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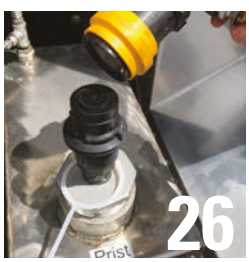

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FEBRUARY 2020

ONLINE EXCLUSIVES

Are You Too Busy Playing the "Shift Shuffle" to Turn that Flight Around?

By Guy Bieber

A comprehensive staffing plan can improve ground crew shift coverage to get flights out on time.

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VIDEOS

SOTI ONE Platform in Use at Frankfurt Airport

The SOTI ONE Platform is critical in supporting Fraport AG's ground handling services, which manages more than 120,000 items of luggage each day for over 69.5 million passengers per year.

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BLOGS

The More Things Change...

By Art Kosatka

There are many technological advancements that improve aviation efficiency, but are digital dog noses, brain-monitoring hats and devices that check behavioral intent likely to take hold in the industry?

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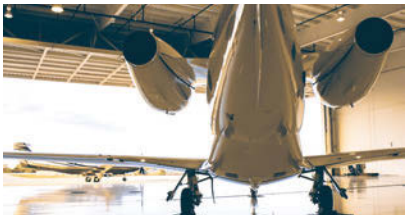
FEATURES

Private Aviation and 20-Hour Flights: How the Industry is Changing the Way We Fly

By Felipe Reisch



Project Sunrise, which connects Australia through other super-long flights with London, South America and Africa, seeks to tackle the symptoms of jet lag.

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Failure to Conduct Practical Driving Assessments for ADP Jeopardizes Airside Safety

Airside drivers typically need to be aware of pedestrian airport workers, airline passengers, baggage handlers and their vehicles, cars, buses, HGVs, a variety of other ground handling equipment, aircraft and more.

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What's a Minute Worth?

By Sam Kamel

Time has an inherent value to travelers, but it's not always something that can be measured in dollars and cents.

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▶ TOP NEWS

Universal Aviation Singapore Earns IS-BAH Stage 2 Accreditation

Universal Aviation Singapore, based at Seletar Airport (WSSL), has earned Stage 2 accreditation under the International Standard for Business Aviation Handling (IS-BAH).

"We are proud to become the first Universal Aviation location in the Asia-Pacific region to earn IS-BAH Stage 2 registration," said Yvonne Chan, managing director, Universal Aviation Singapore. "This honor keeps our momentum going in 2020 from a very productive 2019 in which we saw the opening of the new Seletar Business Aviation Centre (SBAC), our own newly renovated ops center and our purchase of a brand new towbarless LEKTRO tug."

The IS-BAH is a set of global industry best practices for business aviation ground handlers, which features at its core a safety management system (SMS). The IS-BAH follows the structure of the International Standard for Business Aircraft Operations (IS-BAO) Program and incorporates the NATA Safety 1st Ground Audit Program. Universal Aviation Singapore earned its IS-BAH Stage 1 registration in 2018.

"Congratulations to the entire Universal Aviation Singapore team for achieving IS-BAH Stage 2," said IS-BAH program director Terry Yeomans. "The team has confirmed their commitment to the management of safety to both their staff and customers by demonstrating positive signs of maturity and ongoing improvement throughout the scope of activities offered at Seletar Airport to the business aviation community."

AvPORTS Moffett Field Attains Stage 2 IS-BAH Registration

AvPORTS Moffett Field (NUQ) has attained a Stage 2 International Standard for Business Aircraft Handling (IS-BAH) registration designation, having successfully completed a stringent safety audit. Located in Mountain View, California, AvPORTS Moffett Field has been providing airport management and FBO services at the airport since 2014 and is the single-source provider of airport operations, airport maintenance, administration and accounting services and noise abatement.

"Achieving a Stage 2 IS-BAH registration further validates our commitment to mitigating risk," said Derek Pristavok, airfield manager. "This process has helped us further improve our safety culture in order to provide the safest possible operating environment for all our stakeholders."

Jet Aviation Receives IS-BAH Stage 1 Registration for The Netherlands

Jet Aviation announced it has received International Standard for Business Aircraft Handling (IS-BAH) Stage 1 Registration from the International Business Aviation Council (IBAC) for its Amsterdam and Rotterdam FBOs in the Netherlands. It intends to achieve IS-BAH Stage 2 Registration for both FBOs by December 2021.

"These registrations demonstrate Jet Aviation's ongoing commitment to the highest safety standards for its customers and employees," said Edwin Niemoller, director of FBO operations and GM Netherlands. "I couldn't be prouder of the team for their unwavering professionalism, which was acknowledged by customers in the 2019 AIN survey and is now being recognized by the industry."

Jet Aviation expanded its network to the Netherlands with the acquisition of the KLM Jet Center in October 2018.

▶ Upcoming Events

March 10-13
NBAA Schedulers and Dispatchers
Charlotte, NC

March 10-12
IATA World Cargo Symposium
Istanbul, Turkey

April 14-17
NPMA Petro Expo 2020
Alexandria, VA

April 25-29
International Aviation Snow Symposium
Buffalo, NY

April 28-30
MRO Americas
Dallas, TX

May 5-7
NBAA Maintenance Conference
Hartford, CT

May 10-13
AAAE Annual Conference
Denver, CO

May 17-20
IATA Ground Handling Conference
Mexico City, Mexico

May 26-28
NBAA-EBACE
Geneva, Switzerland

Saudia Launches SAL for Ground Handling and Logistics Services at Saudi Airports

Saudi Arabian Airlines (Saudia) launched the Saudi Arabian Logistics (SAL) Co., the new independent entity within the Saudia Group which will act as the main cargo gate and ground handling and logistics services hub across the Saudi airports. The launch was announced in a grand ceremony held in Riyadh.

Saudia's director general, Sami Sindi, said SAL will improve the efficiency of logistics operations and ground handling services through integrating land and sea transportation operations and linking them with the Saudi airports in order to enhance logistical services across all stages. He added SAL was to start its business activities in January 2020 and offer high-quality logistics and ground handling services in line with the national and development goals.

Swissport to Launch its First Australian Air Cargo Terminal

Swissport signed an initial seven-year lease on a new building with warehouse space at Melbourne Airport. The fit out is well underway and the facility is due to open in the third quarter of 2020.

Further locations across Australia will be announced soon.

"With this launch we bring a fresh approach and a more competitive offer to a market that has not seen a new entrant for more than 20 years. Swissport has industry leading processes, training and systems built up across more than 300 sites worldwide over our 25-year history and we will provide a nimble service model designed to better meet customer requirements and deliver on both price and service. We are excited to serve new customers in Australia and look forward to adding Australia to our global cargo network for our existing global customers," said Glenn Rutherford, Swissport's EVP Asia-Pacific.

The new facility has direct airside access and will offer cargo facilities for handling and storage of general cargo, animals, pharmaceuticals and perishables.

"We're pleased to welcome Swissport to Melbourne Airport's Business Park. The new facility joins other industrial leaders in benefiting from 24/7 air freight opportunities, round the clock security and unrivalled proximity to arterial road networks," Melbourne Airport's senior property development manager, Gavin Potts, said.

SATS Wins Riyadh Cargo Terminal Concession

SATS Ltd. announced that its subsidiary, SATS Saudi Arabia Company, has won a 25-year cargo terminal concession in King Khalid International Airport (KKIA) in Riyadh, Saudi Arabia. The Riyadh cargo terminal will be the second cargo operation in Saudi Arabia for SATS, after its first win in King Fahd International Airport in Dammam in 2016.

Construction of the SATS Cargo Terminal in KKIA will take place over two phases with the first phase expected to be completed in mid-2022. There will be a purpose-built cold-chain facility for the special handling of temperature sensitive perishables and a dedicated lane for pharmaceutical products.

"KKIA serves Riyadh, the capital city of Saudi Arabia, and handles close to 40 percent of air cargo volume in the Kingdom. Connected to our stations in Dammam and Oman, and our extensive Asian network, KKIA will extend SATS' network of quality cargo corridors to offer our customers greater connectivity and quality assurance, while supporting Saudi Arabia's rapidly growing cargo market and logistics infrastructure," said Alex Hungate, president and CEO of SATS.

dnata Completes Green Turnaround of flydubai's Aircraft at DXB

dnata recently ensured smooth and safe turnaround of a flydubai Next-Generation Boeing 737-800 aircraft using only zero-emission ramp ground support equipment (GSE) at Dubai International's (DXB) Terminal 2.

"Sustainability is a key focus across operations at the Emirates Group, flydubai and Dubai Airports. The UAE is a major global aviation hub, and in line with the country's vision to ensure sustainable development while preserving the environment, we are committed to taking meaningful initiatives and continually challenge our processes to deliver the highest possible value for all of our stakeholders," said Ahmed bin Saeed Al Maktoum, chairman of Emirates Group, flydubai and Dubai Airports. "The green turnaround, involving a collaborative effort from airline, ground handler and airport operator,

highlights Dubai's commitment and ability to make a difference by using resources in a sustainable manner."

During the green turnaround, dnata's dedicated team transported baggage with electric baggage tractors to the aircraft and applied electric conveyor belts to offload and load baggage and cargo. The passengers of the airline's Karachi and Faisalabad flights were disembarked and boarded through towable passenger stairs. After the boarding had been completed, the ground handler's professionally trained staff pushed the aircraft back from the gate with an electric towbarless pushback tractor, positioning it ready for taxi and departure. Throughout the turn, the aircraft ground power was provided by Dubai International's FEGP (fixed electrical ground power).

PEOPLE

ATS Announces Two Executive C-Suite Promotions

Sally Leible, president and CEO at Airport Terminal Services (ATS), announced the promotion of Ingrid Braeuninger to chief commercial officer and Brian Wood to chief operating officer.

"Ingrid and Brian have been valuable members of our senior leadership team and these promotions demonstrate the importance of their leadership and vision for the future of ATS," said Leible.

Wood has 40 years of ground handling experience at ATS, most recently as vice president of operations. His newly elevated position will provide ATS with the critical foundation to accentuate the ATS differentiation in the marketplace and provide the strong leadership necessary to fulfill the company's strategic growth plans into the future.

In her new role, Braeuninger will focus on business diversification and revenue optimization throughout the business. Her success as vice president of sales and business development at ATS coupled with her years of experience as a global sales leader in the manufacturing industry makes her well suited to ensure ATS' growth.

Menzies Aviation Appoints VP Cargo Americas

Menzies Aviation appointed Peter Kelly as vice president of cargo – Americas to grow its cargo business across Canada, the United States and South America. This follows the recent appointment of Chris Beale as vice president of cargo – Europe, as the organization looks to sustainably grow its cargo business.

Kelly has 27 years of aviation experience with an emphasis on international logistics and transportation. He most recently worked for American Airlines as its regional sales manager in Texas, where he oversaw the sales team and developed strategies to ensure the airline met its cargo revenue goals. He also oversaw cargo handling for Mercury Air Cargo across the US and Canada and has worked with UPS Air Cargo in EMEA.

"Peter brings with him a wealth of experience in cargo and I am delighted for him to join the team. It's an exciting time for our cargo team as we focus on seizing opportunities in the cargo market that will sustainably grow the business," said Robert Fordree, EVP of cargo at Menzies.

"This is a great time to be joining Menzies Aviation as we look to expand our cargo offering in the region and globally," Kelly added. "The Americas is a market with great growth opportunity. Menzies has recently renewed cargo agreements at a number of airports in the region, a testament to our services that I will look to build upon. I look forward to helping this part of the business grow further."

Titan Aviation Fuels Announces New Sales Manager

Titan Aviation Fuels is announced the appointment of Byron Gray as national sales manager. For over seven years, Gray has served as the Gulf Coast Region sales representative at Titan Aviation Fuels, providing service and support for customers in Kansas, Oklahoma, Arkansas, Louisiana and Texas.

Gray brings more than 25 years of FBO experience to this new position. Before joining Titan, he served as the regional vice president for both Landmark and Signature.

"I am excited for the opportunity to work with our regional sales team to expand the Titan network and enhance

COMPANY SPOTLIGHT

TLD GROUP

TLD's vast network of resources related to ground support equipment (GSE) is growing, and the company showcased this strength last fall during inter airport Europe in Munich, Germany.

The company, which is part of the Alvest Group, exhibited with its GSE partners, including AERO Specialties, PAGE GSE, Sage Parts and Smart Airport Systems (SAS).

Company representatives explained the partnership allows each entity to handle its individual strengths as a business unit while also having extended resources to provide better customer support.

"Our business and continuous ambition is to design and manufacture simple, reliable and easy-to-maintain equipment, through quality and innovation," company officials say.

Through its network of business units, TLD offers belt loaders, pushbacks, baggage tractors, cargo equipment, ground power units (GPUs), lavatory

and potable water equipment and passenger stairs, among other equipment.

With approximately 200 engineers and more than 400 Alvest employees dedicated to after-sales support and spare parts, company officials say they have a "strong backbone" in place to support its customers around the globe.

the level of service for all of our customers," said Gray.

Swissport Welcomes Doyle

Swissport named Chris Doyle as new general manager cargo – Pacific.

Doyle has led several cargo operations, most recently as international cargo manager for a major airline.

ACL Airshop Promotes Four Key Executives

ACL Airshop recently promoted four key executives to senior leadership positions.

Jos Jacobsen was named managing director and chief operating officer for eastern hemisphere operations and global leasing; Wes Tucker was appointed as executive vice president and chief operating officer for western hemisphere operations and manufacturing; Mattijs Farber was installed as group controller; and Harold Elfring was named director of technology and IT systems.

"These well-earned and richly deserved promotions from within our ranks reflect the high-performance culture of ACL Airshop. Our vibrant, entrepreneurial organization is well known for its speed of service and exceptionally high professionalism," said Steve Townes, chairman and CEO of ACL Airshop and founder of Ranger Aerospace. "These four exemplary leaders personify what we mean when we say our people truly have the right stuff."

OCV Fluid Solutions Announces Appointments to New Roles

OCV Fluid Solutions announced strategic movements of existing team members along with appointments of new employees.

In December, chief financial officer Mike Woods retired after serving more than 40 years at OCV. Newly appointed as his replacement is Sharon Hamblin. Hamblin's primary goal is improving OCV's bottom line via progressive reporting and overseeing overall financial health. Also new to OCV is Felicia Keim, selected for the position of customer service and logistics administrator.

As OCV is expanding, two new positions were developed and subsequently filled with existing team members: Jarrod McCain, manager – North America waterworks division, and Alex Baul, manager of operations.

NEW DEALS

WFS Secures Ground Handling Contracts in North America

Cathay Pacific, Ethiopian Airlines and Allegiant Air have awarded new ground handling contracts to Worldwide Flight Services (WFS) in North America.

At Newark Liberty International Airport, Cathay Pacific has extended its passenger handling agreement of the past five years to now also include ramp, cabin cleaning and deicing services for its daily Boeing 777–300 flights to Hong Kong. WFS now also provides ramp, passenger services and aircraft deicing for Ethiopian Airlines under a new three–year contract awarded at Houston's George Bush Intercontinental Airport. WFS also commenced its latest above and below wing ground handling contract with Allegiant Air. The three–year agreement will see WFS providing services for some 400 Airbus A319/320 flights a year at Baltimore/Washington serving Savannah/Hilton Head International Airport in Georgia, Ashville Regional Airport in North Carolina, and Sarasota–Bradenton International Airport in Florida.

"I especially want to congratulate our local teams in Newark, Houston and Baltimore/Washington on winning these important new contracts with Cathay Pacific, Ethiopian Airlines and Allegiant Air," Mike Simpson, WFS' EVP, the Americas, said. "They have helped to build our reputation for service quality, safety and security in these key markets, which, in turn, is enabling us to attract such prestigious airline customers."

ABM Fueling Spirit Airlines at DFW

ABM announced it has begun providing into–plane fueling services for Spirit Airlines at Dallas Fort Worth International Airport (DFW) in Texas. This marks ABM's second client for into–plane fueling at the airport.

ABM Building Value

"We are excited about this business win and the opportunity to continue expanding our into–plane fueling portfolio, as well as our relationship with Spirit," said Alex Marren, president of aviation, ABM. "I am very proud of the team for establishing such a solid line of service so quickly through service excellence and demonstrated expertise, and I look forward to all we will accomplish in 2020."

"As ABM's inaugural partner for the start of their fueling services line at George Bush Intercontinental Airport last year, we see their commitment to providing quick, efficient service that helps keep our flights among the most on time in the country," said Tom McCartin, Spirit Airlines' director of fuel management.

Mallaghan Continues U.S. Expansion with Delta Contract

Mallaghan Engineering has announced a multi–million dollar contract with Delta Air Lines for the supply of bespoke Maintenance Platform Lifts (MPL) for use at airports across the United States. The equipment provides access to all areas of fixed wing and rotary aircraft, allowing maintenance teams to undertake work

on the aircraft at height both safely and efficiently.

"Our latest partnership with Delta Air Lines represents the next stage in our US expansion plan," Joe Griffith, commercial manager with Mallaghan said. "Innovation within the aviation and ground handling industries is at the core of our business and we have worked very closely with Delta throughout the design and manufacturing process. As a result, our talented teams have created truly bespoke equipment which successfully caters to the needs of Delta Air Lines' TechOps Aircraft Maintenance Technicians."

"Mallaghan Engineering has demonstrated a clear understanding of our business needs and have provided us with industry leading equipment with a range of bespoke features including better maneuverability, decreased size and side mounted engine hydraulics/mechanics," Joe Santos, director TechOps maintenance at Delta Air Lines added. "We look forward to continuing to work collaboratively with Mallaghan Engineering on future projects."

Menzies Signs American Contract at London Heathrow

Menzies Aviation announced it has secured a new, five–year contract with American Airlines at London Heathrow airport. The contract commenced on Jan. 1, and will see Menzies Aviation manage ramp handling and deicing for the airline

MENZIES AVIATION

at Heathrow, which is American Airlines' largest hub outside the US.

The announcement follows Menzies Aviation's recent contract renewal with the Lufthansa Group, announced in October 2019. The two renewals are Menzies Aviation's largest contracts at London Heathrow.

"Menzies has been an invaluable part of our team and has contributed directly to the impressive performance and safety standards we've seen through these years," Cesar Marchese, American Airlines' senior manager of customer services and operations – London Heathrow said. "I am delighted with the renewal of the partnership."

"We have enjoyed a long-standing relationship with American Airlines, with our partnership at London Heathrow dating back to 2015," John Henderson, Menzies Aviation SVP UK and Ireland added. "This contract is a testament to the hard work and diligence of our teams on the ground, and I'm delighted to see the relationship continue for a further five years."

Swissport Assumes Hub Management for Air Tanzania at Dar es Salaam and Kilimanjaro Airports

Swissport has been awarded a contract for hub management services for Air Tanzania at Dar es Salaam (DAR) and Kilimanjaro (JRO) airports, providing check-in and gate services, baggage handling, moving of aircraft, cargo loading and aviation security services for 21 flights daily.

"We are delighted that Air Tanzania has chosen to rely on Swissport's high quality, reliable and efficient operational services at its hub airports in Dar es Salaam and Kilimanjaro", says Jeroen de Clercq, head of Sub-Sahara and Israel, at Swissport International.

gategroup to Acquire LSG's European Operations

gategroup Holding AG announced it has reached an agreement to acquire the European operations of LSG Group from Deutsche Lufthansa AG.

The transaction comprises of LSG's

inflight catering operations in Germany, Switzerland, Netherlands, Belgium, Italy and Spain as well as the global equipment business trading under the Spiriant brand – the European convenience food operations trading under the Evertaste brand, train catering, lounges and the Ringeltaube operations.

As part of the transaction, SWISS International Air Lines has agreed to a further long-term extension of its successful partnership with gategroup to deliver its distinctive culinary offering to its passengers from Zurich and Geneva.

A long-term catering contract for Lufthansa's German operations has been awarded to gategroup. Lufthansa and gategroup will establish a joint venture to service the core hubs in Frankfurt and Munich.

Delta Cargo Becomes New LUG Client in Frankfurt

LUG aircargo handling has added Delta Air Lines to its customer portfolio at Frankfurt International Airport. The airline has been a customer in Munich for more than five years and LUG has now been able to extend the partnership to the station in Frankfurt.

In addition, LUG has been able to renew its contract with Uzbekistan Airways that was first signed in 2010. The airline offers two to three services (according to season) per week between Frankfurt and Tashkent with a mix of Boeing 767 and 787 aircraft.

dnata to Acquire Remaining Shares in Alpha LSG UK

dnata, one of the world's largest air services providers, has announced an agreement to purchase the remaining 50 percent of its UK inflight catering joint-venture, Alpha LSG, from the LSG Group.

Alpha LSG was formed in 2012 by the dnata-owned Alpha Flight Group and LSG Sky Chefs; each holding a 50 percent share of the business. The agreed share purchase has the full support of the LSG Group and Alpha LSG operations will continue as usual.

"Alongside the LSG Group, we have built a high-performing business in the UK and have helped our airline customers deliver innovative, world-class solutions for their customers," Robin Padgett, divisional senior vice president, dnata, said. "We appreciate the strong partner we have had in LSG over the past seven years and are excited to build on our success and bring Alpha LSG's employees into the dnata family."

"We would like to thank Alpha LSG employees for their dedicated service over the years, as well as our JV partner, dnata, for the trusting and collaborative partnership in the highly competitive UK market," Jochen Müller, chief operations officer, LSG Group, said. "This move will help to secure the continued growth of Alpha LSG and we look forward to a smooth transition while we continue our world-leading day-to-day operations."

PrimeFlight

PrimeFlight Aviation Services Acquires Appearance Group

Appearance Group, a Wichita, Kansas-based aircraft cleaning and maintenance company, was acquired by the PrimeFlight Aviation Services group of companies in December 2019.

"This is an exciting acquisition for PrimeFlight as it furthers our mission to be seen as the go-to aircraft appearance services provider within the aviation industry," said Dan Bucaro, president of PrimeFlight. "As we work together to combine our general aviation operations, we look forward not only to expanding our footprint to serve our customers in more places but to improving our overall service delivery."

In addition to offering full-service interior and exterior detailing services, Appearance Group offers leather care and maintenance services, including preventative maintenance, ongoing maintenance, and leather restoration services, under a Part 145 FAA repair station certificate.

Key Aspects of ULD Operations

The ULD Code of Conduct sets a foundation for both airlines and service providers to aim for when it comes to managing unit load device operations.

By Bob Rogers

Jan. 21, 2020, marked 50 years since the first commercial flight of the mighty Boeing 747, from New York to London. No doubt this newsworthy anniversary of an event which has probably changed all our lives, ushering in as it did an amazing era for civil aviation, will receive a good degree of coverage.

Less newsworthy, but of equal significance, is that this date marks the first use of unit load devices (ULDs) onboard passenger aircraft. Prior to this historic date ULDs were only found on narrow-body freighters.

Those 50 years of ULDs are an unescapable part of the DNA of airline and air cargo operations, facilitating as they do the daily movement of tens of thousands of passenger bags and tons of cargo through fast and labor-light aircraft loading/unloading operations, off-airport build-up and intermodal transport and specialist cargo, such as race horses and pharmaceuticals.

Yes, there is no question, the roughly 900,000 ULDs in service between the world's airlines contribute enormous value to efficient airline and air cargo operations.

However, there is a flip-side to this glowing description of ULDs, which is as the industry has grown over 50 years ULDs often find themselves being stored, transported and used in a less-than-appropriate manner, leading to some unsatisfactory outcomes.

Outcome 1: The first and foremost purpose of any ULD, once on the aircraft, is to provide a defined level of restraint during normal and abnormal flight conditions. This is, indeed, the first and foremost requirement of any ULD – failure to perform this function when needed can, and indeed has, led to severe damage to aircraft, including crashing. Unbeknownst to probably most people who work with and around ULDs, this box or pallet is in fact a part of the aircraft's flight safety process and is subject to the same level of regulatory oversight as any other part of the aircraft.

Outcome 2: Since that first 747 flight 50 years ago, airlines have to a great extent outsourced their ground handling and cargo operations to third-party organizations, which range from multi-location giants to single-station/single-airline minnows. And here is the kicker, while airlines operate within a highly regulated safety environment, the ground handling community is generally not subject to the same level of direct safety regulation.

Outcome 3: It is no secret that airports are often crowded places. Yes, there are some wonderful, shiny, new airports with acres of space, but all too often ground ops are carried out in very congested conditions – a situation made worse by the larger and larger number of ULDs carried on today's aircraft. The 777-8x, which is about to enter service, will carry almost 10 percent more ULDs than its earlier models, and indeed, just the forward holds of A350 XWBs and

All photos courtesy of ULD CARE

787s carry more ULDs than the first generation 747 in all holds. This "stealth growth" in the number of ULDs arriving and departing on each aircraft places an ever-increasing challenge on the ground.

Outcome 4: It is also no secret that the handling and cargo industries face enormous challenges to hire and retain staff, meaning that all too often that person building up or moving a ULD that is about to transport maybe 10,000 kilometers on a $200 million (USD) aircraft has a negligible understanding that this container or pallet they are working with is about to perform a flight safety function.

Airlines have, to a greater or lesser extent, wrestled with these outcomes for 15 years now. Probably the first "wake up" call came in 2005 when the Federal Aviation Administration (FAA) in the U.S. published their AC 120-85 "Air Cargo Operations" as a result of the Fine Air Flight 101 in 1997. Spelling out in plain language and considerable detail, this Advisory Circular provides one, but not the only, manner in which airlines can conduct compliant cargo operations. ULDs are mentioned more than 150 times, reflecting the regulatory expectations, at least of the FAA, for ULD operations.

The AC 120-85 was a "cold bath" for a number of airlines who found themselves on the wrong end of spot audits across the U.S., with the FAA having the authority to carry out checks on any aircraft landing on U.S. soil. ULD managers scrambled to ensure that only serviceable, properly built up ULDs were loaded to the aircraft, but with one hand tied behind their backs as these safety critical functions are almost entirely carried out by outsourced vendors. However, much money was thrown at buying new ULDs and cargo nets, and repairing both time and time again real-life operational standards of ULDs remained unacceptably below par.

While individual airlines did their best to address this, there is little one airline can do to change the culture at a service provider handling multiple airlines. Perhaps it was possible to make a difference at home base, but at locations half way around the world, driving change was close to impossible.

In 2010, IATA picked up some slack with an enhanced focus on ULDs, leading to the publication of the IATA ULD Regulations in January 2013, and providing for the first time a comprehensive reference guide to ULDs for

the industry. Enhanced training courses and other support materials followed.

Meanwhile over at ULD CARE, the "club" for ULD owners, operators and providers, a 10-minute video "SOS ULD" communicating the flight safety function of ULD was produced as a vehicle to reach out to the entire industry, and this was followed a couple of years later by the publication of ULD CARE's "ULD Explained" – an easy-to-read "how to" on ULDs.

Enter stage left the ULD CARE ULD Code of Conduct. Search "code of conduct" online and you will get 776 million hits. Codes of conduct are widely used across many industries as a means of establishing a set of expectations for any particular activity. Codes of conduct, however, are not so common in aviation, where the level of external regulation by the International Civil Aviation Organization (ICAO) and the national aviation authorities is more than sufficient to police the industry. So why a code of conduct for ULDs?

As laid out earlier in this column, the actual handling of ULDs is rarely performed by *highly regulated* airlines, falling instead to *generally unregulated* service providers. The ULD Code of Conduct crystallizes the key aspects of ULD operations.

A code of conduct coming from a community organization such as ULD CARE carries a greater weight than the action of any one airline – however large they may be.

While being both voluntary and non-binding, the ULD Code of Conduct sets a foundation for both airlines and service providers to aim for. Nobody has expectations of a perfect world where each and every ULD is always stored, transported and operated perfectly. Of course, bad stuff will happen, but with a code of conduct in place, there is a chance to review such failings in an objective manner.

The code itself comprises of 1+10 specific expectations. The "one" is that airlines/ULD providers shall provide ULDs that are "fit for purpose," while the "10" are the requirements for those organizations doing the day-to-day ULD operations. All are based on the content of the IATA ULD Regulations, and "behind" each line on the website are links to extensive supporting material. Online sign-up by any related organization is free and there are no audits or other checks – as with many codes of conduct, compliance is the sole responsibility of the participant.

Following a soft launch in 2017 and a hard launch in 2018, the list of sign-ups is growing – recent additions being Menzies Aviation and Hactl, with others are in the pipeline.

These are exciting times for the ULD community, with some really interesting technology innovations coming into play that can finally provide ULD owners and operators with a far closer visibility of both the location and condition of their ULD assets.

Fifty years on these are very welcome developments, which if they live up to expectations will drive an increase in attributable responsibility for the condition of ULD assets, putting the ULD CARE ULD Code of Conduct firmly in the spotlight. **GSW**

▶ ABOUT THE AUTHOR:
Bob Rogers has spent most of his working life in Asia Pacific, a resident in Hong Kong and for many years running the Asia-Pacific operation of Nordisk Aviation Products. Mostly retired from a demanding "day job," these days he remains actively involved in promoting and supporting a wider understanding of ULD through his involvement with IATA and ULD CARE.

DON'T LET AN ICY SITUATI

When winter brings snow and ice to the ramp, having the proper equipment in place allows ground handlers to keep departures on schedule.

By Josh Smith

Winter conditions pose a challenge for every facet of aviation.

Whether an airline, ground handler or ground support equipment (GSE) manufacturer, cold weather conditions are on the forefront of many minds as all parties share the same priority of keeping commercial aircraft operating on time.

That's why deicers, heaters, snowplows and other winter equipment become paramount when ice and snow begin to accumulate at an airport.

"The winter season can throw such a wrench into how the airline industry is ran," explains Luke Brown, director of sales at Ground Support Specialist. "All the equipment changes because of how complicated winter can get.

"Still, planes need to take-off no matter what the weather."

ON GET DICEY

Photos courtesy of Ground Support Specialist

The Right Equipment for the Season

As a worldwide ground handling company, Menzies Aviation operates at more than 200 airport locations and across six continents, so a wide range of GSE is required throughout the year.

"There are some items of GSE, such as deicing rigs, which are used significantly more during the winter months," says Jim Cree, GM of technical standards – winter ops at Menzies.

In addition to deicer trucks, deicing fluid storage facilities and pumps, warm air blowers, cabin heaters and ground power units (GPUs) also take on a more significant role as temperatures dip.

"We also use PCAir carts that have a heat function, as well as cooling, for winter operations in southern states," adds Don Redwine, senior manager of fleet planning, reliability and warranty at Southwest Airlines.

This range of winter equipment is critical for cold weather operations and getting reliable performance from these units takes on more importance.

In order for a ground service provider to determine the appropriate equipment for a specific station, both climate and the aircraft being serviced should be considered.

For example, explains Adam Houpt, vice president of operations at Ground Support Specialist, if the biggest aircraft at that airport is a Boeing 737 or similarly sized plane, a full-size, wide-body deicer isn't necessary.

"But then again, the reality is, should a plane land there, you have to have equipment there capable of servicing that," Houpt notes.

Likewise, a warm-weather location will not need to perform deicing tasks as frequently as its cold-weather counterpart and can purchase equipment accordingly.

"If you're talking about, for instance, Chicago, obviously you've got a wide range of aircraft flying in there and the turnaround time is the blink of an eye. It would make sense for someone to look at wide-body deicer that can service an entire fleet," Houpt points out.

"At some point, they have to weigh the pros and cons of 'do we have this extra expense for this larger capable unit? Or can we swing it if a random, rogue plane lands there?'"

Photos courtesy of Southwest Airlines

GSE Features

Because of the complexity winter poses to ground support operations, regular updates to GSE aim to make the turnaround process smoother.

"We have a new fleet of deicers from JBT we are using for the first time in MSP this season," Southwest Airline's Redwine offers as an example.

With more than 200 deicing vehicles in their GSE fleet, Menzies Aviation is utilizing several advancements.

"This ranges from the use of forced air and 'fluid blend up' technologies in our more advanced enclosed basket deicing rigs, to the use of intuitive hardware – both fitted to the deicing rigs in the form of telemetry and sensors, and handheld devices, which provide real-time visibility of aircraft deicing activities to our customer airlines and also to the wider airport communities," Cree says.

"We recently introduced the ability to electronically deliver the anti-icing code to the aircraft following deicing, via ACARS, or directly into an EFB," he continues. "This seamless transfer of the required deicing data enhances the deicing experience provided to each aircraft's flight crew."

From a manufacturer's perspective, Ground Support Specialist has developed its GS2100 Wraptor deicer to provide versatility to those working in the field.

"We are able to handle those small, little commuter aircraft all the way up to a wide-body," Brown says, adding the first generation is an open-basket design, but an enclosed basket option is also in the works.

Features – ranging from a single-engine vehicle and purpose-built chassis, to a 44-foot, 6-inch working height and 2,000-gallon total fluid capacity, to its 147.6-horsepower engine and swing-out module for maintenance ease – were integrated from feedback GSS received for service providers on the ramp.

A single-engine design, Brown notes, eliminates some environmental concerns and reduces the number of components that may need repair.

"These are heavy machines, so they have a lot of maintenance that they have to have on them. Reducing that definitely reduces the maintenance," he says. "It also makes it a green deicer. While we don't offer equipment that's electric, this is an option where it's going to reduce emissions."

Spec'ing Considerations

When making a deicer purchase for a station, there are multiple factors to weigh.

"New technologies should always be welcomed and embraced," Menzies' Cree says. "And we work with the GSE providers to develop and employ these in order to enhance the provision of services to our customer's aircraft."

Again, climate, weather patterns and traffic volume can play a major role in these decisions. Officials at GSS note an operation can handcuff itself if it misses the mark on determining a certain working height or fluid capacity.

"How many planes are you deicing that day? How often are you able to put more fluid into your deicer?" Brown asks.

In addition to determining the boom height and working height necessities, the basket style also needs to be considered. An

enclosed basket provides additional warmth and comfort in the winter–time, but an open basket can provide better vision and versatility – for example, using the vehicle for aircraft washing in warmer seasons.

"At our larger deicing operations, and where there is a significant use of centralized deicing facilities, aircraft are deiced with their main engines running," Cree points out. "There is a necessary drive to invest in the latest enclosed basket deicing rigs, often with a single–operative capability. This type of equipment creates a significantly improved operating environment for our colleagues, while also providing many additional options and enhancements for our customers.

"As part of the portfolio of services, we provide wet and dry exterior aircraft washing services at several airport locations," he adds. "We use our 'open basket' deicing rigs for this service, which allows us to cross–utilize GSE throughout winter and summer months. The added benefit of this approach is the use and maintenance of the equipment is spread across the whole year, ensuring a good investment."

"I think that weight limit is important, too," Brown adds in regard to basket design. "It gives users the opportunity to put two people in the basket. That can help out with training significantly."

The capacity for deicing fluid, both Type I and Type IV, also becomes crucial.

"It has a lot to do with turn–time and the ability to service multiple aircraft throughout the operation," Houpt says, noting smaller deicers may have a capacity of a few hundred gallons while larger units may handle upwards of 2,000 gallons.

"When you're choosing what kind of truck you're looking for, in addition to what airplane it's going to service, you have to know how often you want to refill," Brown points out. "If you're going to have to refill every truck, especially on a snowy day, you might want to con–sider a higher capacity of fluid – just so you don't have to continually refill it all day."

Horsepower also becomes an important consideration, and the amount necessary varies depending on application, such as the use of forced air deicing.

GSS had ease of maintenance in mind when designing its swing out module, allowing the engine compartment to pivot away from the vehicle for better access.

"They don't want to crawl into the back of it, when they can just be standing up and working on it. It makes it a lot easier for them," Brown says.

As with any piece of equipment, reliability and after–sale sup–port is crucial. When bad weather threatens to delay or even cancel flights, a deicer working properly when called upon becomes even more essential.

"Reliability during cold weather operation is the foremost consid–eration followed by after–sale support," Redwine confirms.

"We've got specific timeframes," says Houpt. "Whenever a plane is grounded, and they're out there prepared to be deiced, you have to rely on your unit for the function and quickness of it – starting up, getting up to temp and having the ability to deice, turn around and anti–ice within the allotted time, so we can get the planes into the sky as quickly as possible." **GSW**

NEW FEATURES TO CREATE EXPERT DEICING OPERATORS

By Josh Smith

Due to the seasonal use of deicing vehicles and related equipment, officials at JBT have recognized their customers face a serious issue of retaining experienced staff on operation and maintenance teams. To combat this, engineers have integrated new features focused on turning novice oper–ators and mechanics into experts.

Photo courtesy of JBT

David Bunting, EMEA regional director at JBT, explains the com–pany has designed intuitive control functionality into its latest deicing vehicle.

"This prevents inexperienced operators having to fumble through complicated controls and switches to prepare to deice," he explains, offering the Tempest-i's EZ Jib function as an example, which automatically syncs jib, boom and extended reach movements. "The point is, anyone can pull back on a joystick and thus this feature minimizes the operator having to think about all the boom movements needed to get to the perfect reach position."

The deicer's Boom Auto Park function brings the boom safely into a rest position; Advanced Radar APD provides operator feedback on basket, boom and chassis position relative to the aircraft; and the BakTrack feature provides extra reach for one-man operation. All these features are designed to simplify operations.

"Experience level settings (novice, intermediate and advanced) help training and improve operation con–fidence for a variety of operator experience levels," Bunting says. "These different modes slow and limit boom movements so operators can build their confi–dence using advanced deicing equipment."

Maintenance is also streamlined with advanced diagnostics that provide personnel with feedback of all sensors and devices, allowing for quick troubleshooting.

Photo courtesy of Universal Aviation

Asia's Strides Toward Safe Handling Practices

Benefits of implementing a positive safety culture include personal growth, organizational development and outside-the-box thinking.

By Mario Pierobon

Safety culture is an important key to successful safety performance in the aircraft ground handling environment. The East Asia region has distinctive cultural peculiarities that require specific organization safety culture promotion initiatives.

According to KH Kwak, Swissport Korea's head of quality, health, safety and environment (QHSE) and training, there are some cultural traits that may increase the fear of repercussion throughout the ground handling industry in the Far East and other parts of Asia. These cultural features include respect for the rules, team and group culture, respect for superiors and the concept of "keeping face."

Photo courtesy of Swissport

"Asians may not actively express their thoughts or opinions compared to people of other continents. This phenomenon can be seen as a result of rigid up-and-down relationships among employees. However, many Asian countries have tried to solve these problems not only in the ground handling industry but also in various other fields," says Jaeseong Lim, CEO of UBjet Aviation. "Also, Asian VIPs usually set great store by formality and escort service. Conversely, CIQ [China Inspection and Quarantine] officers are not cooperative to businesspeople. They are reluctant to provide a private jet's passengers with special convenience, based on the idea that it's unfair to give privileges to some people, even to corporate executives, as they are the same with passengers who take a commercial flight. So, providing a seamless service for the passengers is difficult sometimes."

There are several factors that can influence and increase the fear of repercussions in the ground handling environment.

"The Far East or Asian culture may have a big

impact, but the significant impact of fear is the culture of the organization," says James Nainggolan, regional safety manager of the Asia–Pacific (APAC) Region at Universal Weather and Aviation. "When discussing the culture of the organization, the term 'nonpunitive' must be seen throughout the organization. This means the top to bottom must breathe and support it. It will not be an effective safety or operational program if the leadership does not practice the non–punitive/safety culture.

"Moreover, if the top management who are influenced by the local culture does not support the safety culture and runs the organization based on local culture, it will confuse the organization," he continues. "And, when confused, more often than not, the organization will revert to what is familiar and that is the local culture."

Asia is composed of several countries with vast territories and diverse cultures and languages, so an over–generalization would be inappropriate.

"The diversity of such cultures and languages plays a very important role in breaking down prejudices between each other in safety. This unbiased safety can lead to accurate information and shortening the time required for safety," says Lim.

Kwak believes there are several aspects of the national and organizational cultures that have a positive influence on safety in the Far East and Asia. These include a tendency towards being hardworking, reliable, conscientious and diligent. There is also generally a tendency to follow the rules, maintain a team and group culture, have respect for superiors and value education.

"All aspects of the national culture can have positive influence on safety. It is how the organization builds on the national culture that will determine how successful the national and organizational culture can be a positive influence on safety. Of course, it will not work if the whole of the organization does not talk the talk and walk the walk," says Nainggolan.

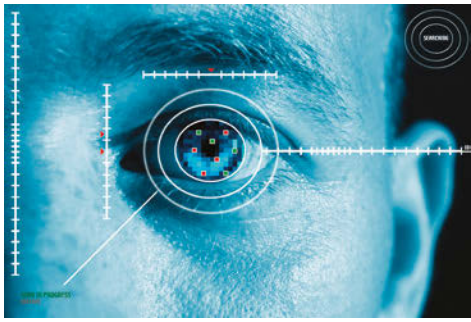
There are currently several initiatives being implemented by the aircraft ground handling service providers in Asia to support a positive safety culture and they cover specific aspects.

"Actively listening to employees is one of the initiatives we have implemented and which we firmly believe strongly supports a positive safety culture in Swissport Korea. This approach has enabled us to gain a better understanding of the risks confronting front–line staff and encouraged staff to become more actively involved in maintaining a safe work environment," says Kwak. "Unsafe conditions and behaviors are

reported by employees openly every month and active suggestions on safety are encouraged in various meetings.

"This active and open communication is the first step to make everyone become voluntary safety leaders."

In addition to listening closely to the safety concerns and advice from staff, Swissport Korea is committed to fostering an effective communication culture where all safety information flows smoothly between management and staff. This ensures every-



FACIAL RECOGNITION TECHNOLOGY

Industry advancements in Asia are being rapidly developed and this includes facial recognition technology.

"Facial recognition scanners are everywhere in the Bejing Daxing International Airport in China. It links a passenger's face to their passport at check in, and this improves safety and security of operations. Airports in the Far East and Asia are being systemized," explains Jaeseong Lim, CEO of UBjet Aviation Inc.

"In parallel with increasing system installations such as fingerprint recognition and facial recognition, safety is going to be enhanced," he adds. "Also, passengers can save time at immigration. Instead of the face-to-face inspection, program participants may enter and leave South Korea by using smart entry service auto-gates, which only take less than 12 seconds."

one is fully cognizant of the "safety first" message.

"Another effective safety initiative within Swissport Korea is a program of regular local 'Safety Patrols' which are performed by various staff members together as a team," Kwak points out.

The implementation of a safety management system (SMS) is a great spark that provides a positive influence on the safety culture of the Far East and Asia, according to Nainggolan.

"Ground handling has been an industry that was overlooked and perceived as having a less risky role in the business jet ground handling industry. If one takes stock of the civil aviation organizations around the world, almost all do not have any regulatory mechanism for business jet ground handling operations. This is changing with the growth of the industry and the adoption of safety programs with SMS in tow," he says. "With the integration of SMS into the business, it also helps the organizations to implement organized systems to make sure that standards and operational quality are held and, at the same time, to implement improvements for the industry."

Indeed, there are significant benefits of positive safety culture implementation in ground handling.

Photo courtesy of Universal Aviation

"By achieving high safety standards, we can ensure our staff go home safely at the end of every shift and our customers can rest assured that they are in safe hands. A safe environment ensures Swissport Korea is equipped to overcome future challenges and grow without undue risk," says Kwak. "To maintain high safety standards Swissport Korea is continuously on the lookout for innovative advances in technology, ground service equipment and work processes to take the risks out of ground handling."

In recent times, ground handling companies have received more recognition as a key player in the aviation industry especially in terms of airside safety.

"Ground handling companies are becoming increasingly involved in and initiating various activities not only for safe aircraft handling but also general airside safety," says Kwak. "Swissport Korea is also actively participating and contributing in various ways together with other parties to improve airside safety and safe aircraft handling."

The benefits of positive safety culture implementation are personal growth, organizational growth and outside-the-box thinking.

"Implementation of safety culture encourages persons and organizations to look outside for solutions," concludes Nainggolan. "This looking outside also helps the industry share their 'war stories' and help each other improve operations." **GSW**

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How FBOs Can Prevent Misfueling

Having avoided catastrophe, industry groups are working diligently to ensure aviation fuel is not contaminated with diesel exhaust fluid.

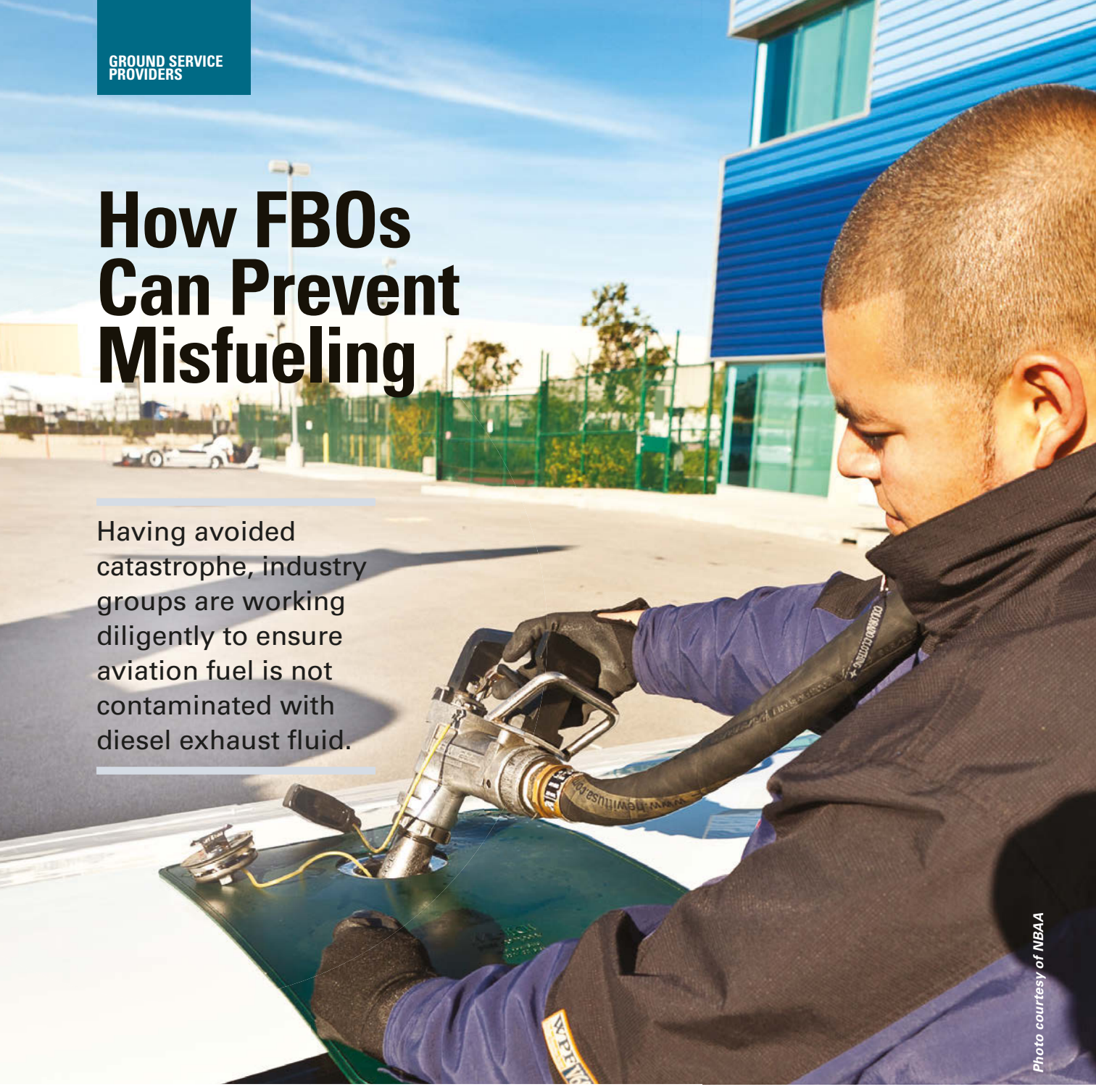


Photo courtesy of NBAA

By Josh Smith

Providing clean, dry fuel to aircraft is perhaps the most important ground handling task performed by fixed base operators (FBOs). Being able to carry out this duty while reducing harmful emissions sounds like a win-win situation.

However, when these two initiatives became inadvertently intertwined, the aviation industry narrowly avoided catastrophe.

As a result, the general aviation community has come together to take steps that ensure future potential for diesel exhaust fluid (DEF) contamination of aircraft fuel is mitigated.

What is DEF?

According to the Diesel Technology Forum, diesel-powered ground support equipment (GSE) began utilizing diesel emissions control systems more prevalently in 2014 in order to reduce emissions and improve air quality for ground service providers.

These modern GSE units deploy Selective Catalytic Reduction (SCR) systems that allow the equipment to produce nearly zero emissions and meet emission standards put in place by the U.S. Environmental Protection Agency (EPA).

John Fischer, an engine consultant based in

Illinois, explains that DEF allows engines to operate at high combustion temperatures, thereby minimizing production of particulates.

"The usage of DEF is to change the excess NOx produced at these higher temperatures into water and nitrogen through a process called Selective Catalytic Reduction," Fischer explains. "Thus, the emissions of the two most critical components of diesel exhaust – particulates and NOx – are reduced."

Mark Larsen, senior manager of safety and flight operations at the National Business Aviation Association (NBAA), notes DEF is not a fuel additive. Rather, it is stored in a separate reservoir on the diesel-powered equipment and interacts with emissions in the equipment's exhaust line. While any diesel-powered piece of GSE can be equipped with a DEF reservoir, they are commonly found on aircraft fueling trucks, distinguished with a blue cap.

"The diesel-engine vehicles and equipment that require diesel exhaust fluid to meet the emissions standards have computers onboard that look to make sure there is diesel exhaust fluid available in the reservoir for its normal use. When it's not found, then the computers automatically reduce the engine's power output," Larsen says.

Fuel Contamination

Though introduced to GSE for the noble purpose of reducing pollution, DEF has been the subject of several contamination incidents that have led to inflight emergencies.

Three confirmed events have taken place in the U.S., involving multiple aircraft, where DEF has been inadvertently added to aviation fuel as it was pumped into planes.

"JET-A fuel trucks commonly have a fuel system icing inhibitor (FSII) metering system, that includes another reservoir for storing FSII and equipment that meters that FSII into the fuel as it is uplifted into the aircraft," Larsen explains. "In each of these situations, DEF was mistakenly added to the fueling truck's FSII reservoir."

This error can happen for a number of reasons. One obvious one is that FSII and DEF are both clear liquids. What's more, they can both be purchased in similar 55-gallon drums.

"Unfortunately, the tanks on trucks don't always have the same type of tank and/or fill location from truck to truck for each fluid," points out Jeremy Hill, line manager at Holman Aviation, based in Great Falls, Mont.

When DEF and jet fuel combine together, it forms crystalline deposits. Those deposits clog the fuel lines and fuel filter on the

Photos courtesy of Holman Aviation

aircraft, ultimately cutting fuel off from the engine while in flight.

"We also know diesel exhaust fluid is corrosive to a number of substances. Aluminum, for example, is among the things it's corrosive to," Larsen adds. "When you put fuel and DEF together, extensive damage through the aircraft's fuel system occurs."

The three confirmed DEF contamination cases in the United States happened under differing circumstances.

One event in Omaha, Neb., took place because DEF and FSII were both purchased in 55-gallon drums and stored in the same room. When a line service technician went to retrieve additional FSII for a fueling truck, that person filled a bucket with DEF instead. Because both liquids are clear, the mistake was initially undetected. DEF was added to the FSII tank and metered into the aircraft.

"They had aircraft that had engine issues at Omaha, fairly quickly. The FBO started with standard fuel quality testing, but all the initial tests were coming back appropriate," Larsen says.

"It wasn't until they took samples of what was coming out of the fuel nozzle during the uplift and sending it off to a specialized lab, that they realized there was urea in that test sample. Urea is one of the primary substances in diesel exhaust fluid," he continues. "That's how they put it together that DEF was the contaminant."

Another event in Opa-locka, Fla., involved a Falcon 900 that ended up in flight. In this case, a fueling truck's FSII tank had a leak. It was removed and repaired. When the tank came back to the FBO, a leak check was performed.

However, during this test, DEF was used inadvertently.

This FBO had taken steps to avoid DEF contamination, but because the tank was not installed on the truck during the leak test, those measures were accidently circumvented.

The third event also involved a line service technician working to refill the FSII reservoir on a fuel truck. A partially filled bucket with a clear liquid initially thought by the technician to be FSII was further filled with FSII and the bucket's contents were poured into the truck's FSII reservoir. It turns out that the initial quantity of liquid in the bucket was DEF. This time two Citations were affected.

"They had a quick repositioning flight from Punta Gorda, Fla. where they took on the contaminated fuel to Naples, Fla. They had added more fuel at Naples while they waited for passengers there. Both of those aircraft on their flights from Naples had issues in flight," Larsen says, noting one flight experienced a dead-stick landing.

"Lucky we got airplanes on the ground in all of these events," he adds. "The reality of this hazard, though, is the potential of a much more catastrophic outcome."

Solutions to Address the Problem

After these situations were reported, the general aviation industry put together a working group to understand what happened at each location.

The Aircraft Diesel Exhaust Fluid Contamination Working Group, as a result, published a report on the hazard of DEF contamination in aircraft fuel, which was published in June of 2019.

The creation of the report has raised awareness of this hazard and has opened dialogue. It also encourages the operators of the aircraft to be engaged in the fueling process with the FBO.

"One of the things we've suggested is buying different size containers for the DEF. You can find it a lot of other places. It's really not any more expensive to buy it in, say, 2.5-gallon containers than it is when you consider what a 55-gallon drum costs," Larsen says. "A lot of FBOs are also storing the DEF under lock and key that only a certain set of individuals actually have the key for that lock and are very well trained."

Photo courtesy of NBAA

The FAA also convened a Safety Risk Management (SRM) panel on the topic and released an additional report on jet fuel contamination with DEF in August of 2019.

The National Air Transportation Association (NATA) has also been a vocal leader in preventing misfuelings.

"NATA is proud to have taken a lead on preventing DEF contamination," says Mike France, managing director of safety and training at NATA. "We released DEF contamination prevention training within two weeks of the first contamination event and then integrated that training into our Professional Line Service Training requirements.

"The NATA Safety Committee released the Safety 1st Operational Best Practice for DEF Contamination Prevention," France notes. "We recently released an updated version of our DEF Contamination Prevention Training into the new Safety 1st Training Center and distributed free DEF decals to our members and the industry."

The National Transportation Safety Board (NTSB) has recommended several steps for fuel providers to take to avoid confusion and risk contamination. Among others, the organization recommends that FBOs clearly mark chemical containers that meet OSHA requirements with stenciled letters or decals like the ones provided by the NATA. These markings should be visible on all sides of the container.

Even when the containers are clearly marked, the NTSB recommends that FBOs do not store DEF and FSII close to each other, since it is hard to differentiate these colorless liquids.

What's more, all staff should be trained on the storage locations of DEF and FSII, the packaging and labeling of both chemicals and the hazards associated with aviation fuel contamination.

Individual FBOs have taken action, as well, to further mitigate the risk of fuel contamination.

"In August of 2018, we decided on and implemented a system that we thought would be a huge step towards avoiding an incident at our airport," Holman Aviation's Hill says. "We also put our employees through NATA misfueling prevention training and emphasize the correlation between fuel type/grade misfueling and additive misfueling. The NTSB released a safety alert that we also use as a job aid."

He explains his FBO has migrated to a totally enclosed system with FSII.

"All of our fuel trucks that have a FSII tank on them have a safety wired dry-break system for filling the tank," Hill notes. "Never say never, but a line tech is unable to pour any fluid into one of our FSII tanks without using the dry-break system."

Most important is the education of the men and women on the ramp.

"Train and brief. Brief and train," Hill says. "Don't stop talking about it." **GSW**

Navigate New Baggage-Tracking Regulations with Ease

With RFID as the technology enabler, airports are able to significantly increase the number of read locations throughout the terminal.

By Michael Irons

Based on the latest International Air Transport Association (IATA) projections, aviation is expected to double over the next 20 years to 8.2 billion passengers. There will also be an increased load on existing infrastructure and operational performance of airlines, airports and ground handlers. Ensured capacity to support this growth is key and how data is captured, stored, managed and exploited in a safe and secure manner is also important. This is fundamental across all aspects of airport and airlines operations.

Over the past decade, the rate of mishandled baggage has fallen from 18.9 per thousand bags to 5.69 per thousand bags (as of 2018). While this is an improvement of 70 percent, the cost of mishandling still totals $3.2 billion.

Over the past three years, the baggage mishandling rate has remained broadly the same with roughly 5.5 mishandled bags per 1,000 passengers. However, last year, mishandled baggage slightly increased due to ticketing and tagging errors. In order to improve baggage mishandling, IATA introduced Resolution 753 for tracking baggage at a minimum of four locations: check in, loading, transfer and arrival.

With radio-frequency identification (RFID) as the technology enabler, this opens the opportunity for

starts with the adoption of an up to date messaging standard.

XML is a messaging standard with an intelligently designed information model.

People and devices can easily read XML, and it allows superior information integration between airline operations. Per a report by IATA, this is an extensible messaging technology, which means that it can be added to when required by new information or practices. Despite this, XML is standardized and therefore simple for multiple suppliers to use.

The challenge with this is that all airlines have implemented the Type B messages for their baggage operations. Since not all airlines have started to move to XML, interline and transfers may be impacted.

Benefits of Adopting XML

There are some key benefits associated with the adoption of XML, which removes some of the challenges and barriers with the existing Type B messaging.

The XML is driven by the use and adoption of the Airline Industry Data Model, which helps with the definition and the data content. Coupled with the XML Schema Definition (XSD), it reduces the overall complexity. In addition to the adoption of XML, the solution is further future-proofed due to the users' ability to add and remove content as needed by the industry. It provides backward compatibility with an adaptable message format.

With the potential to include additional information, there may also be the need to secure the data, which can be delivered with the use of an embedded digital certificate.

In addition to the above, the use of XML is widely adopted within the digital realm and used extensively by airlines and airports; thus, knowledge already exists in many organizations. As a result, there are no proprietary

airports to significantly increase the number of read locations throughout the terminal. As a result, airports will be able to predict luggage that may be delayed and thereby proactively start to manage baggage that is "at risk" of not making it to the aircraft as scheduled.

One of the primary misconceptions is the current infrastructure needs to be completely changed. In reality, the RFID complements the existing solution and can provide a non-impactful route to the adoption of the technology.

With the requirement for Hold Baggage Screening (HBS), it is now possible to validate and accurately report the journey through the screening area and then start identifying if it is being sent to secondary screening and potentially tertiary screening.

What does that mean for the bag getting to the makeup areas within the terminal?

It can start capturing, storing and analyzing these data points to better predict and manage the operation.

There are numerous areas where the industry can start to improve the operation and reduce mishandled baggage. This

While having **both barcodes and RFID available**, airlines are able to make the migration to **Resolution 753**. This complementary approach will ensure that **operational continuity continues** even while airlines move to RFID.

services of systems that need to be utilized.

So how does the industry move forward with RFID tracking, XML adoption and realizing the achievable benefits?

To deliver the step change required to capitalize on RFID capabilities alongside the use of XML messaging, there are key areas that will need to be adapted, developed and implemented. These range from the actual tags to the common use/dedicated workstation and peripherals to the baggage sortation system and reconciliation system to the airline's departure control systems and arrivals displays.

Airports must also make fundamental decisions. For instance, will it be a local install with the associated integration platform, databases and servers or a cloud-hosted centralized service that will be accessible to all parties irrespective of airport or geography? Is there a regional approach required for adoption?

In deciding whether to move forward, the key issue is with building a business case, establishing ROI and determining how the customer experience is enhanced. None of this will happen overnight and it will require a substantial amount of planning, implementation and execution. Having been potentially set prior to Resolution 753, the airport's strategic road map may require adaption and budgeting in order to be implemented.

The key challenge that the industry will encounter with this new capability is how to move forward with the migration. The migration strategy will be key to building the momentum and adoption – as the true benefits for the industry will only start after momentum is built.

Some of the major airlines have been able to implement the RFID tracking and have seen great response from their customers; however, they invested heavily in deploying RFID to be able to provide additional levels of customer service.

Implementation and Migration

While RFID can be deployed alongside traditional barcodes, the industry needs to consider

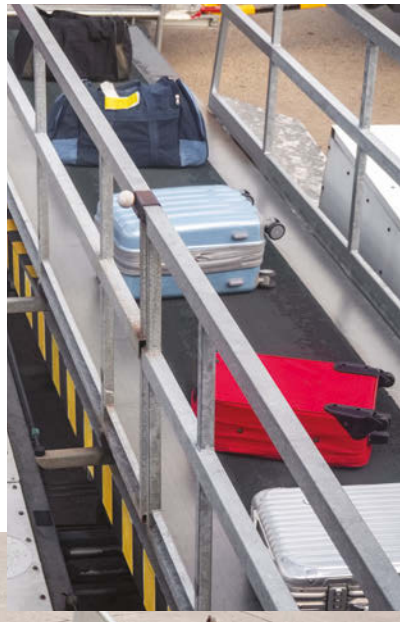
several areas in the planning and implementation process in order to do so effectively. Since the majority of airports already have baggage sortation, reconciliation and screening as part of their operations, the key focus will be moving – in a planned manner – away from the barcodes to the new RFID world.

Will the airports stop printing barcodes and data on the baggage tags? This is unlikely, as it provides a very visual way to identify the routing details of the bag. Will the barcode read at the same read rate as the RFID? All evidence points to the fact that RFID will perform at a higher rate. Therefore, while having both aspects available, airlines are able to make the migration to Resolution 753. This complementary approach will ensure that operational continuity continues even while airlines move to RFID – no one is left behind.

Implementation of RFID is seen as the opportunity to improve baggage handling and processing. But with the potential to read a ULD full of bags at once, the key to making this work is ensuring the business processes are reengineered to support the new paradigm. Not all airports will approach implementation and migration in the same way, so it's key to ensure that whomever they partner with can deliver a comprehensive approach to the migration.

Airports and airlines that embrace the RFID approach will be able to reshape their customer service and operations – with many companies moving forward with a digital transformation agenda. While RFID will improve the tracking, the real value is in the data: specifically, how it is exploited and analyzed to improve operations and systems.

In order to deliver on these aspects, it's important to select the right partners for relevant domains. **GSW**



▶ ABOUT THE AUTHOR:

Michael Irons is an Airport IT Transformation SME at Wipro's Engineering Construction and Operations vertical, with over 21 years of experience. Irons has an achievement of successful growth in the Airport/Airline Common Use Market. He has substantial experience across a wide portfolio of airline and airport products and solutions including the implementation of innovative solutions to improve operations and service. In addition, Irons has led the aviation industry in delivering the worldwide change management program for barcoded boarding passes.

Go the Next Level with Electric-Powered Passenger Stairs

Take steps to avoid collisions and reduce turnaround time of the aircraft.

By Eavan McGrath

Aircraft stairs are a vital piece of equipment not only for passengers but also for maintenance crews. TBD, which specializes in ground support equipment (GSE) and access solutions for the aviation industry, has developed Electric-Powered Passenger Stairs designed to meet the latest Airport Handling Manual (AHM) regulations.

Jonathan Attfield, sales director at TBD, says the creation of the product came from a desire of airlines and operators to reduce carbon emissions and reduce reliance on fossil fuels while maximizing speed and efficiency airside.

"All powered stairs are supplied with top platform operation and fully compliant anti-collision features," Attfield says. "These provide the safest driving position for the operator and the aircraft, thus ensuring the fastest and safest aircraft turnarounds."

All stairs in this product line have a fully galvanized structure that offer a robust hard-wearing product to ensure low-through-life costs.

Photo courtesy of TBD

TBD has been creating ground handling equipment for decades. It specializes in creating equipment that can be used in harsh environments with high-grade corrosion-resistant materials that are hand built or robotically welded to very high standards and tolerances to oppose fatigue from all working conditions.

Although TBD's Electric-Powered Passenger Stairs have been manufactured for only one year, they are already receiving positive feedback from customers utilizing the equipment.

"One major airline is noting a significant reduction in turnaround time and 100-percent reduction in aircraft impact damage," Attfield points out. "These two aspects alone are extremely important to airlines as they represent huge potential cost savings for the operation."

The TBD Electric-Powered Passenger Stairs are currently being used by ground handlers and airlines in the United Kingdom, across Europe and North Africa.

Attfield says TBD can provide stairs to suit any aircraft fleet, including Airbus and Boeing fleets along with Embraer models and many military aircraft. The most popular choice for the electric-drive stairs is the TPS2435 model.

"This services the single aisle A320/B737 fleets of many carriers whose business models require fast turnarounds while still ensuring maximum safety," he says.

The electric-drive system can be installed on any passenger or crew stair in the TBD range.

TBD offers three different versions of parallelogram stairs.

Attfield notes that the offerings cover sill heights from 1.9 to 4.5 meters and a telescopic version offering coverage from 2.5 to 5.5 meters.

"TBD continually develops products to ensure compliance and optimize customers' complex and evolving operational needs," Attfield says.

There are multiple key features to the Electric-Powered Passenger Stairs that are available, regardless of the type of drive chosen by the customer.

"The main advantage to the electric stair is the ability to operate without the need for diesel or petrol," Attfield says.

"However, TBD's range of powered passenger stairs features many other advantages, such as: AHM-compliant anti-collision and top platform driving piston, including height control."

The stairs are fitted with AHM913-compliant, full-speed control technology, which automatically reduces the speed of the equipment on approach and stops before contact is made to aircraft.

There are also optional features available for the Electric-Powered Passenger Stairs. Attfield says solar charging is a key option to provide the operator with a complete self-sufficient product. Customers can also specify if they want corporate colors and branding.

Being in certain geographic locations, with certain climate conditions and traffic volumes, can influence the use of the Electric-Powered Passenger Stairs significantly.

"Ideally, the airport infrastructure will be capable of providing charge points on the stand. TBD's solar charging option can ensure operation without charge points. However, this isn't completely reliable at all times of the day and in all geographic regions," Attfield says.

Regular inspections and maintenance are critical to keeping the equipment up-to-date and secure.

"All TBD products are provided with strict guidance on all maintenance procedures needed throughout the life of the product," Attfield says. "TBD engineers also give direct training to maintenance providers on site." **GSW**

JETWAY BOARDING BRIDGES

JBT AeroTech

JBT designs, manufactures, installs and supports airport gate equipment. Jetway Boarding Bridges come in steel, glass and smooth sided models and are suitable for serving regional jets up to double-decked jumbo aircraft. Other JBT gate equipment includes JetPower ground power units, JetAire pre-conditioned air systems and the innovative iOPS equipment monitoring service. JBT has offered gate, GSE and military-related products and services for more than 60 years.

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INTERNATIONAL MOTORIZED BOARDING BRIDGE

Aviramp

The Aviramp International acts like a fixed finger bridge, but for remote stands. The fully mobile, motorized boarding bridge is capable of servicing a range of aircraft from an Airbus A380 lower deck to an A320, as well as Boeing's B787, B777 and B757. The International incorporates a 360-degree, switch-back design to provide passengers a gradual slope, which makes ascending and descending the boarding ramp easier for both able-bodied passengers as well as passengers with reduced mobility (PRM). With optional solar-power functionality, one person can steer the passenger ramp remotely while positioned on the ground and a number of safety overrides are in place to provide further assistance.

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MOBILE STAIRS

Wollard International

Wollard International Mobile Stairs can reach doorsills up to 228". The company offers the CMPS 170 Stair and CMPS 228, which offer a respective reach of 170.5" and 228". Both models are available with electric power. A quiet, efficient propulsion system offers a proactive option. Diesel and gas power units also are available. Highly maneuverable models are easy to position, as the operator can see doorsills during approach to the airplane to make final docking and alignment simple. The rugged wrap-around steel bumpers protect units from dings and dents inherent with ramp traffic, and the company says they hold up longer in the ramp environment compared to modified pick-ups. The units are designed to ARP 836 and share design elements and parts commonality with several other Wollard products to simplify fleet maintenance and reduce parts inventory.

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APRONAUT

ADELTE

The ADELTE Apronaut passenger boarding bridge (PBB) docking simulator has been revamped. The software-based PBB docking simulator allows comprehensive training in a zero-risk environment. The simulator allows staff to train repeatedly, performing docking and undocking procedures on any type of aircraft, quickly gaining skills and confidence without the need to risk real equipment or take PBBs out of service. With HD graphics, real-time control, a tailor-made screen and a real operator desk, Apronaut's realistic virtual apron environment offers a rich interactive multimedia experience in which trainees can make mistakes without consequences. Apronaut's patented software generates detailed reports on user training, allowing supervisors to monitor progress, compare performance statistics and assess whether trainees are ready to obtain their PBB operator certificate.

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SAV5800 SELF-PROPELLED AMBULIFT

Timsan

The Timsan SAV5800 is a self-propelled ambulift for transporting reduced mobility passengers to all type of aircraft with front platform service heights from 0 mm to 5,800 mm. All aircraft doors are safely interfaced with the newly designed collision-detection system of Timsan-GSE. It is designed with a trustworthy CAN-bus system and sturdy structure, which can carry up to eight wheelchaired passengers and four attendants.

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APS 60 SERIES TRUCK-MOUNTED AIR STAIRS

Accessair Systems Inc.

The APS 60 Series Truck-Mounted Air Stairs are available with a wide range of options including an overhead canopy along with two air-driven canopies located at both the top and the bottom of the stairs giving passengers complete protection from the elements. Normally mounted on a Ford XL F550 series and available in gas or diesel models, the most recent edition includes an automatic handicap wheelchair lift.

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AEROS 95-145 AIRCRAFT BOARDING STAIRS

Aeroservicios USA Inc.

Aeroservicios' Aeros 95-145 Aircraft Boarding Stairs feature an all-aluminum construction with 45-inch wide aluminum diamond plated steps, sliding hand rails with locks, a battery-powered LED lighting system and four heavy duty stabilizer jacks. The stairs have a working range of 95 to 145 inches, and sport a double hydraulic adjustable height system and can hold up to 5,000 lbs.

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RADIAL PASSENGER BOARDING BRIDGES

Ameribridge

Ameribridge provides new radial boarding bridges for the commuter aircraft operations market. Ameribridge acquired all rights to the Dewbridge product line in 2012, and is now taking the radial boarding bridge to an even higher level of service and reliability. Several design, engineering and component enhancements keep the new Ameribridge radial boarding bridge at the top of the aviation industry's list for safety, security and comfort in serving customers on commuter aircraft.

AviationPros.com/10976888

FRONTBULL AMBULIFT

Bulmor Industries GmbH

The compact FrontBull Ambulift is designed for regional and small airports with an environmentally friendly electric drive. This ground support vehicle has been specially developed for boarding passengers with reduced mobility.

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Q-400 PASSENGER STAIRS

Keith Consolidated Industries

The Q–400 Passenger Boarding Stairs are designed to accommodate passenger boarding at the L2 door of the aircraft. The Q–Stair is lightweight and easily maneuvered and deployed by one individual in less than 1 minute. The Q–Stair is designed with functionality and safety in mind, with its angled platform and folding gate. The Q–Stair is equipped with a roll away stantion and retractable ribbon reel, that when used in conjunction with the Q–step, forms an overall Q–400 system. This system allows the under wing area to be cordoned off, directing the passengers around this area.

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LOADING BRIDGE CANOPIES

Estex Manufacturing Co. Inc.

Estex Manufacturing Company has supplied Loading Bridge Canopies for years. The company manufactures all styles of canopies and its tough and dependable fabrics meet specifications FAR 25.853(b) and NFPA 415 & 417. Estex Manufacturing Company also supplies facia pads, adapter pads, corner pads and installation hardware kits.

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B737 CREW STAIRS

Flight GSE Ltd.

The Flight GSE B737 Crew Stair mirrors the company's Passenger Stair design for the same aircraft and features a hot dip galvanised steel chassis mated to an aluminium stair and platforms. LED lighting with solar charging capabilities are included.

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TLD ABS-580 PASSENGER STAIRWAY

AERO Specialties

AERO Specialties distributes the TLD ABS–580 Passenger Stairway, which services door heights of 86" to 228" and handles a full range of commercial and military narrow– and wide–body aircraft. The TLD Executive Stairway offers a wide stair width and generous platform width. The capacity rating allows for up to 74 people, expediting loading and unloading.

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APX20-DPL BOARDING LIFT

Lift-A-Loft Corporation

The APX20–DPL has a maximum platform height of 21'5" with a minimum platform height of 4'9", allowing a single unit to interface regional jets up to wide–body aircraft. The fully enclosed cabin provides comfort and two windows on each side provide natural light in the cabin. Units can be provided with optional air conditioning, an intercom system and fold down seats. The APX20–DPL is equipped with an auto close folding lift gate, which can be raised or lowered by one person. The lift gate measures 77" wide by 84" long and can accommodate two stretchers or four wheelchairs to be loaded in one lift cycle. The lift functions can be operated from either the driver's cab or by a pendent located in the van body.

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SIDE SHIFT CAB MODEL 269LC

R.J. Design LLC

This model of side shift cab includes side shift, flip up cable protection, leveling cab floor and the extend/retract passenger walk, that eliminates the need for portable ramps.

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DENGELIFT

DENGE Airport Equipment

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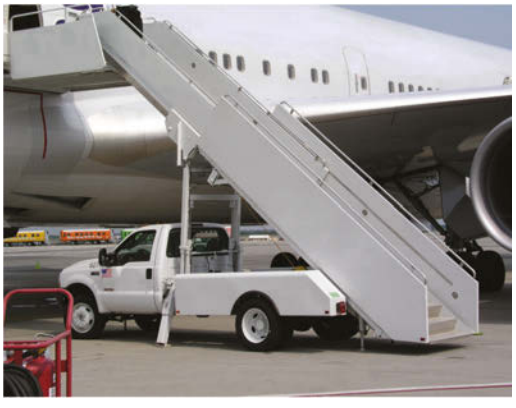
CHASSIS MOUNTED PASSENGER STAIRWAY

Stinar Corporation

Stinar offers three models of chassis mounted passenger stairway: SPS-3517 (88-212" service range), SPS-3518 and SPS-6018 (96-228" service range). The SPS-3517/18 has 48" wide steps and 72" wide platforms. The SPS-6018 has 60" wide steps with a 96" wide platform. Both have a variety of options. Also available, are two models of towable stairways to fit all passenger boarding needs.



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PAXLIFT

Baumann S.r.l.

The PaxLift Ambulift from Baumann lifts from ground level to 8 meters, and offers integrated suspension, multi-purpose use and four steering wheels for maximum maneuverability. The PaxLift has a 100KW diesel engine for a speed up to 30km/h for ground support equipment operators. It also provides a dedicated Airport Passenger Transport design and high lifting capacities (up to 2,000kg). Additional benefits include space for six wheelchair passengers with assistance, a compact design (3,100 mm height and 2,550 mm width), a small turning radius (less than 7 meters) and one-man operation.

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The heavy-duty stair frame can support 2,500 pounds (1,134 kg). The stairs can easily be towed into place and then adjusted to the best height, from 85" (2.2 m) to 152" (3.9 m) with a single-lever hydraulic system. An automatically latching "X" brace securely locks the stairs at the needed height, eliminating potential errors that can occur with manual locks. For added safety, the stairs feature a Morton non-slip walk surface and are illuminated with a battery-powered lighting system.

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

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GSE Suds? Cheers to That

Reclaimed water from ground support equipment is being purified and used for brewing beer in San Diego.

The fun part of being an editor of a trade magazine is devoting yourself to an industry's subject matter. And once you do, you start to see more of that industry all around you.

▲ **Editor - Josh Smith**
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920-563-1644

When it comes to ground support equipment, of course, tractors, belt loaders and the like are in plain sight every time you're sitting at the gate waiting to board your flight. It would be hard to miss. But beyond that, anytime I see a shot of an airport on TV or a photo accompanying a news item, I'm trying to get a look at what GSE is in the background. I do the same thing when watching a movie set at an airport, too. It has turned into an obsession.

One place I didn't expect to find GSE, though, was in a pint glass resting on the bar. But that's no longer the case in southern California.

San Diego International Airport (SAN) has partnered with Ballast Point Brewing Company and water purification company Water Works to turn conserved water into beer.

The new brew, SAN Test Pilot, comes from condensation from pre-conditioned air units attached to more than a dozen of the airport's jet bridges.

For the record, beer is just one of the ways this repurposed, purified water is used as part of the airport's conservation efforts. It has been used to wash equipment around the airport, too. Nevertheless, GSE on tap sounds very appealing to those of us in the magazine's Wisconsin-based office.

Like I mentioned, when you're focused on a specific industry, you start noticing it in unexpected places. But those surprises can be refreshing (apparently, in more ways than one).

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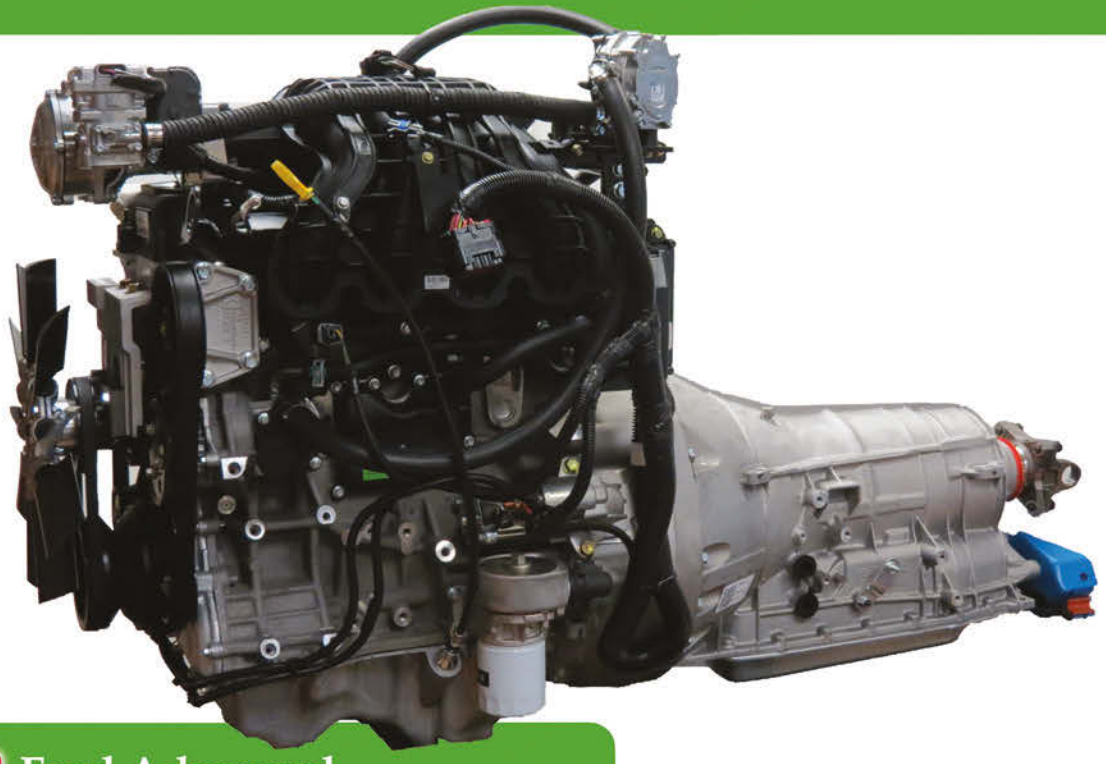

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