

GROUND SUPPORT WORLDWIDE

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On the ramp at
Charlotte Douglas
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Ground Support Worldwide (USP 015-386, ISSN 1934-2861 print, ISSN 2150-4016 online) is published ten times annually in February, March, April, May, June/July, August, September, October, November and December/January. Periodicals postage paid at Fort Atkinson, WI and additional mailing offices.

Change of address or subscription information: Toll Free – 877-382-9187, Local – 847-559-7598, circ.groundsupporttw@omeda.com

POSTMASTER: Please send address changes to Ground Support Worldwide, Cygnus Business Media, P.O. Box 3257, Northbrook, IL 60065-9765. Printed in the U.S.A.

Canada Post PM 40063731. Return undeliverable Canadian addresses to: Ground Support Worldwide, Station A, P.O. Box 54, Windsor, ON N9A 6J5.



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A Cautious Year Ahead



LISA HADDICAN

The fourth-quarter earning reports announced by airlines in North America showed results that were largely predictable — many carriers reported profits amid slashed capacities and an (albeit slowly) improving economy.

However, the year ahead has a more tempered outlook in terms of profits.

The International Air Transport Association recently released its industry estimate for carriers around the world. The association estimated profits of about \$15.1 billion in 2010 and a profit of \$9.1 billion in 2011.

While the estimates state a profit for most carriers, the association was not optimistic in its outlook, describing profit margins as “pathetic.” “With a 2.7% net margin in 2010 shrinking to 1.5% in 2011, we are nowhere near covering our cost of capital,” stated Giovanni Bisignani, IATA’s director general and CEO, in the association’s release. “The industry is fragile and balancing on a knife edge. Any shock could stunt the recovery, as we are seeing with the results of new or increased taxation on airlines and travelers in Europe.”

REGIONAL GROWTH/AREAS OF CHALLENGE

Some regions are expected to fare better than others. Asia-Pacific has continued to stand out as a region of growth, with IATA forecasting a profit of \$7.7 billion in 2010 and \$4.6 billion in 2011. However, it will remain at the

mercy of the economy and cargo volumes. “The region’s carriers are particularly exposed to fluctuations in cargo markets. While this accelerated improvements in 2010, the region’s carriers will also be disproportionately affected by the expected slowdown in cargo next year,” according to the association.

Carriers in North America have been forecasted to earn \$5.1 billion in 2010 and \$3.2 billion in 2011, with a 3.7 percent increase in demand and a capacity increase of 4.6 percent.

The outlook for European carriers is much bleaker with a projected profit of \$400 million in 2010 and \$100 million in 2011.

So what does that mean for the industry? As we all know, it comes down to the economy. It likely won’t be the blockbuster year that we would all like to see. However, if passenger and cargo volumes continue to improve under the leaner operating models of the airlines (and fuel prices remain manageable), the profits will continue to trend in the black. Here’s to hoping for the best ... with a healthy dose of caution.

As always, thank you for reading!

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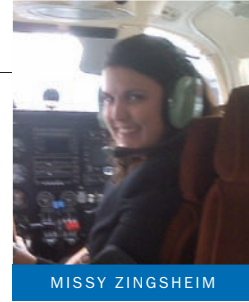
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MISSY ZINGSHEIM

At the end of this month we will all be seeing each other again at Cygnus Aviation Expo in Las Vegas. One event that we have changed this year is our Ground Support Leaders of the Year awards reception. Instead of a cocktail reception, we have changed it to a luncheon. We are excited about this change and hope that we can really make this an even more enjoyable event.

The Ground Support Leaders of the Year awards luncheon will be held on Thursday, Feb. 24 from noon to 1:30 p.m. This year we recognize excellence within the industry with five awards:

One event that we have changed this year is our Ground Support Leaders of the Year awards reception. Instead of a cocktail reception, we have changed it to a luncheon.

- **Team Leader:** similar to the original Leader of the Year Award, this title is for an individual who has taken a leadership role with personnel.
- **Safety Leader:** for a person or company who has introduced a new method, procedure or product to improve industry safety records.
- **Engineer/Innovator Leader:** For a company or a person who has introduced a revolutionary product.
- **Green Leader:** for a person or a company who has introduced environmentally friendly equipment or processes.
- **Lifetime Achievement:** for a person who has demonstrated commitment to the industry through a lifetime of dedicated service.



Above: Last year's Ground Support Leaders of the Year awards reception. Below from left to right: publisher Missy Zingsheim, 2010 Lifetime Achievement Award recipient Louis Lombardi, Brian Piety of J&B Aviation Services and editor Lisa Haddican.



The recipients will not be announced until the event, so please join us to congratulate them as they are presented with their awards. Attendees can register for the luncheon at the registration booth at the show.

I hope to see you there!

Missy Zingsheim

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April 16-20

45th International Aviation Snow Symposium

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 716.630.6136
<http://www.snowsposium.org/cfiles/home.php>

May 1-4

Regional Airline Association Annual Convention

Nashville, Tennessee
 972.943.4793
<http://www.raa.org/AnnualConvention/tabid/171/Default.aspx>

Business Buzz

■ NATA releases 2011 revision of refueling and quality control guide:

The National Air Transportation Association (NATA) announced the availability of the 2011 revision of its popular guidebook Refueling and Quality Control Procedures for Airport Service and Support Operations. The 2011 revision is a complete update that contains an in-depth review of topics relating to aviation fuel handling, with full-color photographs in a new easy-to-read format. Included in the 2011 revision are chapters addressing: safety, aviation fuels, fuel handling equipment, quality control and fuel testing procedures, equipment inspections and maintenance, operational procedures, fuel spill response, training and other resources.

■ The Air Transport Association of America releases quarterly Airline Cost Index:

The ATA, the industry trade organization for the leading U.S. airlines, released its quarterly Airline Cost Index, incorporating data through the third quarter of 2010. Costs faced by U.S. passenger airlines, measured by the "composite cost index," rose 5 percent to 209.8 in the third quarter

of 2010 compared to the same period of 2009, outpacing the 1.2 percent gain in the U.S. Consumer Price Index (CPI). The composite airline cost index remains approximately 110 percent higher than its level of 100 in 2000.

■ ATR moves into new remanufacturing facility:

Authorized Transmission Remanufacturing Inc., a national supplier of fleet transmissions throughout the U.S. and Canada, announced that they have moved into a new 100,000-square-foot remanufacturing plant located in Mundelein, IL. The plant has an enclosed cleaning/processing department, sound-proof dyno testing area, large remanufacturing area for cellular and rebuild work stations, employee- and customer-training room, and a large parts department and warehousing for its product line.

■ Swissport Cargo Services opens new warehouse in Nairobi:

Swissport has opened a new airside warehouse at Jomo Kenyatta International Airport, Nairobi. The facility sets new benchmarks in a number of areas, particularly in the handling and storage of perishable goods that make up 80 percent of Nairobi's airfreight. The development triples Swissport's capacity at Africa's



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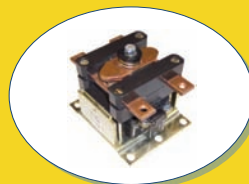
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ASIG celebrates 25 Years with LAXFUEL

ASIG announced that it is celebrating 25 years of service to the LAXFUEL airline consortium based at Los Angeles International Airport (LAX). LAXFUEL is the largest jet fuel consortium in the United States. Since the inception of LAXFUEL, ASIG has been the sole contractor to maintain and operate LAX's airport jet fuel facility. ASIG was also recently granted a contract extension at the annual meeting, where ASIG's vice president of fuel consortiums Larry McMahon accepted a special award acknowledging ASIG's 25 years of service to LAXFUEL.

largest air cargo hub. Swissport has been operating in Kenya since 1997 with great success, and currently serves 20 airline customers, handling nearly 4,000 flights a year with a workforce of some 400 personnel.

■ **Swissport Ukraine launches operations in Kharkov:** Swissport Ukraine is pleased to announce the launch of its operations in Kharkov, Ukraine's second largest city with a population of 1.5 million citizens. The growth of

Swissport Ukraine into the east of the country is a first step to expand business to other airports and services within the Ukraine in light of the EURO 2012 and economy picking up. With the awarding of EURO 2012 to Poland and Ukraine, Kharkov International Airport opened on Dec. 1, a modern, 20,000-square-meters terminal with a capacity of 2 million passengers per year and 1,600 passengers per hour. The modern termi-

WheelTug announces successful tests in Prague

The company announced that ground tests conducted at Prague Airport confirmed that the WheelTug onboard integrated electric drive system will be able to efficiently move commercial aircraft on the ground across a wide range of surface conditions. Isaiah Cox, WheelTug plc president and CEO, explained: "We collected considerable data about the forces required from an onboard electric drive system, and we had the added bonus of working in very adverse conditions, including during the middle of a snow storm which resulted in snow, ice, and wet runway conditions."

nal has 18 check-in desks, six gates and state-of-the-art infrastructure.

Partnerships/ Acquisitions/Contracts

■ **AERO Specialties announces acquisition:** The manufacturer and distributor of aircraft ground support equipment announced the outright purchase of Australia-based JetGo International. JetGo designed a line of diesel-electric hybrid ground power units. AERO Specialties had previously been the exclusive distributor for JetGo International.

■ **Bliss-Fox selects Allison Transmission for new tractor:** Allison Transmission announced that Australian GSE manufacturer Bliss-Fox has selected Allison's 4500 automatic transmission for its new generation Bliss-Fox F1-500, the pushback tractor that was

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designed and engineered to handle the higher loads demanded by the arrival of the Airbus A380 at airports around the globe.

■ **BEUMER to supply baggage transport system at Gdansk Airport:** The company announced that Hydrobudowa Polska S.A. has decided to use the BEUMER autover® baggage transport system. BEUMER, a manufacturer of intralogistics, will supply and install a rail system with a length of 506 meters, 44 vehicles — the so-called BEUMER autocar® — as well as 20 induction belt conveyors and 12 destinations. The visual display system and the host system (SAC - sort allocation computer) are also part of the scope of supply. A BEUMER service team will supervise and maintain the complete baggage handling system on site over a period of more than five years. The system is scheduled for operation by February 2012.

■ **Menzies awarded handling contract in Cancun:** Effective Jan. 16, 2011, AirTran awarded Menzies their ramp handling business in Cancun. Airtran operates up to five flights per day in the peak season, and in a full year operates about 1,250 turns to CUN. This award is on the back of additional business secured from a number of other carriers in recent months, including Volaris and Virgin America, as well as additional flying from a number of existing customers, including United, American and Alaska Airlines.

■ **Lufthansa signs new ground handling contract with Fraport:** Fraport AG and Deutsche Lufthansa AG signed a new agreement covering ground handling for all of the airline's aircraft at its Frankfurt Airport (FRA) global hub over the next eight years. Effective Jan. 1, 2011, the agreement runs until Dec. 31, 2018. Both partners agreed not to disclose any details of the contract volume. Services covered under the contract include the handling of passengers and their baggage, as well as cargo.

■ **ASIG renews deicing agreements with Frontier:** ASIG announced that Frontier Airlines has renewed its aircraft deicing agreements with ASIG to provide services at Ronald Reagan Washington National (DCA), Indianapolis International (IND), Chicago Midway (MDW) and General Mitchell International (MKE) airports. Frontier has also awarded ASIG two new locations, Bradley International (BDL) and Salt Lake City International (SLC) airports.

■ **Thai Airways extends handling contract with Menzies:** The carrier extended the cargo handling contract at BLR & HYD for an additional three years. The



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existing contract agreement has been extended up to summer 2014.

■ **ASIG secures new contract with US Airways at Heathrow:** ASIG announced that it has secured a new agreement with US Airways to provide cabin cleaning services at London Heathrow Airport. In a subcontracted agreement with United Airlines, ASIG will also provide air-

craft deicing services to US Airways. ASIG currently serves US Airways at 24 international airports in North America and Europe, providing aircraft refueling and a variety of other ground support services.

■ **INET to provide GSE for Sacramento airport:** INET has been selected to provide the 400Hz ground power and pre-conditioned air

equipment for the central terminal B expansion project at Sacramento International Airport. This two-phase project, referred to as "the big build," will initially require 14 solid-state point-of-use units for the first phase, and an additional five units in the second phase. The new equipment will be installed on 19 new passenger boarding bridges being purchased for the gate operations.

■ **ATS announces contract award from British Airways in Toronto:**

Airport Terminal Services (ATS) announced that British Airways has appointed ATS as their ramp handling agent at Toronto L.B. Pearson International Airport's Terminal 3. The multi-year contract transitioned BA's full ramp and cabin cleaning services to ATS on Jan. 6, 2011. BA operates two daily widebody flights connecting Toronto to its hub at London Heathrow.

■ **INET to supply GSE to John**

Wayne Airport: At the recent Orange County Board of Supervisors meeting, approval was given for a contract with INET Airport Systems, of Fullerton, to supply and install new 400Hz and pre-conditioned equipment on 20 passenger boarding bridges at JWA. This new equipment, including potable water cabinets, will be installed on the six new Terminal C gates, plus replacement of the equipment at the 14 existing gates. The new Terminal C project is scheduled to be completed in late 2011.

■ **Menzies announces contract with Alaska Airlines in Seattle:**

The handler currently provides ramp handling services to Alaska Airlines for about 45,000 turns per annum at Seattle. On March 24, Menzies will take over responsibility for delivery on online and interline baggage transfers, and, effective April 8, it will take over all bag room responsibilities. In total, Menzies will add 118 new staff in Seattle to cover the additional services.

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People in the News

Adriano Di Placido

ServiceTec has announced that Adriano Di Placido has accepted a new role with ServiceTec as manager - business development the Americas, reporting to Lynne Harrison. In addition to enabling the company to have a focus on developing the business in Canada, Adriano will also be responsible for certain U.S. airports. He will also be the company's main liaison with SITA.

Robert L. Lekites

UPS announced that Robert L. "Bob" Lekites, president of UPS Airlines, is retiring after 36 years of service at the global logistics company. Mitch Nichols, vice president of UPS Air Group operations, has been named to replace Lekites. As president of UPS Airlines, Lekites had responsibility for all aspects of the company's airline operations as well as Worldport, UPS's cutting-edge package processing facility and all-points international air hub in Louisville.

Ricardo van Duijkeren

Damco announced the nomination of its new head of airfreight for Europe. Ricardo van Duijkeren took on this role Feb. 1, 2011, and brings more than 30 years of airfreight experience to the European region. In his new position, Ricardo will be responsible for expanding Damco's growing airfreight business in the European region. ■

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US Airways Express Turns to ELECTRIC

The carrier forges ahead with electric GSE initiatives in Charlotte.

By Lisa Haddican



A plane is serviced at CLT.

On an unusually frigid day on the ramp at Charlotte-Douglas International Airport, US Airways Express operations are running smoothly a few days after a weather event. The gates are bustling with activity as crews work to turn each plane, handling an average of 300 flights daily.

Across the way from concourse E, a GSE area features two rows of battery chargers where electric vehicles receive a boost when not in use. However, at this particular time in the afternoon, the chargers stand alone.

Fred Maslow, analyst-station resource allocation at US Airways Express operated by Piedmont Airlines, points to the deserted chargers as an example of the electric units' popularity among the operators. "The electric units are always the first tractors to leave the motor pool," he says.

For Piedmont, the units' popularity is one affirmation of its goal to introduce electric GSE into its fleet. With the recent acquisition of electric bag tractors and lavatory trucks, the carrier plans to move

forward with implementing additional units in the future.

A PLAN IN MOTION

Piedmont Airlines began considering electric equipment during the fuel spike in 2008. Looking to replace a portion of its aging fleet with cost-effective and environmentally friendly units, they decided upon electric.

To set the pieces in place for introducing electric equipment into the fleet, the carrier worked in cooperation with Mecklenburg County and the airport. In 2009 it received funding

from the county to offset some of the cost for purchasing 20 new electric bag tugs. The airport agreed to purchase and install the chargers.

After extensive testing at stations in Charlotte and Philadelphia, Piedmont implemented the 20 new electric bag tugs in CLT, which represents about 20 percent of its fleet of tugs at the location. With its own capital, the carrier then purchased six electric lavatory vehicles.



Above: an electric tug transports baggage at CLT. Left: the electric units feature a 625-amp lead-acid battery with a single-point watering system.



EQUIPMENT FEATURES

The units feature a 625-amp lead-acid battery with a single-point watering system. The carrier decided to independently purchase batteries

for the units, choosing a model that is larger than a standard 500-amp battery to provide an operational cushion.

“Unexpectedly, we needed that capacity anyways,”

says Brian Wemple, manager — customer service support at Piedmont. “There used to be a path where our drivers would cut through to reduce the drive time. This path

is now currently closed because of airport construction, so people have to drive longer distances now, and we never considered that. It’s a long way because of that, so the extra capacity has been a big success.”

Piedmont also opted for cabs on the units in which they have placed small heaters for driver comfort during winter operations. “From what we’ve heard, it’s been good,” Wemple says. “Our big concern was that we were going to be burning the battery of the tractor, but we haven’t been having



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An electric tug gets a charge at CLT.

any known issue. You just need to find an efficient heater.”

IMPLEMENTATION AND RESULTS

The implementation of the new units with workers on the ramp has been a success, according to Wemple, adding that much of the work involved training operators to charge the units when needed — which is usually overnight to allow



US Airways Express operates about 300 flights daily at CLT.

the vehicles to be fully functional throughout the next day.

“There’s been a little bit of a learning curve,” he says. “We had to be on top of our game, ensuring everyone had everything they need to make sure it worked. I think that we all executed it well, and we had great vendor support. The operation grabbed it and took off with it. It was a simple transition, really.”

A bigger difficulty, perhaps, came in the form of easing doubts about electric. “It was a challenge to introduce electric, because there was a lot of skepticism out there,” Wemple says. “I think we’ve fortunately overcome most of that skepticism with the success we’ve have with the units in Charlotte here.”

The units’ popularity among drivers has meant greater hours of

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Above and below: crews service US Airways Express flights at the E concourse.

use — which has been good news for the airline, as well as the county. “One of the requirements of the Mecklenburg County grant is basically bi-annually we report the number of hours we’ve used on the equipment,” Wemple says. “The funding amount they provide is somehow related back to the emissions you’re proposing to reduce. They want to ensure that we are performing to what we had originally proposed.

“We’re very happy to say that we’re actually exceeding what we had originally expected in terms of hours usage on the vehicles, which is good

all around, because the more we use the electric vehicles, the more it benefits us from a cost perspective. Obviously, the more we use the electric vehicles the better it is for the environment and the county as well,” he says.

“The operation grabbed it and took off with it. It was a simple transition, really.”

Brian Wemple, manager — customer service support, Piedmont Airlines

The overall run-time of the units has translated to a 28-percent reduction in fuel cost, according to Maslow.

The carrier has also benefitted from a reduction in maintenance needs. The units require less support than some other types of equipment, according to Maslow. “They require some maintenance; we do have to pull them in just like everything else, but there

are no oil changes,” he says. “It’s quite simple by comparison. The maintenance is way down.”

He continues, “There are also benefits that you don’t even recognize when you’re in our position of sourcing the equipment: They’re easier to get in and out of. They’re lower, so you’re not climbing up. They’re quiet, and you never have to worry about starting.”

ON THE HORIZON

The carrier does not plan to slow down with its electric ambitions. Maslow says they are now testing electric towbarless pushbacks in CLT





The carrier does not plan to slow down with its electric ambitions. Maslow says they are now testing electric towbarless pushbacks in CLT — with a goal of implementing them into service in 2011.

– with a goal of implementing them into service in 2011.

Piedmont Airlines is also looking outside CLT to its operation in Philadelphia, where the airport recently finished installing 23 chargers.

The airline has received funding from the state to replace equipment with electric, which it has planned to acquire in the coming months.

“In the state of Pennsylvania, we’ve been awarded the opportunity to use up about \$300,000-400,000 dollars of grant funding total,” Wemple says. “We’ll be looking to utilize available grant funding that’s been awarded to the company to help offset the purchase of somewhere between 30 to 40 pieces of electric ground equipment this year — close

to a 50/50 mix of baggage tractors and belt loaders.”

All equipment needs to be in place by the end of June, so we expect that equipment should be in place mid-year,” Wemple says.

He adds, “It also gives us room to look at future projects in 2012 and 2013.”

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Brisbane Airport Implements Ground Safety Initiatives

By Lisa Haddican

Through its efforts, the airport reduced FOD by 99 percent.



On the ramp at Brisbane Airport

Ground safety at an airport is an issue that many times requires cooperation of various stakeholders to understand the issue, set a standard and implement practices that result in a desirable outcome. At Brisbane Airport, through the participation of the airport, airlines and ground handlers, the Airside

Operations Center Team executed several initiatives that have led to safer operations on the ground.

FOD FOCUS

The Airside Operations Team at Brisbane Airport — comprising of 20 officers, four supervisors and five management team members — set

out to investigate origins of FOD, aiming to reduce FOD occurrences on the runway and taxiway systems.

As an airport with maintenance hangars located on the eastside directly across from terminals, the team found many items that appeared to originate from maintenance vehicles crossing the runway. “Some of the things we were finding were torches, screwdrivers, headsets,” says Aaron Pond, airside safety systems manager at Brisbane Airport. “They were falling off the back of engineering vehicles that were crossing throughout the night.”

Having found the origin, the team decided upon a solution: restricting all vehicles from crossing the runway other than tractors towing aircraft.

Of course, it was a standard that required the agreement of all parties involved, as the perimeter road route was about a 20-minute trip. Working in conjunction with the airport’s Airside Safety Committee, the operations team discussed the



From left to right: Peter Dunlop, airside operations manager at Brisbane Airport; Aaron Pond, airside safety systems manager at Brisbane Airport.

proposed solution. “We had to show them what we were finding, discuss the implications and get them to agree,” Pond says. “And when we went through that process, we found we got a 100-percent buy-in from everyone and was fully supported because they know the damage FOD can do to an aircraft. So that was a very important aspect of it — getting that buy-in. And we haven’t had any complaints.”

The team also stipulated that all vehicles at the airport must cover any loads in transit to reduce the risk of FOD, and adjusted the Airside Drivers Handbook to indicate the new restrictions.

The airport also instituted more frequent runway inspections, performing 8 inspections every 24 hours — a



Kev Taylor presenting the 2010 AAGSC award to Peter Dunlop, airside operations manager at Brisbane Airport.

full serviceability inspection every six hours and a high-speed runway inspection every three hours. As well,

the team conducts random inspections of tugs to ensure they do not carry items that could fall onto the

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taxiways or runways, according to Peter Dunlop, airside operations manager at Brisbane Airport.

Through such efforts, the airport has reported a reduction in the number of FOD by 99 percent.

WILDLIFE MANAGEMENT

Along with initiatives to reduce incidences of FOD, the team began investigating ways to reduce and manage wildlife around the airport. They looked into several different initiatives to accomplish the task.

"We promoted one of our officers to the position of wildlife control coordinator, and his focus is to look at our Wildlife Hazard Management Plan," Dunlop says. "We have a monthly steering group committee, and we meet with the airlines every quarter. As a result of that, we have changed some of our strategies. We are doing a lot of passive management as well

And in one of its most recent developments, an Airside Driving Subcommittee has been formed to foster safer operator practices on the ramp.

as active management, both onsite and offsite."

Dunlop says the team targets high-risk wildlife that surrounds the airport in large numbers. "One of the birds frequent at the airport is "Ibis," he says. "We manage their three known nesting sites off-site. That helps to minimise the number of birds at Brisbane Airport"

He continues, "But we find the most useful harassment on the airport is increased man hours, sirens, bird frite, horns and lights."


Dunlop says the airport has continued to look into new strategies, including ways to more effectively managing its landscape to reduce wildlife numbers, all while communicating such strategies with stakeholders. "We actively report to the airlines with our initiatives and strategies," he says.

SAFETY DISCUSSIONS

Brisbane Airport began an Airside Safety Committee in 2005. The committee has grown over the years, beginning with approximately 15 members and now has more than 100 members, according to Dunlop. The Airside Safety Committee meets quarterly to discuss various safety issues. "We invite the airlines and ground handlers to present issues from any incidents that they have had and allow others to learn from those incidents," he says. "We encourage airlines and ground handlers to present those vari-

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ous safety initiatives. It's very much ownership by everybody."

And in one of its most recent developments, an Airside Driving Subcommittee has been formed to foster safer operator practices on the ramp. "It's a place where we felt we could improve the culture," Dunlop says.

The subcommittee is chaired by Pond and includes representatives from each of the airlines, ground handlers and catering companies, consisting of a 16-member team. "It's generally the trainers involved in this, so they can take the practices back to their organizations," Dunlop says.

The subcommittee has been looking at different methods of testing drivers and issuing licenses, looking at the best practices to be

included in the Airside Drivers Safety Handbook, according to Pond.

"We see this as a way of continual improvement and education in making sure and endeavoring to improve it further to have that ownership

"This was a true representation of strong collaboration between the airport operator, airlines, ground handlers, catering companies and everyone that works airside at Brisbane Airport."

Peter Dunlop, airside operations manager at Brisbane Airport

and transparency to our stakeholders," Pond says. "Then the working group will report to the Airside Safety Committee what we've established and what we've improved on."

PROGRAM ACCOLADES

The program, which implemented many of the initiatives within a six-month period, received the attention of the Australasian Aviation Ground

Safety Council, and was awarded the council's 2010 Ground Safety Award.

"This was a significant achievement," Dunlop says. "The Airside Operations Team have and continue to put in a tremendous effort towards the aviation and ground safety initiatives, and are very proactive in coming forward with new ideas. The award really showed that

everyone can contribute towards safety. This was a true representation of strong collaboration between the airport operator, airlines, ground handlers, catering companies and everyone that works airside at Brisbane Airport. The award belongs to all of those who contribute to make airside safety their business at Brisbane Airport." ■

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TCR Expands into North America

The company aims to find a niche in the U.S. market with its model of GSE fleet support.

While some companies in the ground handling business have established an intricate system of in-house support that allows their operations to run at near-peak maintenance efficiency, other companies may find it more difficult to cover the expense of constant maintenance and support of their GSE, and look to contract with outside service providers. Having established operations in Europe, TCR is looking to find a niche in the U.S. market with its model of GSE fleet support.

The TCR maintenance shop is located outside IAH.

BUSINESS MODEL

TCR offers three main lines of service for GSE fleets: equipment rental, maintenance and fleet management. An “operational leasing” option encompasses all these services, centering around the complete management of ground support equipment — GSE availability, contract flexibility, technical and ramp assistance, preventive maintenance, as well as fleet management.

Under operational leasing, TCR would contract with a fleet operator, purchase the fleet, and absorb the shop maintenance program. Once this is done, they would rent equipment back to the operator on a monthly

By Aaron Amundson

basis, with all maintenance provided as part of the lease.

TCR has found a customer base for operational leasing that primarily consists of ground handling companies operating at stations throughout Europe, according to Richard Janisse, vice president of finance & administration with TCR.

The benefit of this type of model is that TCR takes on all responsibilities regarding equipment maintenance, according to Janisse. “Ground handling companies have two core competencies. They service aircraft on behalf of their customers, but also they have to maintain their ground equipment,” he says. “To the degree that we have just the one core competency of maintaining ground equipment, we can provide a good service to them, and let them focus on their core competency, which is maintaining and servicing the aircraft,” he says.

Another benefit under the operational lease, according to Janisse, is the flexibility to add or remove units from the fleet when needed. “If a ground handling company lost a contract with an airline, we could adjust their operational lease and take that ground equipment they were using and distribute that to other locations that needed it, or we could sell it,” he says. “On the other side, if they get a new contract and they need more equipment, we can certainly provide that and roll that into the fleet conversion contract and rent that to them.”

The operational lease also allows for fleet changes and modern-





As an operation, TCR not only leases and maintains, but also refurbishes and sells equipment.

EXPANSION

In Europe TCR operates at 50 airports in seven different countries. They have now focused on North America as a region of growth. "The U.S. market is pretty big, actually much bigger than the European market, and like other European-based companies that are expansion-minded, the U.S. is a fertile area to expand into," he says.

The transition has been largely organic, as TCR moves its services to fill the needs of foreign-owned handling companies. "The expansion to the U.S. is basically looking to the European clients that have operations over in the U.S., and expanding with them in the same fashion that they have over in Europe," he says.

Inside the TCR maintenance shop located outside IAH.

ization within the rental structure. Janisse says that the company is willing to design a fleet based on the budget and requirements of customers. "If they want new equipment,

we can outfit them with new equipment." he says, "If the customer would rather purchase a used piece of equipment, we'll find a very good piece of used equipment for them."



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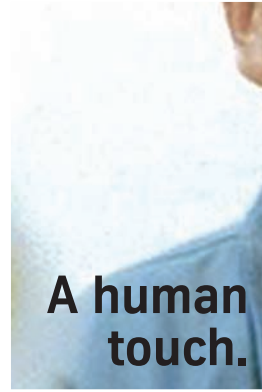
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In addition, the company sees a niche in the U.S. market for the services they provide. As he puts it, "There are companies that lease ground equipment to ground handlers, and companies that maintain it, but there is nobody out there in a big way that is providing both, and that's what TCR does."

U.S. OPERATIONS

Currently TCR's U.S. operations are based in Houston as part of their collaboration with Menzies Aviation. The partnership began in late 2009. Describing the current arrangement, Janisse says, "Menzies is actually located in a warehouse that is immediately off the airport. What we did is sublet their shop area and some office space from them." He goes on explain that, following the European model, they have assumed control of all maintenance services, parts storage and inventory.

At present, the Houston operation is TCR's sole U.S. operation. "We've got five mechanics now, an office manager, and a couple of management personnel, including our VP of operations, who spend most of their time down there," he says. This operation supports a fleet of 74 motorized GSE and 338 non-motorized GSE — 412 pieces in total.

According to Janisse, the company is looking at other locations of growth. "We're looking to expand at Houston airport, and were looking at other airports across the United States," he says.

The ideal market for a service like this is variable. "Our target market is an airport operation that has 200-plus pieces of equipment," he says. "If you get into smaller operations, you've got to spread the monthly rental fee that includes the overhead for the shop and the people over fewer pieces of equipment."

In its European operation, TCR has contracted with airlines directly to provide operational leasing, and the opportunity is being pursued in the U.S. as well. Janisse says the company sees opportunity in "outlying cities that the airlines fly to where they've got a couple hundred pieces of ground equipment and a shop."

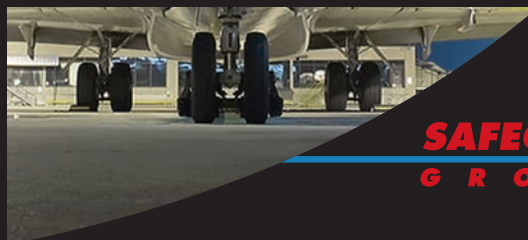
As for short-term goals, TCR is exploring other opportunities to grow their business in the U.S. According to Janisse, several areas that show promise are fleet conversions for compliance, expansion with current European customers, and contracted maintenance and repair with companies where the leasing model doesn't work. In addition, TCR plans to establish a U.S headquarters within the year, which will facilitate — as it hopes — the larger staff needed as contracts are finalized and the U.S. operation grows. ■

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MUM's the Word

The implementation of the mechanical unloading mechanism has brought Schiphol another step closer to completing its 70-million bag program.

By Aaron Amundson

In the world of baggage handling there is a constant drive to increase the speed, accuracy, and safety of baggage processing. Many systems designed to increase the operational efficiency of baggage processing are currently in development. One notable project is Amsterdam Airport Schiphol's 70MB

The premise of Schiphol's 70MB infrastructure investment plan has been to remain a viable transfer hub, and become the focus of increased air traffic, which requires an efficient and comprehensive baggage handling system.

(70 Million Bag) program, which marks another milestone with the implementation of a new mechanical unloading system.

COMMITMENT TO INFRASTRUCTURE

The premise of Schiphol's 70MB infrastructure investment plan has been to remain a viable transfer hub, and become the focus of increased air traffic, which requires an efficient and comprehensive baggage handling system. To achieve this, an investment of almost 800 million Euro has been allotted towards the development of a new and comprehensive baggage handling system. It has been designed to span nearly every aspect of

the baggage experience, from an automated check-in for passengers and state-of-the-art radio tagging of luggage to robotic systems, which remove the need for human lifting in the loading and unloading process.

It is Schiphol and its airline partners' hope that, with the implementation of these new systems, the airport will achieve the capability to process the 70 million bags they intend to handle on a yearly basis in the near future. The branch of this program, which has been at the forefront of development

recently, is the mechanical unloading module, or MUM. This development is being carried out by the airport with the assistance of KLM, who, as the primary carrier to Schiphol, will depend most heavily on the new system.

The development of the MUM system marks a new step in baggage handling technology. In this handling system, baggage containers are removed from the aircraft and put into a conveyor system known as the automatic loading transport, or ALT. This conveyor links all terminals to a



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centrally located baggage processing area, and the MUM system. Baggage enters the MUM system, which lifts and tips containers, emptying them on a lateral conveyor for sorting and processing. The system is equipped with cameras to record baggage positioning, allowing it to make automated adjustments as necessary.

It was designed to allow handlers to unload containers and trolleys

without physical effort and avoid many of the dangers inherent in the process. The new system was developed to serve the double function of improving both efficiency and safety.

In the short time that MUM has been in operation at Schiphol, it has demonstrated increased efficiency, according to Branco Dennenberg, an HR manager with KLM who has been

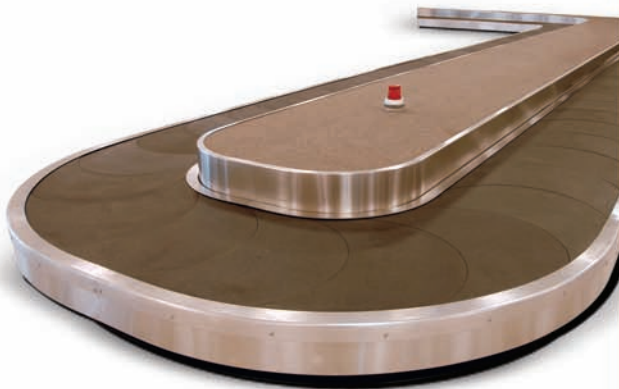


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heavily involved in the development process. "Our minimum goal is that we have a thousand bags an hour unloaded into the system," he says. "That's what we do manually. And this unloading machine is now up to 1100 bags an hour with mechanical unloading." These numbers will only increase as the infrastructure surrounding the MUM unit finishes development, according to Dennenberg.

He adds that another benefit of the machine is that it allows an increase in speed without the exhaustion and exertion to which human handlers are subject. "The machine doesn't take breaks; it can work 24 hours," he says.

The MUM unit's successful performance has prompted the airline to consider implementing four additional units.

EASE OF USE

As with any technological advancement in the GSE industry, the true test of MUM's value has been in its ease of implementation. The system was designed to enable use by ramp workers after a week of theoretical training and practice, carried out under the supervision of the development team. "We wanted to make the working of the module as easy as possible with the idea that all team members and employees can work with the module," he says.



To maximize team experience with the module, the system is currently operated by as many as four employees at once, but as the system becomes more widely utilized, this number will be reduced to one or two, according to Dennenberg. The goal of Schiphol and KLM is that

It is Schiphol and its airline partners' hope that, with the implementation of these new systems, the airport will achieve the capability to process the 70 million bags they intend to handle on a yearly basis in the near future.

the gradual implementation of these advanced systems will enable the projected baggage capacity needs (70 million baggage items) to be handled by a staff roughly the same size as is currently employed. MUM is not a system designed to replace workers on the ramp, but to more effectively utilize staff and expand capability, according to Dennenberg.

THE BACKBONE

MUM is the latest step in Schiphol's widescale improvement

and modernization program. The ALT conveyor system developed to carry luggage to the baggage areas is an extension of a program known as Backbone. The goal of Backbone is to create a completely integrated system of conveyors connecting the entire airport with central baggage handling. This allows detailed central control of all baggage movement, allowing fast-tracking of priority bags

while storing cold baggage until it is needed, leaving the system open for more urgent use.

This integrated conveyor system has become necessary as Schiphol is quickly running out of space for expansion. The cost of land purchase and development at any airport is extremely high, but even more so in Amsterdam, whose sub-sea-level elevation requires an expensive

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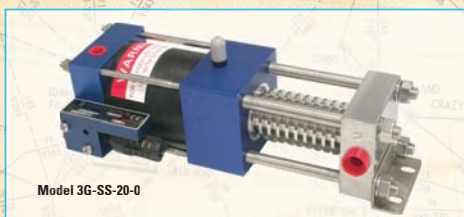
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construction process. Instead of worrying about limits to expansion, they focus on maximizing their efficient usage of existing space. By setting aside areas to hold non-essential luggage, the available channels of movement can be utilized on a priority-based system which increases turnover speed and reduces disruption. If one line fails, a backup line springs into use, and the highest priority bags are given precedence on this line until the original conveyor is back in operation. This centrally controlled and comprehensive approach to

The MUM unit's successful performance has prompted the airline to consider implementing four additional units.

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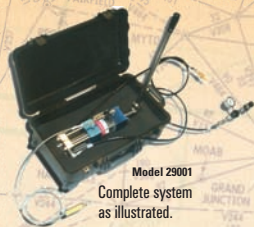
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baggage management allows for optimal efficiency from the moment a bag enters the system to its delivery at the plane, according to Dennenberg.

The energy and resources Schiphol has put into pre-emptive baggage solutions have been a key factor in its development as a major hub for European air travel. With the partnership of KLM, Schiphol's largest airline, they continually forge ahead with projects designed to increase overall efficiency. As stated by the airport in a release, Schiphol currently processes almost 50 million baggage items every year, 43 percent of which is transfer luggage. Instead of trusting their existing infrastructure to process this baggage, they have constantly striven to make the next step in handling technology. ■



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Memoirs of a Dinosaur Mechanic

By Tony Vasko

I have seen airports change from the times I worked at them or visited as a starry-eyed airplane lover.

One thing I possess in some abundance is time on my hands. This comes with retirement, along with a great number of medications to keep the body going. The Internet, of course, is a great help, not only in passing time, but also in keeping in touch, and in keeping up with developments in our industry. Google Earth is one of the things I use, and I have watched my old apartment house in New York City being demolished and have seen a high-rise take its place. I have also seen airports change from the times I worked at them, and visited as a starry-eyed airplane lover. Most have changed beyond all recognition or, in some cases, disappeared under urban sprawl.

MEMORIES OF NEW YORK

LaGuardia Field was the most accessible when I was a kid. A couple of nickels each way paid for subway and bus, and another got you onto the observation deck where you could see the planes being loaded and taxied. You could see out to the runway, too, and could watch the DC-3s. That terminal is long gone. The hangar where I taught DC-9 systems to mechanics is gone too, obliterated by the need for additional airline terminals. I wonder if the roadway and ramp were finally stabilized. The airport had been built on fill and reputedly garbage, too. The old hangars, built by the WPA back in the 1930s, were built on wider

piles, and did not sink. The ramp in front and the roadway at the back were not. They sank, and it was a considerable upslope run to get an aircraft into the hangar. On the street side, what were once street-level entrances were later accessed by a flight of stairs as the street fell away.

The old Marine Air Terminal is still there, but behind it I see no sign of the the rail tracks that led out of Flushing Bay up the seaplane ramp and into the Pan American hangars. Gone, too, are the wheeled cradles where the big Boeing boat perched. Gone is the ability to stand at a hedge and have airliners swoop low overhead as they landed. Boeing stratonliners, Constellations and DC-3s, DC-4s and DC-6s were predominate in the 40s. An occasional North Star would sing a different tune from its in-line Merlins, rather than the throaty roar of the round radials. Imagine standing at the approach end of runway four, accessible to anyone with legs able to walk there, separated from the runway only by a low hedge.

Security was not the same in the late 40s and 50s. We used to walk over and watch the planes land during our lunch break at the Academy of Aeronautics, where I earned my licenses. It is still there but renamed as Vaughn Technical College. The school's facade has changed from its 1939s look.

Over at Floyd Bennett Field, New York City's first municipal airport, only the NYC Police Department maintains

a live aviation presence with their helicopters. As a CAP cadet, I first flew from here in 1948, aboard no less than a Douglas A-26 bomber — heady stuff for a 14-year-old. I am pleased to note the old municipal terminal building, used later to house the National Guard operations, still stands. Across the field, in what we called “The Navy Side,” there is no trace of the lines of Hellcats, Avengers and PBV Catalinas I saw back in 1948.

At Newark Airport the old terminal from the 1930s still remains, but has been moved from its original location. Looking at

Most [airports] have changed beyond all recognition or, in some cases, disappeared under urban sprawl.

Google Earth, I was able to find the Eastern Terminal where I had my office. My son recently flew out of that terminal, and told me that the moving sidewalk going out to the gates is still broken. So some things remain the same, even under new management.

CHANGES AT KENNEDY

Kennedy Airport, of course, is where I started work as a lowly stockchaser on midnight shift at

Lockheed Air Service. It was Idlewild International then, and Hangar 7 had just recently opened. Its unfinished look, still evident after 57 years, came from the sight of the uncovered and bare steel beams that formed the roof trusses used to suspend the canteliver roof. No longer used for aircraft maintenance, it is instead an air freight depot. I zoomed in close on Google Earth. The auto shop building

is gone. The "Iron Bone Yard" that was located behind it is gone, too.

A world-class collection of aircraft towbars once resided there. Lockheed had bought out Willis Rose some years before, and inherited its collection. When a corporate B-25 visited one day and had to be moved, one of the old timers took me back there and pointed out the proper towbar. Of course, no one ever thought

of painting the identification on the bars. I asked what some of the others were for. I was impressed with his knowledge as he pointed out the bar for towing B-17 flying Fortresses, another for the B-24 Liberator, and yet another for the Lockheed Lodestar. In passing, he also nodded to the one for the Curtiss C-46 and the DC-3, both of which I knew, as I had used them. The Lord alone knows what else was back there; the collection had come from Roosevelt Field, which itself dates back to 1921. Some towbars were long bridge-truss structures, made to reach back under the rear of tail dragging aircraft to hook onto tail-wheels. They had to be long to clear the aircraft horizontal stabilizer and elevators. Some were pairs of long pipes with shackles that spread out to attach to the main landing gear. All, however, were rusty now, unloved and vainly waiting for the return of their probably extinct aircraft.

I scanned around and vainly looked for any sign of the bowsers, engine preoilers, prop dollies, and other equipment that also populated the boneyard behind the auto shop.

Gone were the forest of ladders, engine docks, stands and the like that sat there awaiting repair. Missing was the towerlike tall pipe sticking straight up from it, which was used to push air through the DC-4 cabin heater for ground testing. All gone, even the oil stains on the ramp from the dripping engines of the Connies and Douglas products that once populated the ramp. Forty years of rain and snow had obliterated them.

There were still aircraft there dotting the ramp, but now all with swept wings. They had their main-deck cargo doors gaping and pallets and containers were nearby waiting for loading. Gone, too, was the Farmall tractor that was so terrifying to drive. It had no seat; one stood on a rear platform like a Roman chariot driver and tried to gently let in the

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clutch. Too fast a release and a little rev of the engine caused the front of the tractor to rise off the ground like a rearing horse. The Oliver tractor was gone, too, and so was the Silent Hoist jet tug that resembled an aircraft carrier, complete with its island cab on the starboard side. It, too, had its little quirks like the steering-wheel shaft splines, which would decouple when a sharp turn needed to be made. It happened to one of the auto shop people as he drove some miles from the terminal to the hangar via the service road. He was stopped by the chain-link fence, however.

No use in looking for the Eastern Hangar 9; it has been torn down, as has the Eastern terminal. Both were, in my humble opinion, bad buildings. The hangars suffered from huge settling cracks. The base had apparently not been properly prepared when it was built. In this case, the building sagged and cracked as it settled. This was the opposite of the LaGuardia hangar, where the building did not settle, but the land, and so the ramp and street, did. The terminal was built in the days before security was thought of, and the passenger holding areas at the gates were far too small for the widebody airliners that came along. Because the gates were at ramp level, it was difficult to add loading bridges. In actual fact, you had to climb stairs to get up to the loading bridges themselves. The baggage sorting areas were cramped, too.

Outside, the ramp itself had been designed for maximize drainage. This meant that some parts of it were quite sloped, making it difficult to fuel some aircraft to maximum without suffering overflow from the airplane vents. The employee cafeteria, however, was quite good. For that, I can forgive much.

Also among the landmarks missing from the JFK area appears to be the Airport Diner, which was

over on Rockaway Boulevard. I ate a lot of midnight-shift meals there when working at Lockheed. I also find no listing for the Owl Tavern, except historically. It would appear that some of the criminals taking part in a huge gold robbery from an airline frequented the tavern. This, according to online sources, prompted FBI agents to stop by often, probably not to eat a slice

or two of pizza. I am sure it did not encourage business. ■

ABOUT THE AUTHOR: *Tony Vasko graduated from the Academy of Aeronautics in 1954. He went on to hold several positions in the industry, including mechanic, maintenance instructor, general technical supervisor, maintenance manager and director of maintenance. He began writing for the magazine in 1996.*



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Aircraft Fluid Handling: Closed-containment Systems

By Bob Benson, CEO, US MFG & Design Inc.

A look at one type of technology introduced on the market to help protect fluid.

Waste still exists in the airline industry. One area that has not advanced as it could have for the past decade is the life-blood transfusion of the aircraft body — aircraft fluid handling. With environmental issues coming to the forefront, and the costs associated with fluid handling on the rise — not to mention concerns about aircraft fluid protection — it is time to recog-

nize the importance of new technology in the fluid handling aspects of the airline industry. Airlines are recognizing this and are very closely looking at closed-containment systems to reduce the use of the quart can.

OIL TRANSFUSIONS-OPENING THE CAN

In most of the airline industry, the quart can is still being used

to dispense and store oil. There is no chance of contamination from particulate or condensation because it is sealed. It is practical, because it can be stored for long periods of time and there is a given amount of oil in each can. This makes it easier for the mechanic to enter the amount of oil added into the log books, and to inventory the current supply.

DRAWBACKS

First, there is the expense of buying the oil can. Then you have to store it until it is used. A maintenance person has to collect the new cans and take them to the aircraft. The oil cans have to be opened and the contents poured into the aircraft component, as much as they can get out of the can.

The opening of the can is where problems can begin. From simply the improper opening of cans, your entire system can be contaminated and this can lead to component failure. Then there is the potential for spills and the cost associated with waste handling. In the late 1980s and early 1990s, the EPA clamped down on spills and waste handling. This process was the basis of the creation of the current regulations. This awareness created the need for the self-sustaining environmental impact assessments that brought about due diligence in concern for our future and the health of the airline industry. Despite seeming like a huge nuisance, it is actually

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an important problem because of the environmental impact and the potential fines which can bring tremendous expense to the airline industry and the military.

POTENTIAL COSTS OF THE OPEN CAN

Once the can is opened, there could be the following expenses:

- the possible contamination of the aircraft components due to metal fragmentation from opening the can with either a proper can opener or a screw driver
- the potential of the maintenance person becoming injured opening the can
- the contamination of aircraft components due to exposing the oil to the atmosphere
- the contamination of the interior of the component exposed to atmospheric conditions due to the open fill cap on the aircraft

- the hazard of spilled oil on the cowling interior, which could cause smoke or fire on the aircraft or the flight line
- the expense of the maintenance person collecting the used cans and transporting them to the recycling center
- the recycling personnel having to prepare the cans for draining
- the expense of the cart to drain the used oil
- the hazmat expense

Keep in mind that the quart cannot go away. The can is a measured amount and will keep the oil contaminant free for long periods of time, along with being easy to transport and easy to store. What I would like to address is the mass dispensing of oil that requires multiple aircraft servicing in one session with a large volume of oil — an application that would require a large number of oil cans. There are other cost-effective and environmen-

tally sound options available today, such as using a closed-containment system to transfer fluids from a bulk fluid container to an aircraft.

CLOSED-CONTAINMENT TECHNOLOGY

One type of technology introduced to the market uses a polyethylene-insulated container. It was designed as an answer to one airline's problem with metal containers. Water was forming on the inside of these containers, due to condensing characteristics of the metal wall when they were exposed to changing temperatures. It was to the point where it was saturating the hygroscopic synthetic oil.

Polyethylene, in contrast, can withstand temperature changes and is impervious to most chemicals. It is also impact resistant, which is an important characteristic. Making the walls thick would allow a container to be able to take more punishment and enhance the insulating ability. When it is used in

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the natural color with the proper wall thickness, it proves to be the answer to the condensation problems.

Beyond all that, it is recyclable. The soft pliable walls of the container will resist impact as low as 60 degrees below zero fahrenheit. The natural color makes the oil levels visible to the operator. Some of the things you do not want to do with this material for this application is to fluorinate the inside, because it will contaminate the oil. Also you should not use anything harder than low-density polyethylene. Overall, the polyethylene container has found a place in the aviation industry.

CLOSED-LOOP SYSTEM

Now let's talk about the closed-loop system in combination with this new container. By removing the fill cap and adding a quick disconnect coupler, the possibility of external contaminants from entering has been eliminated. A quick disconnect coupler is installed

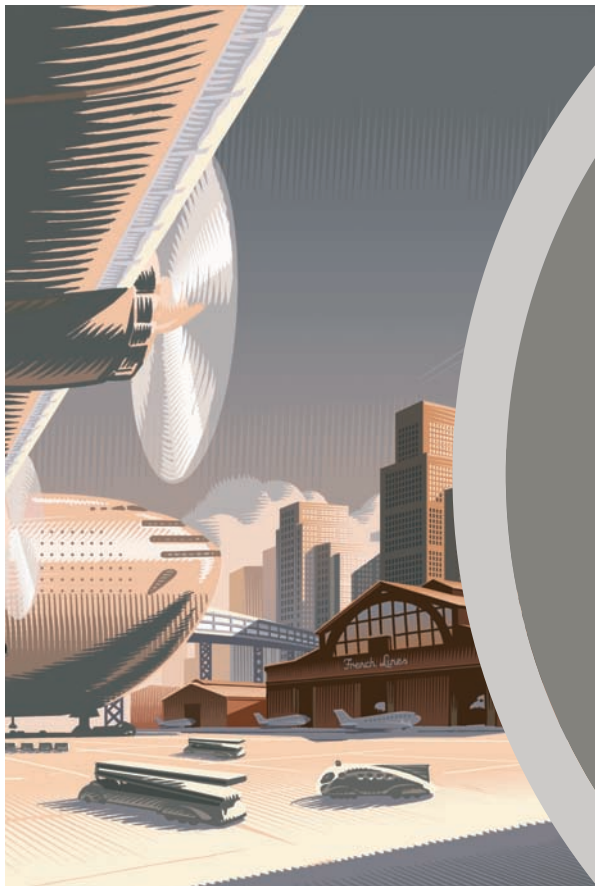
on the fill port on the container to avoid particulate and chemical intrusion. The quick coupler has a built-in valve that will keep the fill port closed and sealed. Each coupler is unique to the fluid being used and helps to prevent fluids from being mixed. The coupler has an internal valve that is opened only when the mating coupler is properly attached. It allows liquid to flow into the container and closes when not in use.

To allow venting, a desiccant drying filter has been added to the vent opening. Now there is an insulated container with clean dry air entering into it. As the container breathes during fill and dispensing, the filter will only allow dry air to enter the container. Drying filters come in two styles: desiccant crystal and coalescing. The desiccant filter is more effective. The air drying characteristics of filter media vs. air volume will keep the dew point inside of the container low enough to prevent condensation. This is designed to

prevent condensation of any kind from entering and affecting the effectiveness of the oil. The only way to contaminate the oil is to pump it in from a contaminated source.

Now there is a container that will protect the integrity of the fluid from the bulk container to the aircraft. This is called closed-containment technology. The fluids that are contained within this system are protected from the environment. Spilling of fluids is virtually eliminated since the valves in the quick disconnect coupler and the drying filter will not allow fluid to leak out, even if the container is held upside down. This system can both protect the fluid integrity and remain environmentally sound. ■

ABOUT THE AUTHOR: *Bob Benson's experience includes four years in the U.S. Air Force. He was also a senior engineer in advance engineering at Northwest Airlines. He is currently CEO of US MFG & Design Inc.*



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PASSENGER STAIRS & LIFTS/BOARDING BRIDGES/DOCKING EQUIPMENT

Docking Guidance Systems: Tools for Ramp Management

By Tammi Phippen, marketing communications manager,
Safegate Airport Systems Inc.

The new generation of docking guidance equipment provides increased intelligence for ground operations.

In the 1970s airports and airlines began using standard Visual Docking Guidance Systems (VDGS) to improve safety at the gate. A standard VDGS is designed for ramp positioning only and utilizes both human and mechanical elements to guide pilots nose-in and stop aircraft in precise positions to loading bridges and fuel pits. While the level of automation varies by manufacturer, standard docking guidance uses a passive technology and each docking is started manually with a ground agent selecting the proper aircraft type and initiating the docking.

The new generation of docking guidance equipment is a fully automated, active system that ICAO classifies as an Advanced Visual Docking Guidance System (A-VDGS). ICAO ANNEX 14, Volume 1, Paragraph 5.3.25 defines advanced visual docking guidance as those systems that provide pilots with active guidance information in at least three stages: acquisition of the aircraft by the system, the azimuth alignment of the aircraft and the stopping position information. In addition, an A-VDGS must provide accurate guidance to pilots in both seats.

The most commonly used A-VDGS uses three-dimensional laser scanning to identify an approaching aircraft and provide active azimuth and stop guidance via a multi-color LED display. Through its integration and interface capabili-

ties, A-VDGS can identify the position of the passenger boarding bridge to verify that the bridge is safely stowed prior to commencing a docking process. The system also helps ensure the gate area is clear and that incompatible aircraft are prevented from parking at adjacent gates.

In recent years, there is increasing interest in the ramp management

intelligence an A-VDGS can provide. While airports around the world have widely adopted the advanced system, originally for its safety benefits, the technology is now taking off in North America where airport and airline operators are recognizing the value of sharing information on the ramp. Through interfaces to airport and airline information systems, the A-VDGS

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A-VDGS can link all gates via a local area network, and integrate with all airport and airline information systems to provide real-time gate intelligence and shared flight data that can be used to improve performance on the ramp.

can provide data-sharing capabilities that can be used to further improve ramp operations — including improvements

in capacity, traffic flow, safety, irregular operations, fuel burn and environmental performance.

The ability to share data and a real-time overview of ramp activity helps airports and airlines create a safer and more efficient ramp operation that is predictable, repeatable and scalable for the future. While the features and capabilities of an A-VDGS will vary somewhat by manufacturer, the functionality and benefits described below are present in the most commonly used advanced systems.

AUTOMATION AND REAL-TIME GATE INFORMATION IMPROVE SAFETY

According to the Flight Safety Foundation, airport ground accidents cost airlines more than \$5 billion annually, and 82 percent of ramp accidents occur in the gate area with 48 percent of those occurring during arrival. An A-VDGS provides an automated and heads-up approach to docking that minimizes the opportunity for human error and has been proven to reduce the number of gate accidents significantly. After

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upgrading to A-VDGS, London's Gatwick Airport reported an 80-percent drop in ramp incidents.

Aircraft collisions with passenger boarding bridges are one of the most prevalent, but preventable, accidents on the ramp. An advanced docking system can interface with any brand or model boarding bridge to communicate the appropriate positioning to the bridge and then verify compatibility with the approaching aircraft before docking can commence. The interface not only eliminates costly collisions with boarding bridges, it saves time when the aircraft door is in perfect alignment with the bridge for deplaning.

Before allowing an aircraft into the gate, the A-VDGS checks aircraft at adjacent gates for compatibility. A failure to match adjacent gate information against a predefined acceptable profile for the expected aircraft will result in an immediate STOP message to pilots, avoiding potential collisions with other aircraft.



American Airlines parks using A-VDGS at Miami International Airport.

Real-time gate status allows operations staff to know at a glance which gates are occupied or available, making last-minute gate changes faster and making it possible to dock any aircraft, from any airline, at any gate. This com-

USING RAMP INTELLIGENCE TO INCREASE CAPACITY

Today's airport operations are expected to do more with less, meet current demands, plan for the future and always remain flexible. Adding to the challenges faced by airport and airline operators, global traffic is predicted to increase by about 5 percent each year until 2025, according to the ICAO.

New construction can improve gate capacity, but it requires substantial capital investment and can take years to complete. The cost of lost opportunity while new gates are under construction, and the risk of under-utilized facilities, should traffic ever decline again in the future, are also significant.

Technology improvements can benefit operators by helping to "future-proof" existing facilities by increasing throughput and flexibility via a more efficient and scalable operation — without substantial capital investment and without the wait.

A-VDGS technology has the capability to link all gates via a local area network and integrate with all airport and airline information systems, providing the fastest time from touch-down to gate and real-time gate intelligence and shared flight data that can be used to make improvements to many aspects of airfield operations. The A-VDGS can also be used to capture and report actual in-and-out times and that information is automatically sent to operations for tracking/analyzing gate utilization and accurate billing. Turn times can be tracked by city pairs, gate, crew or time of day.

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mon-use approach allows existing gates to be used more efficiently and create a safe and consistent ramp operation during regular or irregular conditions.

Some airline users have avoided a separate investment in a ramp information display system (RIDS) because integration allows the A-VDGS LED screens to double as RIDS, displaying flight information to ground crew whenever the systems are not actively docking aircraft.

RAMP INTELLIGENCE IMPACT ON PASSENGER SERVICE AND IROPS

Each year, weather-related delays, diversions and canceled flights cost airlines and airports many millions of dollars, and have a negative impact on passenger service.

New regulation by the Department of Transportation has raised the stakes with the threat of hefty fines to airlines for tarmac delays of more than three hours. The new rules have airlines bringing more planes to the ramp during severe weather and shifting the challenge from tarmac delays to ramp congestion and delays. The increased demand for gate availability and access to the terminal has airports getting more involved in ramp operations, especially during irregular operations.

A-VDGS ramp intelligence gives airports and airlines better control of the ramp during IROPS by communicating

real-time gate availability and ramp closures. To help manage delays, the system can start the clock by sending time alerts for aircraft landing or leaving the gate.

In addition to managing delays, an A-VDGS can help avoid them by keeping things moving. When the threat of lightning sends ground crew indoors, the automated system continues to identify available gates and allows pilots to self-park so that more aircraft are parked and more passengers are deplaned at the gate. Delays, diversions, cancellations and congestion are minimized and recovery is faster.

Even in favorable operating conditions, the A-VDGS allows the possibility to dock aircraft before ramp personnel can get in position, getting aircraft to the gate without delay, saving time and avoiding any inconvenience to passengers.

FUEL CONSUMPTION AND THE ENVIRONMENT

According to the Air Transportation Association, the single biggest advance in fuel conservation and emission reduction will come from updating decades-old technology and procedures. Operations that have updated manual docking procedures to an A-VDGS have seen significant reduction in fuel burn and emissions through the elimination of unmet flight delays.

The A-VDGS can also interface to ground power and/or preconditioned air units (ASE) to detect the on/off status and display the status to pilots and ground personnel. The system monitors and tracks usage of ASE by flight, providing critical data to aid in enforcement of ASE use and APU shut downs, as well as accurate emission reduction reporting.

THE FUTURE OF RAMP INTELLIGENCE

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***ABOUT THE AUTHOR:** Tammi Phippen joined Safegate Airport Systems Inc. in 2010 as marketing communications manager and has worked in the aviation industry for more than 20 years. Safegate Airport Systems Inc. is a subsidiary of the Safegate Group.*



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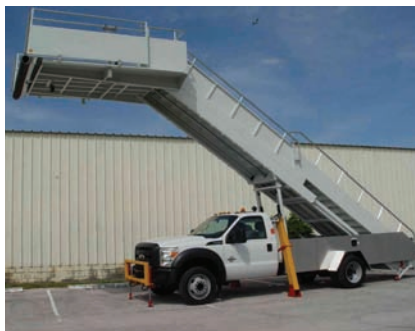
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Phoenix Metal Products Inc. has added a new passenger stair to complete their full line of stairs. Available now is the model PNX-PAS228 Truck Mounted Passenger Stair with a door sill height from 96 inches down to 228 inches up. The chassis is a Ford F450 SD with six stabilizers.



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Jetall GPU

NEA70150 Passenger Stairs. The unit has a maximum platform height of 150" and a minimum platform height of 70". The stair width is 49".



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SCHOPF Maschinenbau GmbH

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1995 Harlan, HTAB-40, Cummins diesel w/cab.
1997 Toyota, TD-25 diesel.
2005 Toyota, 02-2TG-23, LP-Gas engine w/cab.
2006 Tug, MA-50, Ford 6-cyl, LP-Gas w/cab.
1998 Tug, MA-30, Ford 6-cyl LP-Gas w/cab.

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1996 S&S, Model GT-35, Deutz diesel, 30K GVW, 24K DBP.
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Electric Innovator

Lynn Winters of Southwest Airlines reflects on his time in the industry, including his work with electric vehicle technology.



LYNN WINTERS
PHX Region GSE Foreman
Southwest Airlines

Q How did you get involved in the industry?

A I started in March 1978 as a contractor repairing ground equipment for one airline. As time went on, I began repairing and installing passenger loading bridges, bag belt systems and added GSE maintenance for more airlines to our services. At that time, we were working with about 20 different companies at Phoenix Sky Harbor International Airport. After many opportunities for growth, we branched out to Tucson and Las Vegas. In 1992, I had the opportunity to go to work for Southwest Airlines as a mechanic. Two years later, I joined the management team and became a foreman for the western region, covering about 17 cities. Since then, as Southwest has continued to increase in size, we have hired foremen in LAX, LAS, OAK and DEN.

Q Part of your experience has included working with electric GSE, especially fast-charging technology for vehicles. Can you tell us about that work?

A In 1995 I started working with propane for baggage tractors. We also purchased 22 electric bag tugs from the local power company. Finding ways to keep all the bag tugs' batteries charged was quite a challenge. The normal charging systems would take up to eight hours or more to fully charge the batteries. We had discussions with our local electric power company in an attempt to find a solution that would enable us to obtain extra power to run all the chargers for the tractors. I spoke to Ray Hobbs at APS, the electric company that provides power to the

airport, and he mentioned that we could have the opportunity to do some testing with fast-charging to determine if that would solve our problem. We joined up as a team and began to change the way we charged our batteries. We found that we were able to charge our batteries in as little as 45 minutes to 1.5 hours, depending on the type of battery. When we realized how successful this was, we then started installing these chargers in other cities. After many years of trying to get the battery infrastructure to improve, we have had to slow our charging process down. Most of our batteries can only take about 185-amp-hour charge rate. We could have done more, but I think we were ahead of our time. The battery technology wasn't as advanced as we needed it to be at that time. In the aviation world today, we are seeing a lot more companies using fast charging. I am very grateful that I have been able to be a part of that process. We have learned a lot from the past and are better at what we do.

As a second part of working with electric GSE, we have been involved in converting old fossil fuel belt loaders and pushback tractors to electric for several cities in California. In the past 10 years, more than 150 units have been converted by our Phoenix GSE shop.

Q In what other ways has electric vehicle technology improved over the years?

A Some of the controllers have become smaller in size and have much more power to move larger types of equipment. We can adjust the

personalities of the controllers to have them run different modes of operation for the piece of equipment that it is installed on. For example, we are able to slow down drive speed on a vehicle or increase the conveyor speed — just to name a few.

Q What are some of the challenges involved with operating them on the ramp today?

A A lot of our challenges have to do with fueling. Just like fueling gas-, diesel- or CNG-powered vehicles, we still need to provide downtime to get them fueled, whether we are working with fossil-fuel or electric vehicles. Sometimes that is an issue as operators of the vehicles tend to forget that electrics need to be plugged in for charging. Another challenge is that we need to train our personnel to put the charge cords back in their storage place. When they are mislaid on a piece of equipment, they tend to rip the cords off the chargers.

Q In your time in the industry thus far, what is one accomplishment that you are especially proud of?

A I am grateful for the opportunity that I had to be involved with fast charging and helping to bring it to the aviation world as we see it now. Also, it has been wonderful to be a part of a company that gives their employees the freedom to make innovative choices. Southwest Airlines is a great company to work for. The employees feel that they are part of a big family and recognize that just like in any successful family, everyone needs to do their part. ■

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