply safety risk assessments within their respective processes. When adopting any relevant internal or external provisions, including IGOM’s, or any other procedural changes, it should always require risk assessment,” points out Abraham of Czech Airlines Handling.

“We conduct risk assessments before adopting our corporate SOPs and set even higher standards than IGOM’s, e.g. technical steps to be used for opening cargo doors,” adds Swissport’s Miyata. We set more detailed requirements according to our risk assessment.”

“Safety is the baseline in what we do, and there is an increasing focus for IGOM to incorporate risks assessments. At dnata,



Photo courtesy of Czech Airlines Handling

safety risk assessment is an integral part of our SMS, commonly used for introducing new equipment, technology, process changes or failures in the operations,” Haddad says. “For example, in the turnaround activities, a risk assessment was recently done to assess GSE suitability with safe operating requirements for servicing new aircraft type.

“We still need to have our own practices, work instructions and conform to airline specifics, for the staff to implement on the ground,” she continues. “We also keep monitoring our procedures to ensure the operational requirements are documented and correctly implemented with ISAGO based audits, although IGOM is not yet fully integrated to ISAGO.”

A Strategic Choice

There are indeed several benefits to be experienced by airlines and GSPs when implementing IGOM.

“The alignment of operational standards from IGOM with the new ISAGO standards makes going through the ISAGO audit a ‘snap’ in terms of identifying the documented standards and sharing them

with the audit team. More importantly, migrating the standards and procedures from a GSP’s own to IGOM provides the company an opportunity to focus on what is important and eliminate the superfluous,” says Anichini of Twiga Aero. “Training courses that are based on the IGOM common standards are simplified and are easily and regularly revised yearly, in line with the IGOM publication cycle. This leads to conformance to airline standards – provided the airline has adopted IGOM – a ‘walk in the park’ exercise.”

Adopting, and more importantly, implementing IGOM makes good sense for a GSP because it simplifies the task of achieving consistency in operational service delivery.

“It makes it easy for a GSP to meet its customer’s requirements. Isn’t that what airlines are looking for?” Anichini continues. “And for airlines, adopting IGOM means ease of compliance, facilitated audits – if they choose to continue overburdening the ISAGO-registered GSPs with repetitive audits, and, more importantly, achieving a level of consistency across wide-spread networks, which are challenging to monitor.” **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 marioprnb@gmail.com.

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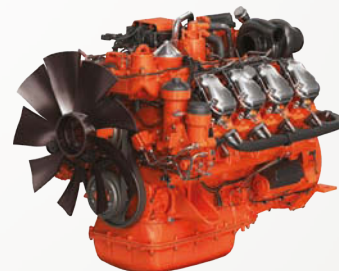
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THE STATE OF GROUND HANDLING

As the industry changes rapidly, ground service providers who don't adapt may find themselves left behind.

By Josh Smith

With interested parties from ground handling companies, airlines and airports gathered at the IATA Ground Handling Conference (IGHC) in Doha, Qatar, this April, Jon Conway offered an overview of the industry from the ground handlers' point-of-view.

Conway, who serves as director general of the Airport Services Association (ASA) and vice-chair of the IATA Ground Operations Group (GOG), points out that the industry is evolving rapidly. However, ground handling has been transforming for some time.

"The ground operations landscape has changed

over the years, significantly over the last 20–25 years," he explains. "And I'm talking about the move from self-handling to outsourcing ground operations by airlines."

Citing a recent presentation delivered by KPMG, Conway notes that in 2007, approximately 24 percent of the ground handling market was made up of independent ground service providers (GSPs). However, in 2017, approximately 50 percent of the market was independent GSPs and 50 percent was self-handled by airlines, their subsidiaries or airport owned ground handlers.

KPMG's projections suggest that 70 percent of

global ground handling will be completed by independent GSPs by the year 2022.

“That’s independent ground handlers, not airport authorities or airline self-handling,” Conway explains. “So our industry is getting larger and larger and larger, and I think it’s only right and appropriate that we should have a body like our organization to represent it.”

Industry Overview

Ground handling is a difficult business, and Conway does not foresee it becoming easier. A key reason for this is slim operating margins for GSPs.

“The **major global players** seem to have an appetite to **acquire** other businesses and I **don’t see that changing**. Generally, the **larger organizations** that acquire these ‘smaller’ businesses are **very robust** in terms of management systems; they also **invest very heavily in technology and their people**.”

While margins may be narrow, Conway says it’s important for ground handlers to work with airlines in order to survive and flourish.

“Airline activities once deemed core, are now outsourced,” he explains, adding airlines are trying to drive down costs and improve revenue streams by turning these items over to third-party handlers.

As an example, he says “who’d have thought 20 years ago, that airline weight and balance would, by many carriers, be seen as an activity ripe for outsourcing to specialist providers?”

Faced with these conditions, Conway also

believes the recent trend of consolidation will continue to impact the ground handling market. As “mom-and-pop” GSPs face thin margins, they eventually find their businesses can’t be sustained. That’s when large handlers can benefit.

“The major global players seem to have an appetite to acquire other businesses and I don’t see that changing,” Conway points out. “Generally, the larger organizations that acquire these ‘smaller’ businesses are very robust in terms of management systems; they also invest very heavily in technology and their people.”

While some ramp and passenger handling

He says there is also often a lack of real understanding in regards to what GSPs need to operate in an airport, but he believes that can be remedied by ground handlers becoming much more engaged with airport authorities and designers when facilities are redeveloped. He is keen to work closer with ACI on this.

“I think we need to be much, much smarter ... about working together to make sure that when an airport hands over the license to operate (to a ground handler), the handler is actually taking something over which is fit for purpose,” Conway explains.

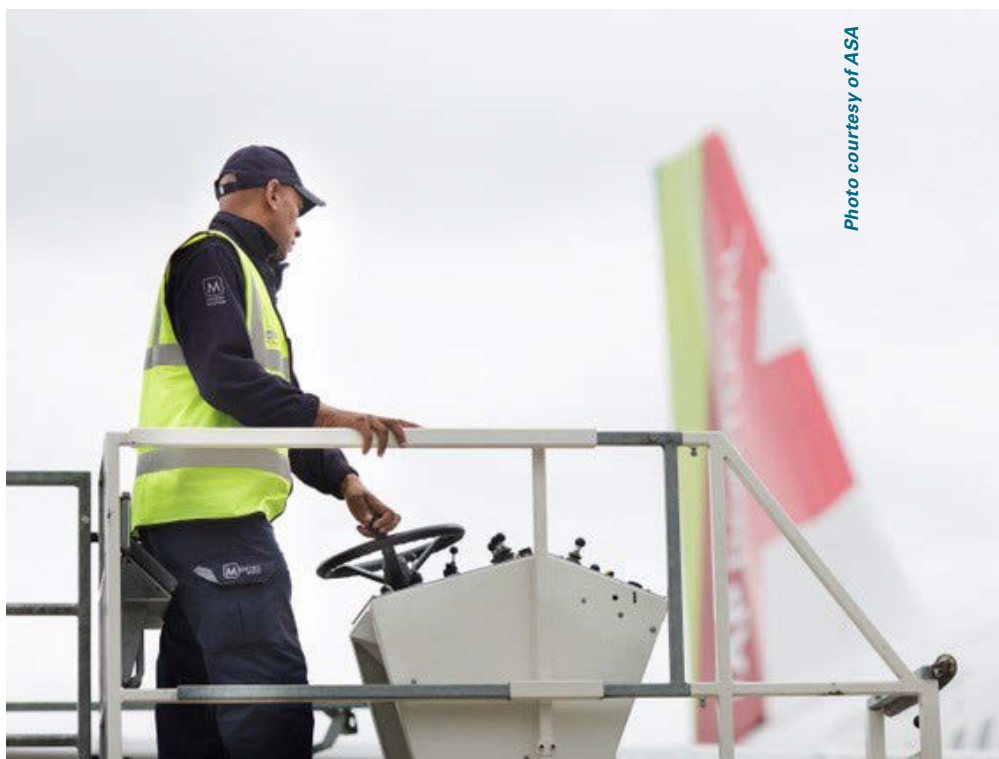


Photo courtesy of ASA

companies may struggle, cargo terminal operations may be a better business. However, Conway explains, cargo operators are also aware that their sector is changing thanks to companies like Amazon, which are having a big impact on the way cargo is shipped and how it is handled.

With the industry changing around them, Conway notes that ground handlers often feel like they are at the bottom of the food chain.

“Airlines still control the Standard Ground Handling Agreement and therefore much of what GSPs do, and how they do it,” Conway says.

Future Challenges

As GSPs adapt to key industry changes, Conway urges the industry not to reinvent the wheel when it comes to ground handling regulation.

Rather, Conway encourages GSPs and airlines to utilize programs like the IATA Ground Operations Manual (IGOM) and IATA Safety Audit for Ground Operations (ISAGO).

“We as an IATA group and we as the ground handling sector, would love everyone to embrace IGOM. Training, operational complexity reduction – there is no downside

to this model,” Conway says. “It is the way to go, particularly in challenging airport environments, where we already have more than enough complexity and operational risk.”

Conway adds that the ASA finds the principles of ISAGO – a robust audit model – to be very important as well.

“We actually like ISAGO,” he says, noting however that the ASA is not convinced that

“Some airports I’ve worked at required a minimum number of passengers or aircraft movements to enable a GSP to gain a license. The theory was that everybody could have a reasonable return on their investment and run a decent business,” Conway notes, adding that formulas already exist (across the EU for example) to calculate the ‘right’ number of ground handlers at a specific airport. “I per-

industry is well aware of the cyclical nature of the airline economic performance, taking note of the impact of oil prices and other geopolitical factors outside the airlines’ control.

“We would all love to see sustainable, profitable ground handling businesses, but we’d also like our customers to be equally sustainable and profitable ... and that has always been a challenge,” he says.

The forecast growth in air passenger (and cargo) traffic over the next couple of decades will require massive infrastructure investment.

“I don’t know how all these passengers are going to be handled,” Conway says. “It’s clearly going to require major investment in infrastructure, technology and process reengineering. I am actually quite optimistic that some of the existing pain points at airports will be, by necessity, improved with the use of technology and re-imagining of legacy processes and procedure.

Lastly, technology will have a tremendous impact on ground handling – just as technology has influenced other sectors of aviation. Conway believes fundamental change is coming to ground handling, both above and below the wing, courtesy of technological advancements such as autonomous vehicles and other automated processes.

“At the moment, we employ hundreds of thousands of men and women across the world to load bags into aircraft containers or narrow bodied aircraft. There already exists robotic solutions for this activity and, in my view, certainly in green-field sites in developed countries, we will see robotics taking off. I’m absolutely convinced.”

Continued Change

Conway looks to CEOs and presidents of the major ground handling agencies to constantly look for ways to reinvent themselves -- how GSPs work with their customer airlines, being cognizant of airlines’ cyclical nature of profitability, seek new business lines and find ways of sweating existing assets.

“I think that if we just sit back and say, ‘Well this is how we’ve always done it,’ I think we might find we get left behind,” he warns. “However, when I talk to our industry leaders, I can sense a genuine optimism. I think they see a bright and interesting future.” **GSW**

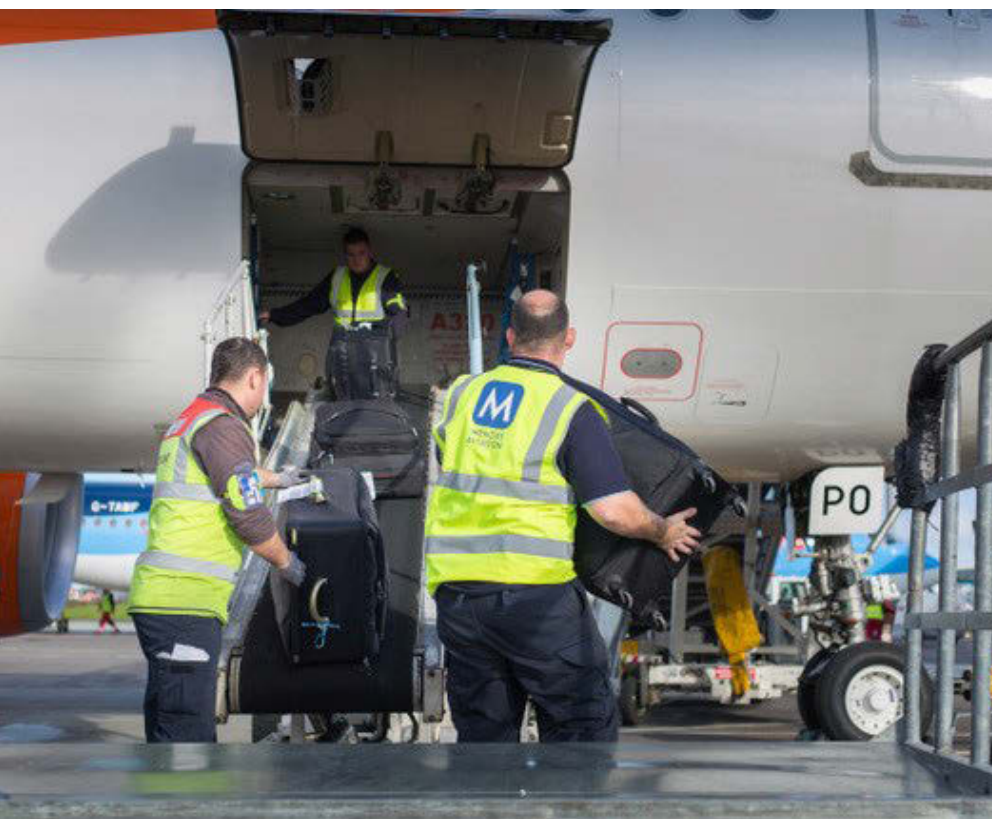


Photo courtesy of ASA

ISAGO has helped reduce the number of un-required, or redundant, audits. “We still see the ground handler with ISAGO accreditation, registration, and we see an airline coming in and doing an audit – and not necessarily because their regulator, or civil aviation authority, has told them to go and audit their provider.

“So there’s still some work to be done on ISAGO.”

Competition is another sensitive topic in ground handling, Conway notes. On one hand, a sole provider may not be pushed to do the best job possible. But on the other hand, too much competition can spur a race to the bottom in terms of price.

Neither extreme is beneficial.

sonally think there’s merit in a global approach to this issue.”

What’s more, agent turnover has been an ongoing struggle for many independent ground handlers. Providing two extreme examples, Conway says a specific airport in North America cited staff turnover of 160 percent. Meanwhile a colleague from Africa estimated a 0.1 percent turnover rate, preventing new people from becoming involved in the industry.

“So our industry is rife with very different people challenges,” Conway notes. “I think we, as an industry, have some work to do on the people side, especially in terms of ground handling as a career choice.”

Additionally, Conway states the handling

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Get the SAP Out

As the aviation industry steps forward in its efforts to meet the 2020 deadline to remove SAP filter monitors, three potential solutions rise to the surface.

By Ronnie Wendt

Today, most fuel uplifted into commercial aircraft flows through a filtration system known as a Full Flow Monitor, which is designed to remove both water and solids.

The water is removed through absorption by what the industry refers to as Super Absorbent Polymer (SAP). More specifically, sodium polyacrylate.

“When sodium polyacrylate (or SAP), which is the same stuff that goes into diapers, reaches its saturation point with water, it literally stops the flow of fuel,” states John Leonard, refined fuels market manager for Facet Filtration. “It’s designed to prevent any water from getting into the fuel being put in the aircraft.”

However, under a variety of conditions, these “Pampers for the fueling industry,” as Leonard calls them, can leak small quantities of crys-

tal-like gel, which can move into the aircraft during fueling. There have been eight documented events where this has happened and caused operability issues for the aircraft.

The most serious of these incidents occurred in April 2010 in Surabaya, where both engines on an Airbus A330 lost thrust control after becoming gummed up with SAP. There were 309 passengers and a crew of 13 on board the Cathay Pacific flight. The crew successfully landed the plane at almost twice the normal landing speed. Fifty-seven passengers were injured in this event.

Since then, there have been seven similar incidents involving engine issues allegedly linked to fuel contamination from filter monitors.

The International Air Transport Association (IATA) convened a Special Interest Group in May 2014 to investigate these incidents and determine if there was a correlation between fuel control unit and/or hydro-mechanical unit operability issues and the presence of SAP. Participants in this group



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Chemical formula
(C₃H₃NaO₂)_n

included representatives from airframe and engine OEMs, aviation fuel filter manufacturers, airlines, airline associations and the Energy Institute (EI). The group determined there was no guarantee that SAP will not pass downstream of the filter monitor elements when in service.

Tom Muzik, business unit manager of Parker Velcon, sat on this committee. He states their investigation found “SAP filters do shed SAP in some amount – some more than others. But they do shed SAP, and they shed more SAP as differential pressure increases,” he says. “Therein lies the rub, we know that SAP at some level causes an issue, but it would take billions of dollars and years of research to figure out how much is too much.”

In an industry where safety is paramount, an unknown like this is unacceptable. As such, engine manufacturers have reduced their allowable SAP tolerance from 50 parts per billion to zero. And, the Special Interest Group decided, “We have to come up with an alternative solution that does not involve this particular polymer because of its propensity – under certain conditions – to go downstream,” Leonard says.

Differential Pressure Difference

The IATA group first recommended standardizing the differential pressure requirement for fueling. When a filter monitor becomes saturated and stops or slows the flow of fuel, there is a spike in differential pressure. This pressure is monitored by differential pressure gauges, such as those from Gammon Technical Products.

Differential pressure monitors were in place in the Surabaya incident, but an industry expert, who wishes to remain anonymous, reports “no one looked at them, believing there was a problem with the hardware – not the fuel. But what had happened is the operator had gotten lot of water into the fueling system. The filters stopped it, but they kept struggling to get flow. This eventually damaged the filters and pushed water and filter media into the aircraft.”

In the U.S., aviation differential pressure cannot exceed 15 psi. However, in other countries up to 22 psi of differential

“I’m **surprised** the whole industry is **not in turmoil** right now.

People are taking a wait-and-see approach, and my **biggest fear** for the entire industry is they will **rush into a decision** without any in-depth knowledge.”

– Marcus Wildschütz, president, FAUDI Aviation GmbH



pressure has been allowed in plane fueling.

“But, the IATA study found if differential pressure exceeds 15 psi, the possibility of the extrusion of this polymer goes up dramatically,” Leonard says.

IATA now requires operators to change the filter media at 15 psi and install an automatic switch that stops fueling when differential pressure becomes too high.

Airlines for America (A4A) reports that “A4A and its members have already taken proven steps to reduce the risk of SAP migration from filter monitors, and this includes lowering the fuel monitor differential pressure limit. We are also working together with our partners across the industry to evaluate alternative filtration solutions that do not utilize SAP.”

Proposed Solutions

Further study by the Special Interest Group revealed that addressing differential pressure was not enough. In fact, they found trace amounts of filter media can be released at any differential pressure. For this reason, the Special Interest Group decided to outlaw the use of SAP by December 2020; putting the date out into the future to give the industry time to develop alternatives.

Whether those options make it through an industry-mandated three-part certification process in time to meet the mandate, all equipment is retrofitted in time, and the industry can bear the financial costs of this change, are questions that remain.

Marcus Wildschütz, president of FAUDI Aviation GmbH, states he feels some unease as the industry marches toward the 2020 deadline.

“I’m surprised the whole industry is not in turmoil right now,” he says. “People are taking a wait-and-see approach, and my biggest fear for the entire industry is they will rush into a decision without any in-depth knowledge.”

“Today filter companies are scrambling to come up with alternatives to fueling an aircraft that do not involve full flow monitors,” Leonard adds. “There are three options on the table right now.”

The proposed options are:

Filter/Water separators (also known as filter coalescers). Taking everything back to filter/water separators, which were

effectively used before SAP filters became the norm.

Leonard says the positive is that this is “absolute proven technology. There’s no doubt that it works.” A water separator, however, is larger and heavier than its SAP counterparts, and complicating the change is existing equipment. “Existing fueling equipment is built to handle a full-flow monitor. Is it physically possible to swap in a water separator? In most instances, it is not,” Leonard says.

Though manufacturers are trying to make these units smaller and lighter in weight, Muzik states though “we can make them smaller and we can make them more compact, it will likely never get to the point where they’re the same size as a filter monitor. The reason monitors were created is because they were small, lightweight and compact.”

Water barrier approach. Currently in development with Parker Velcon, this system takes a 2-inch by 30-inch element and puts a wrap around the outside that repels water. “We’re taking a hydrophobic material that rejects dirt and water,” says Muzik. “It’s a very porous material that is small enough to block the water that’s in fuel, while letting the fuel through.”

Leonard maintains he’s seen qualification numbers and believes the system has good potential. The water the system collects will drop to the bottom of the housing, where an operator will need to drain the water off through a hole in the bottom of the housing at the end of each day. This is what is done currently with filter water separators.

“However,” Leonard says, “a filter water separator has a sump to collect water and a sensor to alert the operator. The typical monitor vessel does not have a sump or a sensor. As a result, there’s the possibility of collecting water in a vessel that’s not designed to do it. Operator vigilance will be a necessity.”

A Dirt Defense filter with a water sensor. FAUDI’s Dirt Defense filter (a micron filter) plugs in where the existing 2-inch monitors go, and it stops dirt from going downstream into the aircraft. The Dirt Defense requires a water sensor upstream of the filter vessel. Both FAUDI and Facet have successfully passed EI’s dirt defense

“**Today** filter companies are scrambling to come up with **alternatives** to fueling an aircraft that **do not involve full flow monitors**. There are **three options** on the table right now.”

— John Leonard, refined fuels market manager, Facet Filtration

testing protocol (1599).

“The Dirt Defense is available as a drop-in solution. We have raw materials in stock for 10,000 elements. It is easy to manufacture and deliver,” Wildschütz states. “This solution is ready.”

This solution will work, states Muzik because “most plane fueling applications have very low water. I say most because if you do have water, then what do you do? Shut down the entire fueling system, and then what do you do? You need to bring in another piece of equipment. You must bring a filter water separator over; this is a solution that has some hair involved in it. It also could have a very high dollar cost. There are some hydrant systems that are notoriously wet. In a very dry system, it will be a viable solution but unfortunately that’s not always the case.”

Putting Solutions to the Test

A4A reports that “Aviation fuel manufacturers are proposing a number of alternative filtration or sensor technologies that may replace filter monitors. In keeping focus on safety, our members are thoroughly evaluating any proposed solutions before they can be implemented.”

This fact prompts Leonard to state that “though Dec. 31, 2020, seems a long way off, it’s not.”

There is a global industry effort involv-

ing A4A, IATA, the Joint Inspection Group, filter manufacturers and the EI to fully vet new sensor technologies.

“The goal of this work is to identify safe and effective solutions that provide the same or better protection from dirt and water,” A4A officials say.

Solutions must first pass EI testing protocols before they can be used. First, the system needs to go through a real test on a real rig, then it must go through what’s called a robustness protocol, which puts the elements under severe stress, to see how it reacts in operation. Finally, there are field trials.

“Only after a new technology has passed all of these challenges is it fit for service,” Leonard says. “From the time you start your EI testing to the time you’ve passed field trials will probably take at least 12 months.”

Currently, only the Dirt Defense has obtained EI certification. However, this solution still must go through industry testing.

“A4A and JIG, which are the two governing bodies, have not accepted this solution as a valuable implemented device,” Muzik says.

However, Wildschütz states this process should go smoothly, noting that the Dirt Defense uses “microfiltration technologies, which have been used in the industry for decades. Other technology will need to be proven for a much longer time [in testing].

“All of these new technologies, because they are new, are going to use a free water sensor qualified to EI-1598, just to make sure the systems are absolutely safe,” he continues. “That’s not only for the field trial but also in actual use. You may be in a situation later with different environmental issues, and you want to be sure your system is really safe, because you want to be sure you are delivering safe fuel to the aircraft.”

Companies like Boeing, GE and Rolls Royce are calling the shots, however. These giants in the aircraft world have said they will no longer allow SAPs after the deadline. If an airline continues to use them and an incident occurs, the airline will be held liable.

“If they [engine manufacturers] won’t accept SAP, then the airlines cannot accept it, and it gets pushed down to everyone in the industry to correct the problem,” says

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Dan Murray, president of Total Control Systems. “I’d love to tell you that the industry is ready for this, but I think the reality is that Total Control Systems is ready. Our electronic automation and control can measure differential pressure and water in the fuel. We can provide trending and analysis for companies to manage their maintenance schedules, and while that’s a critical piece, the filtration companies will need to provide the solution to remove water in fuel.”

But what if these fuel filtration players cannot meet the 2020 deadline?

Leonard looks to what happened when the EI-1583 7th Edition came out. This standard said that under normal operating conditions an SAP cannot pass more than 50 parts per billion downstream. Industry associations, such as IATA, stated filter monitors had to be compliant to the 7th Edition by June 30, 2018.

The industry couldn’t meet the deadline.

“The demand was so high and so instantaneous, that we couldn’t keep up with demand. They ultimately had to extend that deadline to the end of 2018,” Leonard says. “Could we be looking at the extension of that Dec. 31, 2020, deadline? I have no idea. It all depends on where the industry is at with a qualified element, and the time it takes to convert existing equipment.”

Pay the Price

“The top consideration here is safety,” stresses Leonard. “The flying public has to be safe, there are no ifs, ands or buts about it. It’s just not acceptable to put water or particulate in an aircraft.”

But there is another consideration that is almost as important and that is cost. The financial implications of adhering to this mandate will be huge.

There are an estimated 15,000 pieces of monitor-style fueling equipment in the aviation industry, and Leonard states end users will probably pay approximately \$10,000 per piece of equipment to retrofit units with a filter monitor alternative.

“That is a cost to the industry of right around \$150 million dollars,” he points out.

Making sure equipment is retrofitted will fall on ground support companies fueling the aircraft. But the airlines, Murray says, “are going to have to ultimately pay for it,



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and they will pass that cost down to the consumer.”

“Ultimately it will increase the cost of fueling, and the ticket holder will pay the price,” Muzik adds. “The plane refuelers are not going to absorb this cost. They are on a razor thin profit level now. They’re going to pass it onto the airlines, and the airlines are going to pass it onto the customer.”

Though the deadline looms, Wildschütz asks that all players be very intentional as they decide their course of action. Muzik states they should be asking what it will

cost them to deploy the technology, what it will cost to maintain the technology and what solutions are optimal for their unique situation.

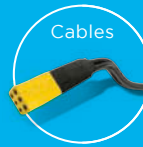
Wildschütz purports most airports do not have a fuel water issue, especially those in the United States, and recommends gathering data about water issues for at least six months before choosing a solution.

“This data,” he explains, “will give you a very good idea of what technology is best for you.” **GSW**



► ABOUT THE AUTHOR:

Ronnie Wendt is a freelance writer based in Genesee, Wisconsin. She specializes in writing about aviation-related topics and has been writing about them for a decade.



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It's all about connections

Russia's Ground Handling Industry is on the Verge of Breakthrough

Large investments by ground service providers and airports have increased the technical level of ground operations within the country.

By Eugene Gerden

Ground handling in Russia is steadily developing, which is reflected by the rapid introduction of new technologies and the end of the de-monopolization process within the industry, according to recent statements from leading ground handling operators and representatives of airports across the country.

In recent years, the level of quality of ground handling services provided at Russian airports has significantly improved. This has become true mainly due to large funds invested by airports and ground service providers in order to increase the technical level of their ground operations, which, in turn, resulted in the attraction of more foreign airlines.

Perhaps the biggest progress in this field was achieved by Moscow-based JSC Sheremetyevo International Airport, Russia's largest airport in terms of annual passenger traffic.

Several weeks ago, the airport – together with the Russian flagship airline Aeroflot and the local State Corporation for Air Traffic Management (which is an organization that provides air navigation services in Russia), has officially introduced a set of new methodologies and as well as control scenarios designed to address all types of failures during the conduction of ground handling activities within the territory of the airport and to prevent possible emergencies.

This involved the installation of a new joint decision-making system, known as A-CD, which combines the activities of airports, airlines and air traffic control units.

According to First Deputy General Director of Department of Production of Sheremetyevo Airport Andrey Nikulin, the system was developed on the basis of a single information platform "Synchron." Its introduction resulted in a 30-percent reduction of the time required to taxi aircraft from landing to the arrival zone. In addition, installation of the new system resulted in a 35-percent reduction in the time for taxiing from parking place to take-off zone.

Finally, total savings of aviation fuel as a result of

introducing new technologies in Sheremetyevo were equivalent to 320,000 tons per year.

Nikulin also points out the airport has developed 17 training cases and, together with its ground handlers, conducts weekly trainings of the alert level of its ground handling services. That helps make ground handling processes in Sheremetyevo more predictable and manageable in the case of any failures or emergency situations.

Moreover, this year Sheremetyevo completed installation of certain IT solutions, which allow users to monitor ground handling activities on the basis of almost 900 parameters, covering both standard and emergency situations. The IT systems collect the data of current ground handling operations at the airport, and transfer the data to a single information field of Sheremetyevo, which is located at its control center. From there, relevant decisions are made.

While Sheremetyevo has become the only Russian airport to utilize ongoing technical improvement of its ground handling operations, implementation of similar plans have been recently confirmed by representatives of other major airports.

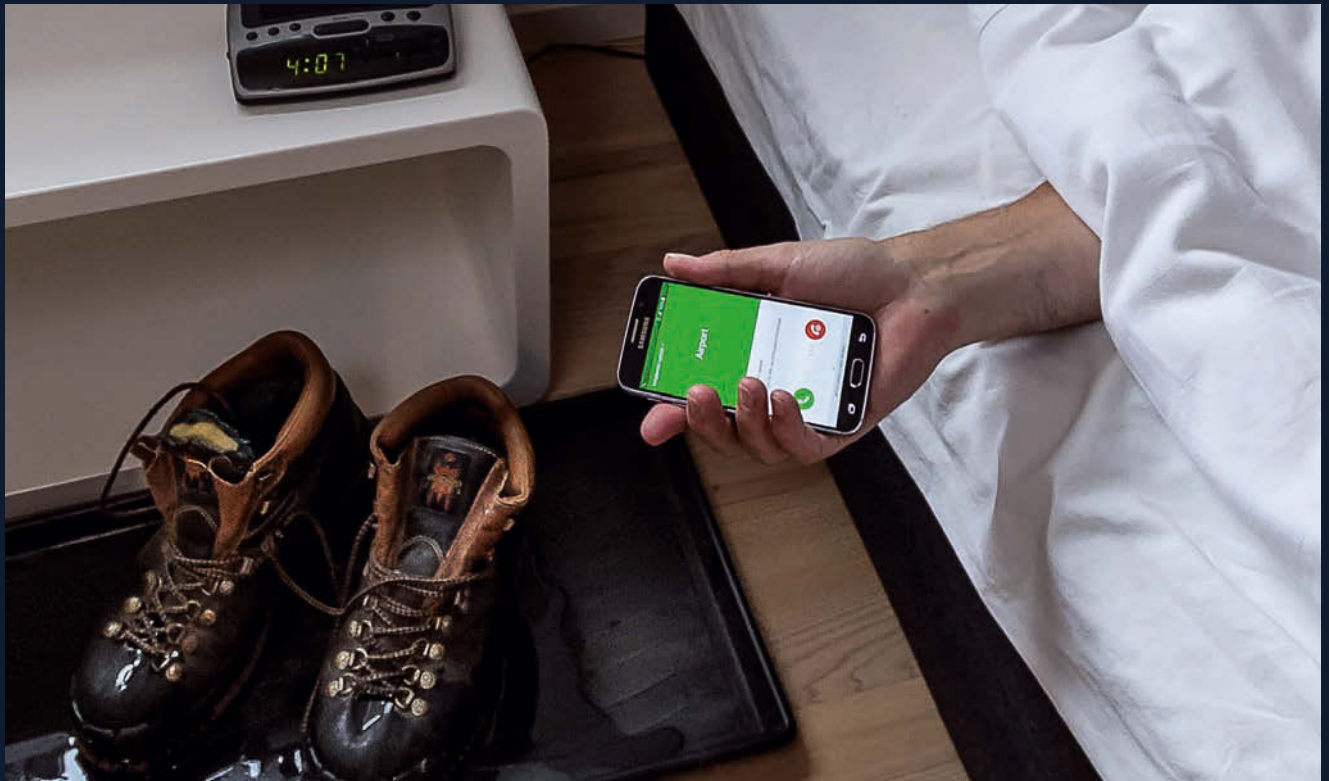
In recent years, many leading Russian airports have significantly optimized the procedure of aircrafts' deicing.

"During the period of the autumn-winter navigation, the deicing protection of almost all aircrafts was carried out with the engines running," says Evgeny Petrov, a senior instructor for deicing at the Moscow Domodedovo Airport. "As part of the plans of Domodedovo is a gradual transition to the treatment with anti-icing fluid of more aircrafts of different types on the same site at one time. In addition, the airport plans to use those deicing technologies that will fully comply with the existing legislation in the field of environmental protection in Russia and Europe."

While the quality of ground handling services at Russian airports is steadily growing, more efforts need to be taken in order to further improve the situation in the industry.

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The biggest concerns of both ground handlers and airports in Russia is related to the current national legislation in the field, which many feel remains too restrictive.

According to some Russian ground handlers, there is a need to provide additional manpower to both ground service providers and airports, especially in the case of bad weather conditions. According to a Sheremetyevo spokesperson, airport officials have recently prepared and sent a number of legislative initiatives to the Ministry of Transport of Russia.

Representatives of airports believe the introduction of legislative changes will help raise the efficiency of airport management, especially in difficult situations, and possibly prevent tragedies similar to those that occurred in the Moscow Vnukovo Airport in 2014, when a Dassault Falcon 50 hit a snowplow on take-off, which resulted in its crash and death of all four people on-board.

In the meantime, in addition to further modernization of the industry's legislation, other measures should be implemented in order to improve the current situation in the industry.

"The recently completed de-monopolization of the Russian industry of ground handling services, which affected Domodedovo and other Russian airports is just the beginning of a long path," says Marina Bukalova, marketing director of Moscow Domodedovo Airport. "The second step is to create rules for the authorization of ground handlers to operate at airports. As part of these plans, there is a need to design requirements for a minimum level of quality of services provided. Together with our colleagues in the industry, we are developing proposals for the introduction of further changes in the existing regulatory framework in the field of ground handling in Russia.

"One of the proposals is creating a two-level system of admission of ground handlers

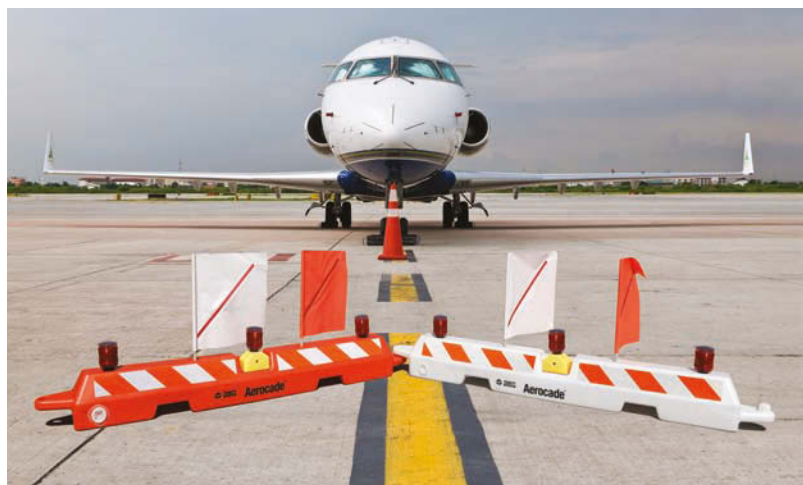
to operate in the airport. It involves certification and qualification of personnel of the main airport operator, that will further responsibility for the admission of third party ground handlers to operate within the territory of the airport."

In the meantime, despite the efforts, which have been implemented by leading Russian ground handlers and airports to optimize ground handling activities in the local market, there are several problems, which continue to prevent rapid development of the industry.

One is high prices for services at Russian airports, which are significantly higher than tariffs in other European airports. This has been confirmed by representatives of some leading airlines operating in Russia.

According to recent statements of Yanne Suomalainen, an official spokesman of the Finnish flagship airline Finnair, high tariffs currently remain one of the most pressing problems of the Russian industry of ground handling.

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As Suomalainen said during the recent Ground Handling at Airports Conference in Moscow, high tariffs are not the only major problem of Russian airports. Additionally, the work of personnel is a factor.

"Many staff members, which provide ground handling services at Russian airports, work well only under a strict control of a their management and representatives of airlines," Suomalainen explains. "As a result, we have to use our representatives to observe the usual routine work of ground handling operators in Russia."

"The second problem, connected with the local staff, is that a very few people speak English. Ground handling workers should be able to communicate both with the crew and with passengers, while very often it is impossible due to a language barrier."

In the case of language aspects, representatives of other foreign airlines operating in Russian airports say there are existing problems

with documentation. In a significant number of Russian airports, documentation is available only in Russian, which forces airlines to use the services of translators, which significantly delays the entire process.

However, airline representatives also point out the Russian government was able to end monopolistic activities of certain ground handlers at some airports. Yet, the problem still exists at airports in small, provincial cities.

According to airlines, lack of competition leads to high prices, which can be as much as three times higher than airports of other countries.

In addition, lack of fixed rates also sparks criticism from airlines, according to which prices may significantly vary for the provision of similar ground handling services for the same type of aircrafts in different Russian airports.

Moreover, often airlines, which receive ground handling services in Russia, have to pay separately for each type of work, which means the need to document each process separately, which greatly increases labor costs. **GSW**



▶ ABOUT THE AUTHOR:

Eugene Gerden is an international freelance writer, who specializes in covering the global aviation and ground handling industries. He has worked for several industry titles and can be reached at gerden.eug@gmail.com.



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Timatic Goes Mobile

IATA's database of border control rules and regulations is now available in an app to help streamline the passenger documenting process.

By Jen Bradley

Passengers carrying the correct travel documents make everyone's life easier. It's less hassle for the passenger, less cost in return trips and fines for airlines, and less confusion for ground support personnel stationed throughout various legs of a trip.

Timatic, an International Air Transport Association (IATA) solution, contains worldwide border control rules and regulations and has been delivering these to ground staff since 1963. Timatic covers all components of immigration compliance, however the three main areas are: passport and other travel documents, visa and visa replacing

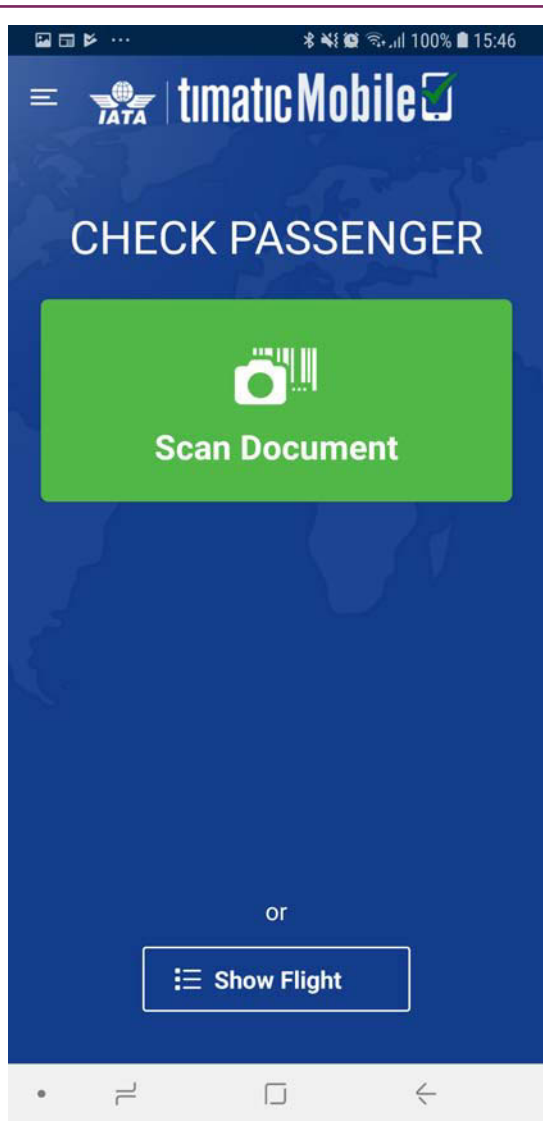
documents, and health requirements, says Alan Murray Hayden, assistant director of Timatic at IATA.

With a variety of versions having launched over the years, Timatic is used by ground support groups and airlines of all shapes and sizes, in all corners of the world. Today, the big news is the launch of the Timatic Mobile, a mobile application currently being trialed at airports worldwide.

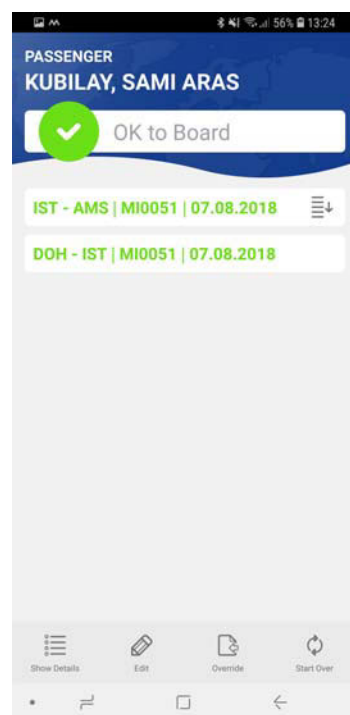
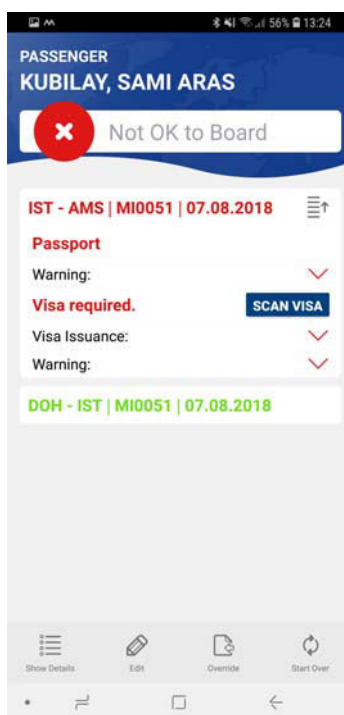
Millions of passengers have their information checked against Timatic each year, saving time, money and hassle for airlines worldwide. According to IATA, automating this travel document process saves airlines up to 59 cents per passenger.

"Given the high number of regularly changing visa and entry requirements, Timatic checks have become an integral part of the passenger acceptance process," says Oliver Götz, project manager for dnata Switzerland, who is part of the Timatic Mobile initial test group.

Photos courtesy of IATA



documents, and health requirements, says Alan Murray Hayden, assistant director of Timatic at IATA.



How it Works

Murray Hayden has been with the IATA organization since 2005 and says that the vast majority of document regulations around the world which the Timatic team deals with have to do with passport and visa requirements. Timatic offers personalized travel document verification to ground support staff based on criteria including a passenger's destination, transit points, nationality, travel documents and country of residence.

At flight check, the passenger or agent scans the passenger's passport to access the passenger's document details, combines it with itinerary information and verifies whether the passenger meets the immigration regulations using the Timatic database. A response is sent back to the kiosk or ground support personnel with an "Okay to board" or if there is a "No," the concise reason is returned such as "Passenger needs a visa," or "Passport is not valid for long enough."

Götz says that dnata Switzerland has benefited from the Timatic AutoCheck service by using the functionalities embedded in most departure control systems (DCS). Due to this collaboration with DCS, he says the queries Timatic runs are based on passenger record data in the DCS or from their required documents. For dnata Switzerland, this process is invaluable.

Florian Eggenschwiler, who oversees Swissport's innovation unit and whose employer is one of the ground handling firms trialing Timatic Mobile, agrees.

"Verifying that passengers have the necessary travel documentation to reach their transit and final destinations is a service many airlines rely on with Swissport," he says. "We service a wide range of carriers with different requirements and terminal set-ups. The Timatic Mobile app is a new approach we will gladly test to see how it allows agents to perform document checks at different locations."

Ten editors at the Timatic Research and Editing Department work alongside Murray Hayden to seamlessly connect immigration authorities with airlines around the world daily. They gather any regulation changes and make constant updates to the database and in its various systems. He explains this process can be challenging, as much of the



Photo courtesy of Swissport

legal language from the governments is complicated and his team works diligently to put it into common use words. The database is updated on average, 72 times a day.

"It's an interesting job, because you are dealing with a wide variety of stakeholders from vastly different backgrounds, for example Syria and Africa, the EU and UN and even the U.S. Military. We are also working with countries that may not even have a stable government, trying to determine what travel documents are required," Murray Hayden explains. "It's just what we do and thrive on."

Format Finder - Timatic

Timatic is still produced in book format, as well as its legacy mainframe system from the 1980s. Murray Hayden says many ground handlers already have an account with Timatic with more and more using the automated document verification functionality offered by, Timatic AutoCheck.

IATA also offers TimaticWeb2, the web-based version which can be integrated into a ground support operation's website for passenger use, or in their departure control or operational systems. Murray Hayden explains that smaller ground handlers may not always have the same levels of technological systems the bigger players do, and so they look up all the details online, interpret them and manually process each

passenger. This service is a great resource for passengers, however, who want to verify these things before standing in line at an airport terminal.

To help speed up this process for all ground handling providers, IATA has developed Timatic Mobile.

"We wanted to have a mobile app that would do the same thing for ground handlers," he says, and explains that this newest format is a stand-alone solution. It allows ground support personnel to access the Timatic database anywhere, expanding service coverage where automated options may not be available.

The other benefit is that it will allow ground handlers to seamlessly transition between airline clients that may or may not have automatic Timatic capabilities already in place. Murray Hayden says this allows Timatic to overlap and work for everybody.

The process is this, notes Murray Hayden: "At the beginning of each day, the ground handler imports all the passengers' details. When the passenger goes to check in, the agent can just take a picture of the passport, the data will be extracted, sent through to match with the travel itinerary and we'll process it, sending back a 'Board' or 'Do Not Board' message. Alternatively, the itinerary can be accessed by scanning the bar coded boarding pass, either paper or mobile."

Timatic Mobile comes after extensive industry research and will enable the expansion of ground support service coverage to outdoor bag drops, security checkpoints, boarding gates, etc. The mobile phone enables fast analyzation of many travel documents beyond the normal passports and visas. This is not possible using traditional swipe readers. Regardless of the format, Timatic is benefitting ground handlers. The mobile app is offering a new level of flexibility and engagement ground handlers desire as the world becomes increasingly mobile.

Testing the Mobile App

Murray Hayden says Timatic Mobile must be downloaded, at no cost to users, but an annual fee for the Timatic mainframe applies, as does a transaction fee.

"It's just another way of using the sys-

tem," he explains. "If they have one, they can access the other. There's no difference in cost."

That's great news for longtime Timatic users at Swissport. Eggenschwiler says the company has several Lab Stations across its network to perform these types of technology tests before introducing it network-wide.

"We are currently testing the app at our operation at McCarran International Airport in Las Vegas to understand better how it helps our agents process passengers quicker and with higher reliability," he says. "At Swissport we constantly are trialing new technologies and solutions that help our customers and operations."

Eggenschwiler adds that the Timatic Mobile application will allow Swissport personnel to be more flexible with the way they perform documentation checks.

"No direct access to a computer is required, which could open up more possibilities in how the boarding process is organized," he says. "An increasing number of passengers are traveling with hand luggage only, check-in online and bypass the check-in counter."

Götz is hoping for the same results and sees similar benefits from the mobile platform. He says that while many airlines are investing in embedded Timatic AutoCheck solutions, dnata sees a strong need to make use of a solution that provides independent ground handlers the same level of automation.

"In a first stage, we agreed with IATA on a trial period after which we expect to have clear visibility of the real benefits and how the app is best used within the passenger acceptance process," he says. "A first approach is to equip lead or gate agents with

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Timatic Mobile, so they will be able to provide support in cases of complex scenarios and run the necessary queries remotely from their workstations.”

Götz says this app is a new tool to facilitate what is often a time-consuming task, ensuring a smooth and excellent customer experience.

Minimizing Risk

“Immigration regulations are so complex,” Murray Hayden points out. “If we can basically do all the processing in the background, it makes it so much easier for ground handling professionals. When I come to the Netherlands, my passport needs to only be valid on arrival. (If) you’re American, your passport needs to be valid for three months beyond the period of intended stay. As a German, I can travel with an expired passport for one year. So, can you imagine

a ground handling agent in an international station trying to check somebody in and trying to figure out these different regulations?”

The main reason to eliminate this confusion boils down to money. Murray Hayden says if an airline carries somebody without the proper travel documents, the airline gets fined and, in many cases, will pass that fine onto the handling agents.

He mentions a recent conversation with an airline having issues in Europe. For each passenger they carry that’s not properly documented, they are seeing fines of 10,000 Euros.

“The airline gets fined, but they also need to repatriate the passenger and send them back,” Murray Hayden adds.

Since fines are more likely to be passed down to the ground handlers, he explains that it’s imperative airlines and ground handlers start managing passenger document-

ing much more accurately or start feeling the financial pains.

Timatic has certainly helped in that area over the years, and Götz is looking forward to the flexibility and automation the new mobile application will provide.

“We expect this to be an additional tool that helps us further reduce the risk of overlooking any new regulations or restrictions and making the passenger acceptance process more reliable and efficient,” he says. **GSW**



▶ ABOUT THE AUTHOR:

Jen Bradley, owner of Bradley Bylines, is an aviation writer based in East Troy, WI. She may be reached via her website at www.bradleybylines.com.

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Get a Handle on the **HEAT**

Ground service providers need to take special precautions when temperatures on the ramp reach dangerous levels.

By Ed Brotak

Even in what is normally considered “good weather,” there can be situations hazardous to the health of outdoor workers. Intense heat can cause illness or even death. Exposure to ultraviolet (UV) radiation accompanying strong rays from the sun can cause everything from a painful sunburn to skin cancer. In lower latitudes, these risks are often present all year. In higher latitudes, they occur in the summer.

To a large extent, both excessive heat and dangerous levels of UV are a function of the intensity of sunlight, which itself is determined by the elevation angle of the sun. The higher the sun is in the sky, the less atmosphere to traverse, and the stronger the solar radiation. During a day, the maximum solar angle occurs at noon. This is typically not at “local noon” but rather “solar noon” or the half-way point between sunrise and sunset. A simple rule is that the shorter your shadow, the higher and stronger the sun is.

Over the course of a year in mid and high latitudes, the sun is at its zenith on the summer solstice. For the Northern Hemisphere, this can occur between June 20 and 22. The summer solstice for the Southern Hemisphere is the opposite, December 21 or 22. The region between 23.5°N and 23.5°S, the tropics, typically have a “high sun” throughout much of the year.

Although solar intensity and the UV threat is directly related to these astronomical events, temperature lags. It takes time for things to heat up in the summer. Highest temperatures in mid-latitudes usually don’t occur until a month after the summer solstice. In some tropical regions, the “high sun” period coincides with the rainy season. In these areas, the most intense sunlight and highest temperatures typically occur just before the rainy season starts and just after it ends. In many tropical desert locations, the highest sun coincides with the least cloudiness, thus exasperating the problem.

Looking at the heat issue first, a person’s body



Photos courtesy of dnata

temperature will rise when he or she is exposed to a warmer environment or when that person is engaged in physical activity. For most outdoor workers, the combination of these factors must be allowed for. Temperatures which may be non-problematic for sedentary activities can be an issue for more strenuous work. If a body's temperature becomes too high, it can react in different ways depending on the severity of the condition. The effects can range from heat cramps to heat exhaustion, and possibly to fatal heat stroke.

A person's body cools itself by sweating. The water which appears on the skin will evaporate, thus giving a cooling effect. So, these situations can also lead to dehydration and a loss of electrolytes such as salt – besides an unhealthy increase in body temperature.

Interestingly, since the body cools itself by evaporating sweat, heat danger is a function of not just the temperature but also the humidity or amount of moisture in the air. Dry air would allow maximum evaporation and cooling. But humid air will slow the evaporation process and limit the self-cooling effect.

To allow for both effects with one number, meteorologists developed the *Heat Index*. It combines the temperature and the humidity into one value, a “feels like temperature.” For example if the temperature is 92°F and the relative humidity is 60 percent, the Heat Index would be 105°F, putting people in the “danger zone” for heat disorders. This means it would feel the same outside if the air was dry and the actual temperature was 105°F.

In the United States, the Occupational Health and Safety Administration (OSHA) has taken the lead in protecting outdoor workers with their Heat Illness Prevention campaign, launched in 2011. The key is education. To achieve the desired safety objectives, OSHA has used training sessions, outreach events, informational sessions, publications, social media messaging and media appearances. Their slogan for heat safety is “Water, Rest, Shade.” Under OSHA law, employers must protect workers from many hazards including extreme heat. To accomplish this OSHA requirements include:

- Provide workers with water, rest and shade.
- Allow new or returning workers to gradually increase workloads and take more fre-



Photo courtesy of dnata

quent breaks as they acclimatize, or build a tolerance for working in the heat.

- Plan for emergencies and train workers on prevention.
- Monitor workers for signs of illness.

What are ground support companies actually doing to protect their workers from excessive heat?

“Our safety program makes sure everyone is aware when extreme temperatures are forecast (i.e. shift change briefings). Our local safety coordinator monitors temperatures on the ramp when they reach a danger zone,” says Vic Gregg, Director of Safety Standards and Audit, Enterprise Safety, Universal Weather and Aviation, Inc.

In terms of direct actions, he adds, “We always make sure water is available, and we try to limit direct sun exposure on employees as much as possible. When it's more than 90°F, work in pairs. Supervisors will come out and monitor the staff. Limit outdoor time to the handling and moving of aircraft and then seek cover.”

Gregg says their hottest location would be Singapore as it is near the equator.

“At dnata, we take a holistic approach to heat health,” adds Mark Gibb, Senior Vice President, Safety and Standards, dnata. “We provide our team members with the necessities to stay safe in the heat – shaded and

air conditioned rest areas and water to stay hydrated. Beyond this, we empower our people with education about heat stress – both what heat stress looks like and how to prevent it – and encourage everyone to look out for one another.”

Specifically, at their home base at Dubai International Airport, he says teams working in the heat have access to shaded and air conditioned areas, called Cool Zones.

“The dnata Cool Zones are located at key areas across Dubai International Airport and are open 24-hours a day, seven-days a week. The Cool Zones give those working in the heat a quick break to cool down, grab a drink of water, and rest,” Gibb explains.

In Dubai, where high temperatures can soar above 100°F for half the year, he notes, “dnata's heat safety precautions are in place all year long. We know that our people have to work in challenging conditions regularly, and our goal is to ensure everyone goes home safely every day.”

“We are aware that a lot of our jobs profiles involve hard work under challenging weather,” says Christoph Meier, VP Group Communications, Swissport International Ltd. “We train our staff on how to take the necessary precautions to protect their health. Recommendations can be adapted based on local risk assessments.”

With one of their hottest sites being Riyadh, Saudi Arabia, Meier adds, "To give you some concrete examples, Swissport provides its staff not only with good advice, in addition to personal protective equipment (PPE), we also provide regular water distribution and try to accommodate more frequent breaks, when the conditions require."

As for intense sunlight, there are two concerns. First, there are the obvious effects on temperature. Air temperatures can be 15°F warmer in the sun than in the shade. Surface temperatures of concrete or asphalt in full sunlight can be well over 100°F, perhaps close to 150°F. This will certainly increase the risk of the heat-related problems.

Also, sunlight contains UV rays. These can cause sunburn which can range from a discomforting redness to a dangerous blistering of the skin. This can even lead to skin cancer later in life. What's more, UV rays can

harm a person's eyes and promote cataract development.

The greatest risk of UV damage comes when the sun's rays are strongest. As mentioned, this would be the hours around noon and, for mid-latitudes, the weeks before and after the summer solstice. For tropical areas, the sun is always high in the sky and strong during the day. Elevation also plays a role in sun exposure. The higher up a person is, the less atmosphere the sun's rays have to penetrate and the stronger they are.

Of course, cloud cover can diminish the strength of the sun's rays. But, light or thin clouds have little effect on UV levels. And even denser clouds don't block all UV rays. In addition, surfaces such as snow, water, sand and light colored pavement can reflect UV rays even into shaded areas.

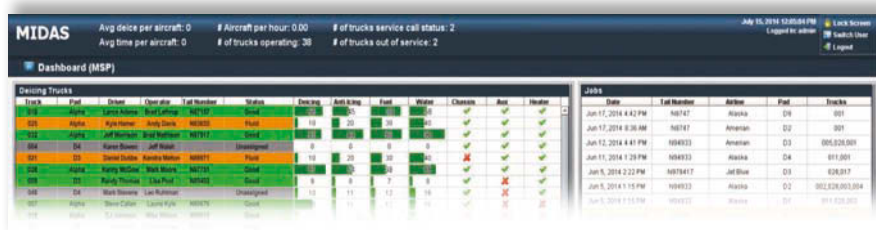
To quantify the dangers of UV exposure, meteorologists in Canada developed the *UV*

Index in 1992. Other countries soon followed and by 1994, the *UV Index* was the standard used around the world. The *UV Index* is a scale that runs from 0 (at night) to 16 (in the tropics at noon). Values of 6 or more bring a high risk of some skin or eye damage. Values of 11 or greater are for extreme risk situations. A maximum *UV Index* of 11 regularly occurs in mid-latitudes in the period near the summer solstice. Values of 12 or greater are common in the tropical regions during the high sun season.

UV Index forecasts (and additional information) are available from the Environmental Protection Agency in the United States and Environment Canada in Canada. Check with a local weather service to find this information in other countries.

For sun protection, OSHA has no general requirements for employers (unless a specific risk is proven) but recommends for workers:

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- Cover up – wear loose-fitting, long-sleeved shirts and long pants.
- Use sunscreen with a sun protection factor (SPF) of at least 30, and be sure to follow application directions.
- Wear a hat – a wide brim hat, not a baseball cap, works best because it protects the neck, ears, eyes, forehead, nose and scalp.
- Wear UV-absorbent sunglasses – sunglasses don't have to be expensive, but they should block 99 to 100 percent of UVA and UVB radiation.
- Limit exposure – UV rays are most intense between 10 a.m. and 4 p.m.

In terms of protecting workers from the direct effects of intense sunlight, of course, ground support companies have some of the same precautions used to prevent overheating.

Universal Weather and Aviation, Inc. recommends limiting exposure to direct sun.

dnata's Gibb adds, "We provide our team members with the necessities to stay safe (including) personal protective equipment and sunscreen."

"Swissport provides its staff not only with good advice, but with UV protection creams, hats and sunglasses," Meier states. "Our new uniform catalog integrates UV protection sleeves and shirts, high visibility shirts, breathable closing material and high visibility vest as well as special head/neck protection." **GSW**



Photo courtesy of dnata



▶ ABOUT THE AUTHOR:

Ed Brotak is a retired meteorology professor, turned freelance writer. He specializes in aviation weather hazards and has written dozens of articles on this topic.

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Hyderabad Airport's Role in India's Burgeoning Pharmaceutical Trade

Pharma shipments are a mainstay of the airport's cargo traffic, growing steadily over the past five years.

By Manik Mehta

India's rise as a leading supplier of pharmaceutical products has helped Hyderabad's Rajiv Gandhi International Airport (RGIA) become an important hub in the nation's burgeoning pharmaceutical export trade. India is the world's largest generic supplier of pharmaceuticals, accounting for some 20 percent of the global generic medicines.

RGIA airport is located in Hyderabad, the capital of the Indian state of Telangana. The airport is operated by GMR Hyderabad International Airport Ltd. (GHIAL), a public-private venture comprised of public entities Airports Authority of India and the Government of Telangana as well as a private consortium of the GMR Group and Malaysia Airports Holdings Berhad (MAHB). MAHB is, meanwhile, divesting its involvement in the airport.

The airport has one passenger terminal, a cargo terminal and two runways. There are also aviation training facilities, a fuel farm, a solar power

plant and two MRO facilities. RGIA was India's sixth busiest airport in 2017 in terms of India's passenger traffic, attracting more than 18 million passengers in the fiscal year spanning 2017 and 2018.

Some of the airlines that operate at Hyderabad include British Airways, Air Arabia, Air India, AirAsia, AirAsia India, Alliance Air, Cathay Pacific, Emirates, Etihad Airways, flydubai, GoAir, Gulf Air, IndiGo, Jazeera Airways, Jet Airways, Malaysia Airlines, Qatar Airways, SilkAir and Thai Air, among others.

But there are also a number of cargo carriers which operate freighters to and from Hyderabad. These include Cathay Pacific Cargo, Lufthansa Cargo, Qatar Airways Cargo, Thai Cargo, Turkish Airlines Cargo and Quikjet Cargo.

Pharmaceutical shipments are a mainstay of the airport's cargo traffic; indeed, pharma products account for more than 60 percent of the airport's cargo exports. The airport's pharma cargo experienced an average 10-percent growth rate in the last five years.

India is also a huge pharmaceuticals market, the world's third largest in terms of volume and the 13th largest in terms of value, according to a report by Equitymaster. Not surprisingly, a number of cargo carriers are launching or adding new services to India.

Peter Gerber, Lufthansa Cargo's CEO, highlights the significance of pharmaceutical cargo for his carrier, which opened its first pharma hub at RGIA in May 2011, and Hyderabad's role in this traffic.

"Pharma products account for a substantial volume of Lufthansa Cargo's export traffic from India, with a large chunk originating from Hyderabad and also flown from Mumbai," he says, adding that air-cargo pharmaceutical shipments require speedy handling.

A large number of Indian pharma shipments change planes at Frankfurt airport, the carrier's hub. To facilitate the transit and retain the products' effectiveness amid temperature fluctuations, Lufthansa Cargo has set up a cool center at Frankfurt airport.

"This is one of Europe's biggest hubs for temperature-sensitive air freight consignments. We are meticulous about maintaining precise temperature

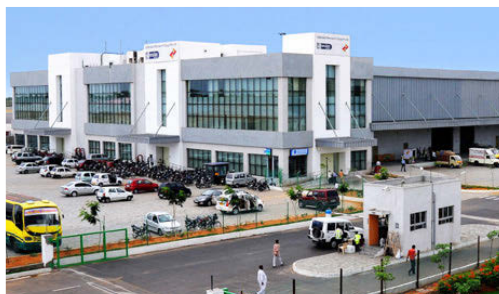


Photo courtesy of Lufthansa Cargo

control, and exclusive handling by qualified specialists to ensure high-quality standards,” Gerber says.

Hemanth D.P., chief operating officer-aero, commercial, cargo at the GMR Group foresees RGIA’s plans to establish connections to over 80 percent of the world in the future.

“Our future plans include building a perishables terminal, an express terminal and expansion of the current cargo village – bonded and non-bonded. We have just branded our free trade zone as GIFTZ (GMR International Free Trade Zone),” he says.

Hyderabad Airport also benefits from the cluster of Indian pharma companies within its geographic radius. Its cargo terminal building has a dedicated temperature-controlled facility to handle pharmaceuticals and vaccines.

The Indian Government recently approved the establishment of a pharmaceutical formulations unit in close proximity of the airport.

After some initial opposition, the Indian government’s Expert Appraisal Committee (EAC) acquiesced in the project proposed by the GMR Group to set up a multi-sector industrialized special export zone (SEZ) which will include a pharmaceutical formulations company.

The pharmaceutical unit was needed because, according to the GMR Group, growth of its special export zone (SEZ) was hampered by space constraints in the past years and its present rate of occupancy was just around 11 percent. A large part of the SEZ will be allocated to the pharmaceutical formulation company – Citron Formulations – which will occupy some 40 acres of land. There are also other units dedicated to gems and jewelry, electronics hardware and the information technology sector, commercial buildings such as service apartments and banking facility, logistics and warehousing.

The pharmaceutical formulations com-

► **Lufthansa
Cargo CEO
Peter Gerber.**



pany is expected to produce tablets (3 billion units per annum), pharmaceutical capsules (450 million units per annum) and injectables (18 million units per annum).

An aviation official, speaking on condition of anonymity, says that both the airport and facilities around it were big attractions.

“A city can build an airport, but our airport

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is building a city around it – an Aerotropolis – with the infrastructure and the economy centered around the airport,” he explains, adding that foreign ground-handling operators were also interested in coming to Hyderabad.

GHIAL is planning to develop this Aerotropolis, spread across 1,000 acres in its vicinity and using green technologies. The airport city will also house aero related economic activities like logistics and Aero-SEZ.

RGIA connects with 60 destinations across India and abroad; it has attracted many corporate groups such as TATA, CFM, UTC, Amazon Fulfilment center, GMR MRO, Safran and FSTC.

According to S.G.K. Kishore, the CEO of GHIAL, the current expansion envisaged creation of additional capacity across terminal, airside and landside facilities at the airport and will result in more than doubling the capacity in phases.

The Hyderabad airport city is in the process of launching a business park of 1 million sq. ft. spread over 30 acres. While several elements of the airport city are already functional, across the Business and Logistics Port, which involve investments by GMR and third parties, tenants and investors, the airport will continue to be developed through a mix of self-development and direct third-party investment as well as built-to-suit developments for specific clients.

Hyderabad has set its gaze on becoming India's and, indeed, South Asia's logistics hub, facilitated by connections on two sides with the national highways and state highway and the city through the Outer Ring Road and the PVNR Expressway. The Master Plan envisages rail connectivity as well as rail siding for movement of goods. This makes it ideal to serve as a Dry Port as well.

“The state government's move to extend the Metro Rail connectivity to Hyderabad airport

will bring a lot of benefits to our passengers, cargo transporters and other airport users,” asserts Kishore, who highlights the airport's “important contribution” to the economy.

The chief minister (equivalent to a governor in the U.S.) of Telengana, K. Chandrasekhar Rao, recently laid the foundation stone for the airport's expansion.

Since 2014, the airport's passenger traffic growth rate has trebled from 7 percent in 2014 to about 21 percent year-on-year over the last four years. The airport handled more than 17 million passengers in 2017. The chief minister says that on completion of expansion, the passenger capacity will go up to 40 million per year. Also, the airport could be further expanded to four runways in the future.

Meanwhile, GHIAL received a big boost for its cold storage service in April when the airport's cargo terminal was recently awarded the World Health Organization's Good Stor-



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age and Distribution Practices (WHO-GSDP) certification.

Experts believe that the WHO-GSDP certification will drive Hyderabad Airport to meet quality management standards and international requirements throughout the pharma supply chain.

Kishore says that the airport's "rigorous quality standards, specialty logistics expertise and meticulous execution enable us to meet the demands of the Pharma City and optimize the supply chain for our customers globally."

In 2010, Hyderabad International Airport operationalized India's first airport-based pharmaceutical handling facility (Pharma Zone), dedicated to the export of pharmaceutical products.

While making a pitch for their airport, GHIAL representatives like to point out that Hyderabad Airport lies just two hours flight distance from all the major Indian cities, and

a four-hour flight distance from the Middle East and Southeast Asia.

The cargo terminal's expansion, airport experts say, will bolster its capacity; the cargo terminal occupies an area 154,200 sq. ft. and can handle 150,000 tons (170,000 short tons) of cargo annually. The terminal is operated by Hyderabad Menzies Air Cargo Pvt Ltd, a joint venture between GHIAL (51 percent) and Menzies Aviation (49 percent). The terminal also includes the Pharma Zone, a temperature-controlled facility designed for storing pharmaceuticals. Hyderabad was, incidentally, the first Indian airport to have

such a facility.

For the first time in its history, Hyderabad Airport received the world's largest cargo aircraft, AN-225 Myria en route to Australia from Turkmenistan, this past May. The Antonov Airline aircraft, which is about 84 meters long, 18.1 meters high and is powered by six super turbo-fan engines, can lift an incredible 640 tons of MTOW (Maximum Take-Off Weight). Only a few airports in the world can handle the aircraft's landing and take-off since its wing span is wider than even the world's largest passenger carrier, the Airbus A380 double-decker aircraft. **GSW**



► ABOUT THE AUTHOR:

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

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Should U.S. FBOs Adopt a European Model?

Looking at European best practices could address challenges with individual markets across North America.

By Curt Castagna

All airport managers should be familiar with the old adage, “If you’ve seen one airport, you’ve seen one airport.” Nothing could be closer to the truth when it comes to the current national debate regarding the evolving fixed based operator (FBO) business model.

While some FBOs continue to rely on fuel sales and bundling of services for revenue (i.e., the traditional U.S. model), in many markets, as a means to compete and remain sustainable, FBOs are accommodating customers by providing competitive fuel prices and a menu of services. Thus, they have introduced individual fees for services such aircraft parking and handling (i.e.,

the European model) in light of diminishing fuel margins that challenge healthy FBO operations at general aviation facilities.

Through the years, due to the increased trend away from the bundled approach to FBO operations, some light general aviation aircraft owners have expressed concerns about pricing practices that could preclude reasonable access to public-use airports. This raises significant challenges for airport sponsors whose federal grant assurances require them to operate self-sustaining enterprises, while making the airport reasonably available for public use without discrimination. Airport management, like politics, is local. Unfor-



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tunately, national pressure or debate applied at a local level does not properly reflect a specific community's goals or consensus on what is best for its airport.

As acknowledged by the Federal Aviation Administration (FAA) in its 2017 document entitled "Q&As – FBO Industry Consolidation and Pricing Practices," changes in the aviation industry in recent years have put FBOs under stress due to post-9/11 security demands and continued consolidation of the industry. Likewise, many FBO operations and facilities are under pressure to upgrade their facilities, where some buildings are functionally obsolete and not able to accommodate today's aircraft fleet. While most arguments regarding FBO pricing practices are presented from the viewpoint of the airport user, this article examines the perspective and responsibilities of the airport sponsor.

How do airports fund and preserve the integrity of light general aviation aircraft/users, while fulfilling the obligation to be self-sustainable? How does the airport sponsor use reasonable discretion to support its users in coordination with policies to develop properties for the highest and best use, especially in light of limited AIP funds and a lack of legislative support for increased PFCs that may be available for new airport development?

Much like the evolution of the airline

industry after deregulation, airport sponsors have no control over the forces of a free market or the FBO industry consolidation caused by changing economic conditions. Since each airport and each market is different, and based on local and regional knowledge and conditions, FBOs construct pricing that enables them to provide quality service at a reasonable rate of return. In addition to the FAA's compliance policy that requires aeronautical service pricing to be reasonable, the Department of Justice does attempt to manage and/or prevent monopolies. Ultimately, what is defined as reasonable may vary from market to market.

The most appropriate model of pricing

When airport users have concerns about a particular airport's rates and charges, they should address them first with the local FBO and then with the airport sponsor/management.

may come from evaluating the merits of both the American and European models, and implementing the best practices of each. For example, based on an airport's unique operations, it may be appropriate for the airport sponsor to erect a self-serve fueling station with parking designated for transient, light general aviation aircraft that do not require the fuel, ramp space or pilot/passenger amenities provided by an FBO. In some cases, the airport might provide incentives for an FBO to create and sustain a lower cost self-serve fueling station consistent with its business model.

In terms of transient parking, setting aside a ramp area for light general aviation aircraft may serve the interests of a FBO whose overhead costs are growing and fuel margins are shrinking. For example, in light of fixed daily operating costs, an aircraft that utilizes an FBO's ramp space without buying fuel or other services (i.e., without contributing to its revenue stream) is actually an expense to the FBO and the airport. In today's environment, the ability for an airport to provide unsupervised, unfettered access does create risk. Rather than the airport sponsor funding this designated ramp area with necessary access control, the investor FBO could develop the property and amortize the expense over the term of the entire FBO's master leasehold.

It is unreasonable to expect airports to

apply grant assurances that satisfy user demand without giving equal consideration to all the assurance requirements with which it must comply under federal law. This year, the Transportation Safety

Board's Airport Cooperative Research Program (ACRP) published "Synthesis 86: Airport Operator Options for Delivery of FBO Services," a report that explores the local considerations on how airports can provide

FBO services and evaluate which business model works best.

According to this document, other major considerations for airport sponsors to consider include the level of interest exhibited by the private sector to provide sustainable investment opportunities. As a last resort, where private investment cannot be sustained, an airport may provide them directly under the FAA's permitted exclusive rights provision.

Notably, the ACRP "Synthesis 86" identifies the nation's estimated 3,500 FBOs in 2016, compared to some 10,000 that were operating in the 1980s. Most surprisingly, 47 percent of the nation's FBOs are municipally owned and operated by an airport sponsor.

Overall, research indicates that there is not a one-size-fits-all approach to pricing, that the definition of what is reasonable is not universal, and that the European model should not be completely dismissed as a viable alternative to the traditional U.S. model. Thus, this begs the question on where the line would be drawn on reasonable pricing beyond FBOs. Would flights schools, aircraft maintenance and charter management providers face similar expectations by having the federal government manage reasonableness in these pricing areas too?

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How can airport sponsors navigate the path to both sustainability and diversity? By initiating dialogue among all stakeholder groups and solving problems to the largest extent possible at the local level. Creating an environment that promotes a healthy mix of jet, propeller and helicopter operations and facilities requires close collaboration among airport sponsors, users and operators. Incentives to preserve a diverse airport may take the shape of new leasing policies, rates and fees, and investment requirements. In all cases, industry and airports should work together.

When airport users have concerns about a particular airport's rates and charges, they should address them first with the local FBO and then with the airport sponsor/management. The FAA supports this type of direct communication, especially in matters involving airport access, fees,

rates and charges. Any attempt to circumvent this process in the political realm only restricts true collaboration, compromise and problem-solving.

As a last resort, the FAA provides the Part 13 and Part 16 actions that permit informal and formal administrative actions to evaluate and provide determinations on challenges against an airport sponsor. Evidenced by the determinations in these cases, there is no clear "cookie cutter" procedural process that will eliminate the need to evaluate each situation independently. Avoiding this administrative process is best for all parties.

The concept of affordability at airports is a worthwhile and necessary industry pursuit, but its definition varies and airport sponsors must work collaboratively with the aviation communities they serve to develop incentives and leasing practices that allow and encourage all of the various general aviation users to live in harmony. The bottom line is the industry cannot expect new infrastructure to be developed, maintained and secured without a cost, and at the taxpayer's expense. **GSW**



► ABOUT THE AUTHOR:

Curt Castagna, president and CEO of Aeroplex/Aerolease Group, is a member of the Los Angeles County Airport Commission, president of the Van Nuys and Long Beach Airport Associations, and a board member of the National Air Transportation Association. A certified private and instrument-rated pilot, he has instructed courses in aviation administration at Cal State Los Angeles for over two decades.



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Stuttgart Airport Tackles Operations Efficiency by Upgrading Its IT System

Stuttgart shows an investment in IT technology can go a long way to improve airfield operations.

By Altay Fellah

For Stuttgart Airport (STR), the opening of its Terminal 3 set in motion the need for new information technology (IT) systems that could better manage the airport with the terminal facilities. Its existing Flight Information Display Software (FIDS) was not up to the task.

STR knew it needed a fully-integrated IT system with a central Airport Operational Database (AODB). In August 2002, the airport sought out a strategic IT partner to develop the right solution and determined that Inform GmbH was the partner it needed. According to Michael Gassner, director of consulting Aviation for Stuttgart Airport, STR deployed a new AODB, along with various Inform

modules to optimize its entire airport operations and process chain, from flight planning, rostering and dispatching to invoicing.

Ramp Operations and Airport Infrastructure

One area in particular targeted for improvement was ramp operations. Specifically, Stuttgart Airport had three chief goals:

- To improve overall efficiency of ramp operations as ground handling was a major loss maker at that time
- To keep track of staff and ground support equipment in order to achieve better transparency of



Photo courtesy of Stuttgart Airport

the ramp operation by collecting task information and time stamps (e.g., which employee is serving on which flight, status of each task, etc.)

- To improve its staff's situational awareness by sharing information (e.g., dangerous goods in the hold)

Prior to the initiative, STR's dispatch process was based on a manual, pen and paper process using magnetic boards. Communication between dispatchers and employees occurred via radio or task sheets. There were many sub-systems to this process; some manually created such as those using small Excel tools. Collecting and sharing information in this way proved to be a very time-consuming task. As part of its strategic vision for a fully-integrated IT system for its operation, Stuttgart Airport wanted to embed the ramp operation/ground handling part of its operation into the solution, which subsequently formed the basis for the holistic system now benefitting the airport.

Along with the ramp operations, by also managing the airport's infrastructure, the integrated solution served to optimize Stuttgart Airport's allocation of stands, gates and check-in counters; control of doors inside the terminal for separating domestic and international customers and passenger flows; and management of interfaces to the FIDS.



Photo courtesy of Stuttgart Airport

The Project Team, Process and System

The airport brought together an interdisciplinary team consisting of members of the operation, as well as those from its IT department. Inform assembled a team of experienced airport IT systems, project management and subject matter experts for each targeted department. The airport's project lead was Eric Geigenmueller, head of IT projects-aviation. He was joined by Hans-Steffen Daehn in the role of Inform project manager. Gassner noted that, together,

this Project Team set out to:

- Establish joint specifications
 - Implement the core airport management systems, especially the AODB
 - Implement the pilot department (i.e., ramp passenger bus operation), inclusive of:
 1. Specifications
 2. Modeling in the tools including the development of new functionalities
 3. Testing
 4. Go-Live
 5. Roll-Out of further departments
- Implementing the new system while it was

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still under development was a challenge the project team faced. They also had to create a perfect fit of processes and systems so that all processes take place in the systems in order to avoid shadow systems. These challenges made it clear that STR's project was not a routine IT project, but rather a change-agent project since the airport's processes required changing.

Stuttgart Airport implemented the AODB, along with seasonal flight planning and daily flight planning systems. GS Planning for both stands and staff & equipment, GS RealTime for stands and staff & equipment, GS rostering, GS RealTime for staff (incorporating mobile device functionality), and message broker (for managing all external interfaces) solutions were deployed. Also implemented were business intelligence software and sky-billing integrated in SAP. Subsequently, other modules such as the GS Workforce Plus were added. The performance features offered by

these collective technologies included: the ability to facilitate a single integrated system, as well as real-time dispatching, including through mobile devices for documenting tasks, advanced reporting with all operational data accessible for future reviews, and a scenario capability. Together, they delivered fully-transparent airport operations for Stuttgart Airport.

The project, which began in 2002, had its core phase completed in 2006. When viewed in the context of today's airport IT projects, this may seem lengthy. Back then, however, many of the features and even some of the modules were being developed from scratch. Once the core phase was completed, all of the general airport management functionalities were implemented, including the terminal management component and the largest ground handling departments. It was a fully-integrated project.

Benefits Derived

Stuttgart Airport's IT project yielded many notable benefits for the airport; its staff and passengers. Better decision-making has resulted stemming from the holistic process transparency. Instead of using many different legacy systems, there is one central system for the integrated management and steering of the airport. Staff utilization has increased, as has revenue due to better tracking of special services. Combined, there has been a marked economic turnaround in the airport's ground handling department which is now operating profitably.

The airport's ground handling staff too is participating in and benefiting from their department's economic success. A bonus model has been introduced wherein each individual can participate in the better economic results based on their individual contributions. Because of the heightened transparency, the airport also is able to achieve better planning and a more balanced workload. By embedding staff in the rostering process and accommodating staff members' scheduling preferences, the process has been individualized, increasing morale and productivity.

Since the system has been implemented, Stuttgart Airport has achieved a significant increase in service quality as evidenced by the various quality awards it has received from a considerable number of airline such as the "Quality Award World" from Lufthansa, the "Quality Award World" from British Airways and the "Grand Slam Award" from Delta. The airport also can site that it remains one of the most punctual airports in Germany.

Rolling-out the Optimization Software to Other Departments

Noting the benefits derived within its ground handling department and ramp operations, Stuttgart Airport is continuously enhancing the use of the system by rolling-out the optimization software in other departments together with adding new functionalities. This includes the application of GS Workforce Plus to increase the level of automation in the roster creation process through to the introduction of Airport Collaborative Decision Making (A-CDM).

Dirk Spengler, director infrastructure



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& IT for Stuttgart Airport and initiator of the project, summarized, "One of the key success factors is that the project somehow never stopped and the system is continuously being enhanced and adapted to meet changing needs."

His board colleague and counterpart from the aviation side in the steering group, Wolfgang Mueller, senior vice president aviation, added, "This project has led to many other airports visiting Stuttgart Airport to see what

we have achieved. It's been a real showcase for the airport. It was also the impetus for the foundation of Stuttgart Airport's daughter company, Cost Aviation, which provides help to external customers worldwide by sharing the knowledge and experience the airport has gained through this project." **GSW**

▶ ABOUT THE AUTHOR:

Altay Fella is Vice President, Business Development, Aviation Division of INFORM GmbH (Aachen, Germany). Fella has over 20 years of experience in different sectors of the aviation industry. He began his aviation career in ground handling. He joined INFORM in 1997 as a Consultant and Project Manager, conducting a series of international projects within Europe, North America, Asia, the Middle East, Russia and Africa. As Vice President, Business Development at INFORM, he is responsible for the Aviation Division's marketing and sales activities. He holds a Business Administration degree from EMU University and a Master's in Business Administration from Bradford University School of Management.

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Achieving Predictable Airport Operations

Smart technologies can provide a “runway” for safer and more efficient operations, and better passenger experiences.

By Raghu Seelamonthula

Each day, airports navigate numerous processes and systems to maintain a delicate balance that enables flights to land and depart so passengers can safely and efficiently move between their destinations—and hopefully enjoy a pleasant experience along the way. Behind this balance is an increasingly complex web of integrated systems working hard to ensure passenger movement syncs with plane traffic, and to keep flights on schedule. It’s a process that requires careful integration, coordination and nimbleness, and spans landside, airside and terminal operations.

If statistics are any indication, airports will

continue to have their work cut out for them. According to the International Air Transport Association (IATA), last year’s global passenger traffic was up 6.3 percent over 2015—a figure the trade association says is well ahead of the 10-year average annual growth rate of 5.5 percent. As these figures increase, with more people traveling between all corners of the world, airports must scale their supporting technologies to match and ensure continued safe and efficient travel. That’s where smart, integrated technology can have a real impact, particularly where travel starts and ends: at the gate and on the runway.

Photo courtesy of Honeywell



Envisioning Integrated Operations

Case in point: The Istanbul New Airport, which is set to open in October in Turkey's largest city. Often referred to as the gateway between the East and the West, Istanbul is an increasingly critical aviation linchpin in global travel. The construction of the new airport is evidence of that, as upon completion, it will accommodate more than 150 million passengers annually and serve more than 350 destinations. In order to ensure the Istanbul New Airport can adequately accommodate the anticipated high volume of airline traffic, construction and design elements are focused on driving efficiencies at gates and on the runways—critical focal points in overall airport operations.

Specifically, the project includes the development of three independent runways

and a main terminal with 114 advanced-visual docking guidance systems (A-VDGS) in phase 1. The smart technology that Honeywell is providing focuses on maximizing the precision of aircraft movements to and from gates while providing continuous gate monitoring so that pilots can safely dock planes faster, and with better accuracy. With a high-dynamic range sensor, high-capacity image processing unit and image-processing techniques at its core, the system detects incoming aircraft and converts the processed data into precise guidance information. A pilot display unit (PDU) then displays the information for safe docking.

A-VDGS can also integrate with other airport IT systems, including monitoring and control systems, as well as advanced surface movement guidance and control systems, and other technologies that enable collaborative decision making. This

deep integration can provide more precise and up-to-date insights on flight logistics so aviation personnel can address issues quicker, such as possible gate conflicts.

When implemented, the smart docking system will help Istanbul New Airport streamline operations by managing airplane turnaround and promoting safer, more reliable docking under all weather conditions for all aircraft types. The airport will also be able to more easily scale to accommodate future growth—all while maximizing passenger safety at what's expected to be one of the world's busiest airports.

Blueprint for Soaring Success

In the constant quest for efficiencies, it goes without saying that gate and runway operations are among the key contributors to an airport's success. As the Istanbul New Air-

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◀ **The smart docking system will help Istanbul New Airport manage airplane turnaround and promote more reliable docking under all weather conditions for all aircraft types.**

port demonstrates, how and where airports apply smart technologies can help lay the groundwork for optimal operations. When adopted, an integrated technology approach can provide the following benefits:

- **REPEATED RELIABILITY** - With integrated technologies as a backbone, airports can automate processes like gate positioning and docking—traditionally manual tasks—and effectively eliminate degrees of uncertainty that can affect safety and efficiency, thanks to heightened awareness of lateral and longitudinal guidance. Turning once-manual processes into automated processes, integrated tasks can also help overcome challenges brought by severe weather and other issues that can threaten an airport's ability to run smoothly.
- **UNIVERSALLY UNDERSTANDABLE** - Integrated technologies also introduce a universal language: the language of automation. When applied to the docking process, for example, integration can replace traditional manual methods that largely rely on hand signals and increase the chance for errors. Not all hand signals are universally understood, and crew members can also forget them, or misinterpret them—and sometimes take a



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Photo courtesy of Istanbul New Airport

IGA

significant amount of time to learn them. With integrated technologies, pilots can receive information like guidance data for safe docking and maneuver the tarmac in a safe and efficient manner.

• **BETTER INSIGHT AND CONTROL FOR ENHANCED EFFICIENCIES**

– Airports are increasingly comprised of more and more data points, rife with information to improve operations—if the right technology is in place. Leveraging the details stored in a central airport operational database, automated technologies can offer airports enhanced oversight into daily operations, enabling them to keep tabs on aircraft landing and docking turnaround times for maximum efficiency. Beyond this, detection technology can quickly alert workers of unexpected events during the landing and docking process, further contributing to overall operational awareness.

In the constant **quest for efficiencies**, it goes without saying that **gate and runway operations** are among the **key contributors** to an airport's **success**.

• **REDUCED INSTALLATION AND OPERATING COSTS**

– An airport's essential activities and technologies can quickly rack up costs, including installation and operational costs. When applied correctly, however, integrated technologies can drive efficiencies to ultimately save money. For example, smart docking systems, backed by image processing, can help reduce the number of required docking systems. And, because of its passive sensor technology, such systems offer the additional benefit of helping drive down operating costs. Integration can also provide the real-time insight to help airports more quickly and easily pinpoint issues like equipment failures and facilitate faster response and repair.

• **IMPROVED SAFETY** – Integrated technologies can contribute significant safety improvements by driving enhanced automation and awareness to help reduce the chance of human error during the times when aircrafts are docking at gates. Tight integration between all gate systems can enable automated operations to check if the passenger boarding bridge is in a

parked or safe position to receive the intended aircraft type and provide seamless guidance to help pilots safely navigate the aircraft into the gate. Integration can also promote safe operations by helping prevent injury to aircraft marshalling staff during events like thunderstorms. **GSW**



► **ABOUT THE AUTHOR:**

Raghu Seelamonthula is Director – Products & Solutions for Airport Systems at Honeywell Airports Business, part of Honeywell International Inc. He received a BS in Computer Science & Engineering degree from Osmania University and MBA degree from Sri Satya Sai University. He has been in the industry for 20 years (the past ten years with Honeywell) and is a global advocate and subject matter expert for airport integration technology and the benefits it can provide to airports, airlines, air navigation service providers, communities, and the flying public. He is currently involved in various airport systems projects across Asia Pacific, Middle East, and Europe and actively involved in Honeywell contributions to SESAR-JU programs.

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Accident Prone:

The Case for Pre-Employment Testing of Safety Sensitive Employees

Screening employees to find their reaction to tough situations can build the foundation of a company's safety culture.

By Doug Wilson

Accident Prone. The very term might bring to mind the image of a relative, one with an ever-present injury from their latest misfortune. Or perhaps one thinks of a friend, whose latest story involves a weekend barbecue that went very wrong. That would after all, at least explain the elaborate bandages by the storyteller. With friends and relatives, it is human nature to be dismissive and not label loved ones as being, well, accident prone. Instead, as a society, we prefer to use other, more friendly terms. Describing someone rather as “a little bit

clumsy,” sounds much more agreeable than calling them accident prone.

But what if a clumsy individual – or an accident prone one – was applying for a job with a prospective employer in the aviation field, such as an FBO? How could an employer possibly know that the well-dressed, articulate candidate sitting right in front of them is accident prone? As “clumsy” is not often a skill listed on a resume, the answer is most employers have no idea what inherent safety behaviors a candidate will bring to the workplace. Instead, it is not until weeks after

a candidate is hired does he or she begin to reveal behaviors that may not be conducive to a safety sensitive environment, such as an airport ramp. Worse, sometimes those traits are not revealed until a catastrophic accident occurs.

That dilemma is about to change notes Mike France, managing director, safety & training, National Air Transportation Association (NATA). "Rather than relying on a hiring manager's gut instinct about a potential employee, NATA will soon be bringing to market an affordable, pre-employment screening tool for FBOs and other aviation businesses to give a better sense of a candidate's personal safety culture."

First introduced at NATA's first annual Ground Handling Safety Symposium in September of 2017, the pre-employment assessment is already in beta test with an undisclosed NATA member FBO, notes France. The assessment is administered online to a prospective candidate in under an hour, and the areas of testing include Quality Focus, Leadership Potential, Positive Attitude, Process Monitoring, Applied Learning, Quantitative Problem Solving, Responsibility, Safety Orientation, Teamwork, Work Ethic, Work Tempo, Mechanical Reasoning, and Continuous Improvement—all areas of similar importance to FBOs and other aviation businesses.

How exactly might these areas of concentration relate to aviation? At an FBO for example, imagine trying to determine if a potential candidate is one who can handle the stress of operating a fuel truck on a busy ramp, while quickly and safely handling multiple fuel orders under constant time constraints. Such a scenario is one in which gut instinct can fail a hiring manager – especially when the candidate in question has no previous FBO experience. But, because the pre-employment assessment measures factors such as work tempo, quality focus and quantitative problem solving, the output of the test will specifically highlight those areas of concern about the candidate, and call them to the attention of the hiring manager.

In addition to the quantitative results found on NATA's soon-to-be released pre-employment assessment, statements such as "This individual's scores suggest

that he/she is likely to: Have difficulty performing work tasks at a fast pace; This individual's natural tendency is to work slowly and at a much slower pace than his/her peers; Have difficulty concentrating and performing effectively when faced with multiple tasks at the same time; Find mathematical computations challenging and may make errors when asked to do so" provide greater detail where a candidate's scoring was below the statistical mean for the areas being tested. Though the aforementioned findings doesn't exactly state "We don't recommend this candidate is put in the fuel truck on a busy day," it's easy to see an individual who scores lower than his or her peers in such areas – work tempo, quality focus and quantitative problem solving – may mean a different role is better suited for that candidate, or the candidate may not be the best fit for the employer. In

addition to the quantitative scores in each measurement area, sample interview questions are also provided specifically based on an individual's scores.

Developed by Select International, a company specializing in employee screening tools– the pre-employment assessment has been used by leading manufacturing firms and other industrial concerns for years, and the results are nothing short of mesmerizing. Aggregated results from the manufacturing sector, which uses the same test NATA will soon offer, have found statistically significant improvement by the companies that use this test as part of their overall hiring plan. Specifically, the results have shown employers who use this assessment have experienced a 10–50 percent decrease in workers' compensation claims, a 5 to 30 percent decrease in turnover, a 5–10 percent increase in productiv-

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ity, a 10-15 percent increase in quality, and a 20-30 percent increase in overall performance rated by supervisors.

Although compelling statistics, NATA's France cautions that the use of employee assessments in general should be wisely integrated to become part – but not all – of the overall hiring decision by an employer.

"Though by no means a panacea, this pre-employment assessment in particular is a very powerful tool in the hiring toolbox," says France. That said, NATA's forthcoming offering, which will be branded as a Safety 1st product, does represent a very powerful hiring tool for aviation employers.

For employers considering integrating



pre-employment assessments such as NATA's into their hiring practice, a surprisingly simple, and personal, metaphor is apt: How well do we have to know someone before we are comfortable inviting them to dinner in our home? Even the most gregarious protects the front door of their home before letting a stranger in. It is only a personal relationship, developed over weeks,

months, or years that provides us the requisite comfort level to invite a friend to dinner in our home.

Yet, in the employment environment, a cursory review of a resume, a brief telephone interview and a face-to-face interview lasting an hour or less is all-too-often the norm for hiring into a great many front line positions. In short order, the candidate we only met for an hour or so will be metaphorically living with us, eight hours a day, five days a week. Why wouldn't an employer protect the front door of their company with the same fervor they do their own home?

In this case, the front door of our place of employment is the hiring process, and it should be at least as safe as the front door of our homes. The strength of the various locks, deadbolts, and security systems we use in our homes is analogous to the quality of pre-employment assessments, phone interviews and face-to-face interviews we conduct in the workplace. NATA's soon-to-be-released pre-employment assessment offers an enhanced level of safety to the hiring process worthy of consideration for FBOs and other aviation businesses with safety sensitive positions. **GSW**

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A Caster that Drives Productivity

The Drive Caster from Caster Concepts can move up to 5,000 pounds, and using multiple units in tandem increases load capacity.

By Josh Smith

When dealing with cargo, efficient ground operations are critical. Moving more cargo equates to more success. But that cargo needs to be transported safely, not just quickly.

With this in mind, Caster Concepts has developed the Drive Caster – a self-contained, motorized caster for carts, dollies and other applications.

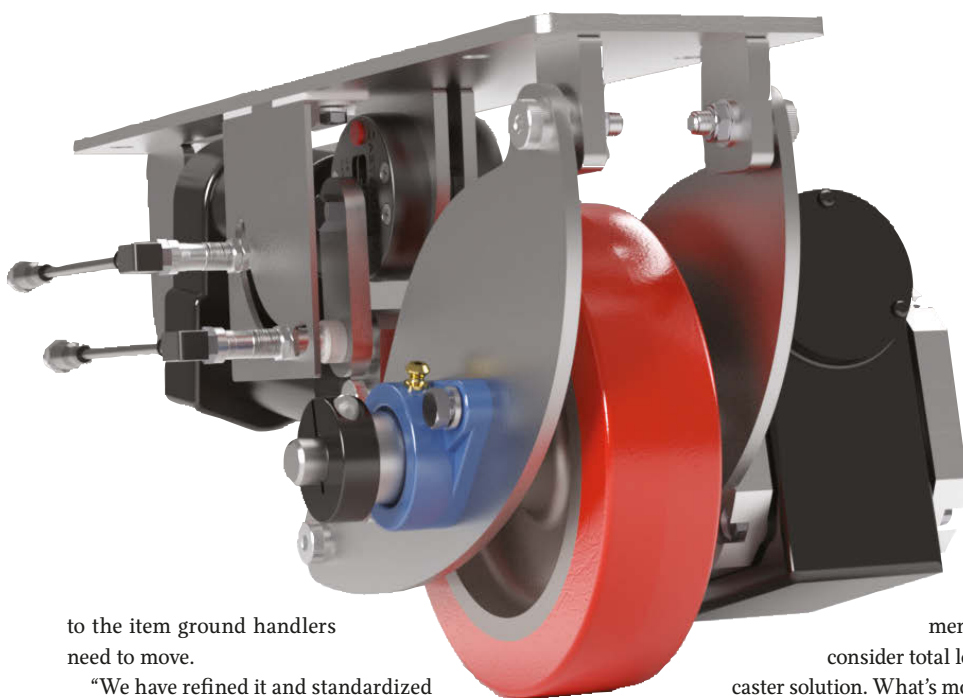
“Once a total load exceeds 2,500 pounds, it is very difficult to move it manually with a traditional caster configuration,” explains Mike

Kulka, director of sales at Caster Concepts. “We had customers and prospects that wanted to move up to 6,000 pounds and above. In response to their needs, we developed the Drive Caster so that these loads can be moved effortlessly.”

There are two different packages of Drive Casters available. The standard package with controls and a battery unit can be mounted directly to an existing piece of equipment. The other option is the company’s conversion Drive Caster, which is a separate unit that can be attached and detached



Photos courtesy of Caster Concepts



to the item ground handlers need to move.

"We have refined it and standardized the unit to an 8" wheel with a ½-hp motor," Kulka explains. "Certainly, special options are available – wheel size, motor size, powering options, etc."

A single Drive Caster typically travels at 1–2 mph, and can move loads up to 5,000 pounds. However, using multiple Drive Casters in tandem increases load capacity.

"We have utilized eight Drive Casters to move a 30,000 pound total load," Kulka recalls, noting the Drive Caster was originally developed four years ago, and Caster Concepts launched it full scale to the market in 2016.

For the Drive Caster to operate, a control module and battery are required. Typically, customers purchase these items from Caster Concepts too, but Kulka says customers can wire and power a unit themselves, if they prefer.

"We believe the Drive Caster can assist in moving any stand or piece of equipment that has been difficult to move with traditional casters," Kulka says. "Many times, moving these items can lead to injuries or potential downtime concerns."

Because the Drive Caster utilizes a standard 4.5" by 6.25" top plate and standard overall height, the product can be modified to fit the height restraints of existing caster configurations.

"Drive Caster moves significantly more weight than similar products in the market place," Kulka says. "It is easily specialized as well, which is a differentiator compared to other pushers."

Kulka adds that a swivel Drive Caster is the next evolution of the unit. That technology is being developed and will be available soon.

Because the unit offers flexibility, Caster Concepts' ground handler and airline customers have provided positive feedback, noting improved efficiency and fewer worker injuries associated with pushing and pulling.

"The Drive Caster takes the possibility of worker injury out of the equation and allows improvement in process flow," Kulka says.

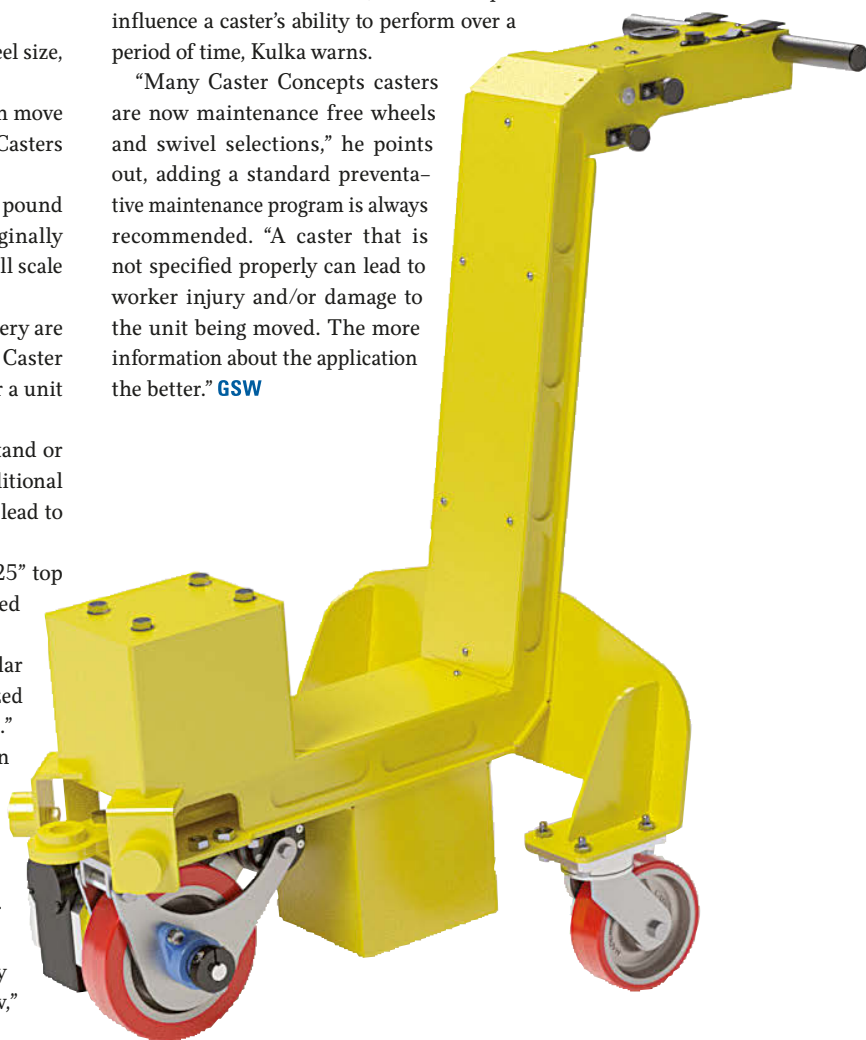
"We have utilized **eight Drive Casters** to move a **30,000 pound** total load."

*Mike Kulka, director of sales,
Caster Concepts*

To spec the appropriate caster for an operation, Kulka says customers must consider whether cargo will be moved manually, determine traveling conditions and note the size and weight of the equipment. Ground service providers should also

consider total load, duty cycle and speed when selecting a caster solution. What's more, extreme temperatures can influence a caster's ability to perform over a period of time, Kulka warns.

"Many Caster Concepts casters are now maintenance free wheels and swivel selections," he points out, adding a standard preventative maintenance program is always recommended. "A caster that is not specified properly can lead to worker injury and/or damage to the unit being moved. The more information about the application the better." **GSW**



► POWER STOW ROLLERTRACK

Power Stow Americas, Inc.

The Power Stow Rollertrack systems allow customers to unload and load narrow body aircraft 30 percent faster while placing only one baggage handler in the hold, eliminating the door man. For customers who utilize aircraft based loading systems to achieve this labor reduction, the company can offer a ground based solution that allows the removal of the heavy onboard system.

AviationPros.com/12375044



► MTT TRACTOR

Eagle Tugs, a Tronair Company

The Eagle MTT is the next generation of eco-friendly electric utility tractor for baggage, cargo and aircraft movement. Powered by an environmentally-friendly 80V A/C electric drive, and 5,000 lb. drawbar pull, the MTT provides the same performance and reliability Eagle tractors are known for, but with zero emissions. The MTT not only features a small 130-inch turn radius, but also allows users to carry up to 1,000 pounds on the rear cargo deck.

AviationPros.com/12426373



► ULD EXPLAINED

ULD CARE

ULD Explained provides simple, jargon-free explanations with comprehensive illustrations covering the basics of ULD operations and handling. The ambition of ULD Explained is to fill a shortage of basic, easy-to-read and easy-to-understand ULD material for those who are new to ULD or those who are working with or around ULD but have never had the benefit of formal instruction.

AviationPros.com/12339542



► BELT LOADER

Aviramp

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

AviationPros.com/12423178



► P6000 BAGGAGE CHUTE

Page GSE

Page offers the P6000 Baggage Chute, which utilizes modern manufacturing techniques making it easy to install. The P6000SP Service Platform can be mounted to any baggage chute for easy and safe storage of chocks, safety cones and wands, and it includes a secure FOD bin.

AviationPros.com/12356988



► TOW TRACTORS

Textron GSE - TUG Technologies Corporation

TUG Technologies offers tow tractors with capabilities ranging from 3,000–78,000 DBP. Tow tractors are available in diesel, electric, and gasoline.

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AviationPros.com/12390649

SHOCK ABSORBING CASTERS

Hamilton Caster & Mfg. Co.



Hamilton Caster's line of shock absorbing casters feature Hamilton's Spinfinity maintenance-free swivel construction and a unibody spring housing. The AE Series casters reduce noise, protect cargo and extend caster, wheel and bearing life.

AviationPros.com/12357764

FLUX POWER LITHIUM 80V 400 AH BATTERY

Averest, Inc

Averest, Inc. has introduced its newest Flux Power Lithium 80v 400 AH battery, designed specifically for electric baggage and cargo tractors. Averest, Inc. provides custom designed battery and charger solutions for the GSE industry.



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CT5 BAGGAGE TRACTOR

Charlotte of America

The CT5 comes with a choice of two gas engines – either a Ford four-cylinder, 2.5-liter engine or a four-cylinder Kubota. It also is available with a Kubota diesel engine. A Paillard axle is in front and an Newage axle in back.

AviationPros.com/10818003



CONTIFLEX VULKAN CONVEYOR BELTING

Continental ContiTech

Continental has introduced a newly developed modular system to control hot materials for ContiFlex Vulkan, a line of Heritage conveyor belting for heat applications. The modular system offers a wide range of construction options, including an exclusive heat control isolation layer as well as either glass fiber (GF) or basalt fiber (BF) layers for burn through protection. The belts are available in widths up to 126 inches.

AviationPros.com/12259373



SHERPA BAGGAGE AND CARGO TOW TRACTORS

Goldhofer Aktiengesellschaft

The Goldhofer Sherpa Baggage and Cargo Tow Tractors are based on a compact and modular vehicle concept. The Sherpa range of tractors enables users to find the tow tractor for individual requirements – depending on drive train, engine power, ballasting, cabin form and exhaust class. Additionally, there are many options for operators' comfort. The narrow body is stable and offers an easily accessible cabin with a good view. The Sherpa is available in three different diesel engine versions, as well as the fully electric Sherpa E, which features a maintenance-free lithium battery.

AviationPros.com/12376663



TOWABLE BELT LOADER

Flight GSE Ltd.

This belt loader was designed for use on the South Pacific and features dual-drive rollers and a 12hp twin-cylinder water-cooled diesel engine.

AviationPros.com/12340060

BAGGAGE CART ROTISSERIE

Merrick Machine

The Baggage Cart Rotisserie offers the ability to rotate a cart safely and easily to a comfortable work position, making repairs easier and faster. The Baggage Cart Rotisserie is manufactured at company headquarters in Alda, Neb. The company also manufactures a line of tarmac dollies for airplanes and helicopters.

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FLEET

Vanderlande Industries, Inc.

Vanderlande's FLEET is a flexible logistics solution. By utilizing intelligent automated guided vehicle



(AGV) technology, FLEET replaces the need for fixed conveyors and sorting systems. Each individual vehicle within the fleet carries a single bag and determines the most optimal route through an airport. In addition, a vehicle can be given priority, which helps to safeguard the delivery of bags on time.

AviationPros.com/12378365



TBC 6000 TOWABLE BELT CONVEYOR

Timsan

The Timsan TBC 6000 Towable Belt Conveyor offers a tow-bar, provided by a fifth wheel system mounted to the chassis for easy steering and a brake system that is applied when the tow-bar is upright and in release position. The belt forward/reverse movements are provided by a hydraulic motor and the height and angle adjustment are provided by hydraulic cylinders. It's powered by a standard 12 V DC battery.

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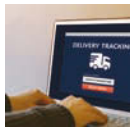
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TRANS-CON MODEL HTSBAPV TRACTOR Harlan Global Manufacturing LLC

The versatile Harlan Trans-Con Model HTSBAPV is equipped with a rear deck that can be used for tools, generators, scissor-lifts, oil coolers, etc., making it an ideal all-purpose maintenance vehicle. The compact, shorter wheelbase and low-profile design is robust and allows for excellent all-around visibility. Many options are available including beacons, hitches and suspension-style seats.

AviationPros.com/12372336



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

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

AviationPros.com/12424551



ELECTRIC BAGGAGE TRACTORS Aeroservicios USA Inc.

Aeroservicios USA's rental fleet includes electric baggage tractors for immediate delivery. Becoming the new standard in zero-emission solutions, these suit a wide range of applications, from airport baggage handling and pushing small planes to industrial uses.

AviationPros.com/12289254



In addition to the mat with inflatable sides on our Kyoto waste water collection trailer, we now have a stand-alone mat (SM 895-02) with insertable foam sidewalls and a self-powered vacuum unit (SM 939).



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BAGGAGE CART TIRE GTC North America

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

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TRACTEASY TLD

TractEasy is a driverless baggage tractor incorporating software that allows the robotized unit to operate in a complex and live ramp environment. This complete solution integrates the ramp operation organization, the safety parameters of the unit on the ramp, the navigational software to optimize routes as well as the vital security layers to ensure protection against outside interference. TractEasy will be based on TLD's electric tractor JET-16 and will integrate all remote control, communication and safety detection tools developed by EasyMile as part of their driverless technology.

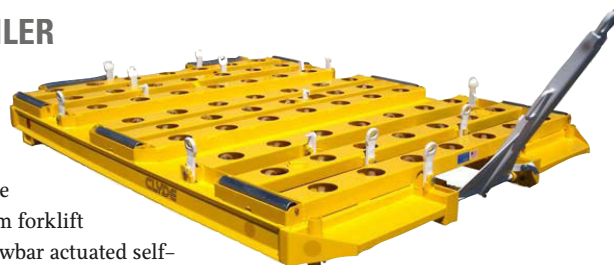
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CARGO PALLET TRAILER Clyde Machines Inc.

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

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CONVEYOR BAGGAGE TRANSPORT SYSTEM R.J. Design LLC

The Conveyor Baggage System was designed to eliminate shoulder and back injuries for ground support personnel and to eliminate number of persons to load and unload luggage, thus saving money.

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COMET 3 E ELECTRIC TOWING TRACTOR MULAG Fahrzeugwerk GmbH u. Co. KG

The MULAG Comet 3 E offers a simple and economical drive design to help ensure its application as a versatile electric towing tractor. Features include hydraulically suspended seats, clearly arranged operating controls in the driver's field of vision and an adjustable steering wheel. The use of high-grade industrial components instead of standard components, helps reduce long downtimes and service cycles.

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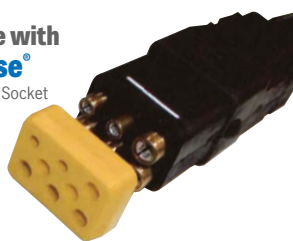
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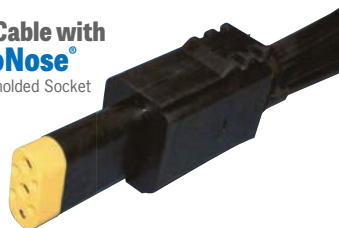
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MODEL 100 CARGO TRACTOR

NMC-Wollard Inc.

The NMC-Wollard Model 100 Cargo Tractor has 8,000 to 12,000 lbs. DBP ratings. The M100 tow tractor features a heavy-duty planetary reduction drive axle, front and rear spring suspension, dual drive wheels, automatic transmission, power-assisted four-wheel disk brakes, power steering, back-up alarm and engine safety shutdown. A unibody 3/4" plate steel frame and bumper are standard design features. Power options include gas, diesel, LPG or CNG. NMC-Wollard specializes in tow tractor customization with many factory installed options available.



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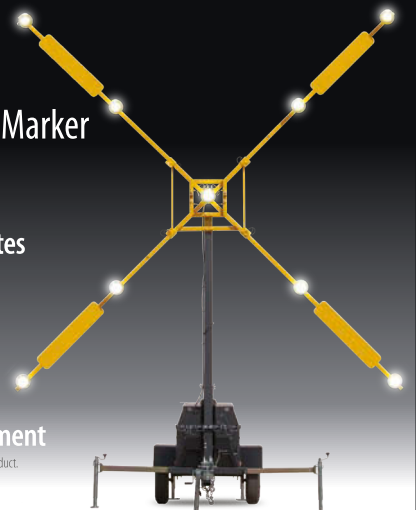
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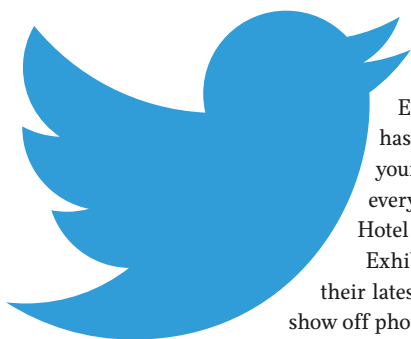
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Connect With Us at #GSEexpo18

Whether you're able to join us in Las Vegas, or if you're keeping an eye on the 2018 International Airport GSE Expo from afar, stay up to date with our social media channels.

We hope you enjoyed our Global Issue. This annual edition of the magazine is a fun experience, as we take the opportunity to tell as many stories as possible from around the "Ground Support World."

Las Vegas is the center of the GSE World, at least for a week during the International Airport GSE Expo, anyway.



Whether you're exhibiting or attending – or even if you're stuck at home and unable to attend the GSE Expo, make use of the event's official hashtag, #GSEexpo18. This hashtag is your opportunity to stay connected with everything going on at the Rio All-Suite Hotel and Casino in Las Vegas.

Exhibitors can use the hashtag to share their latest news, and attendees can use it to show off photos and other exciting happenings.

Even if you're not a social media user, you can still see a collection of show updates by visiting www.GSEexpo.com/show-coverage, where we have a Twitter feed compiling posts in one easy-to-find place.

Of course, we encourage you to follow both the International Airport GSE Expo (@IAGSEexpo) and *Ground Support Worldwide* (@GroundSupportWW) on Twitter for year-round updates, too. Ground Support Worldwide has a presence on Facebook, Instagram and LinkedIn as well. The graphic at the bottom this page will help you find us on your preferred social media platform.

Give us a follow, and be sure to stop by the *Ground Support Worldwide* booth to say 'Hello.' Enjoy #GSEexpo2018!

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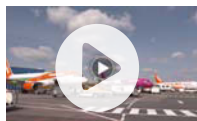


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