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8 Manhattan Regional Cleaves Terminal to Rebuild & Expand



14 SAFETY-First Philosophy Pays Off at Cincinnati Int'l



16 Miami Int'l Adds New Layers to Employee Screening Checkpoint



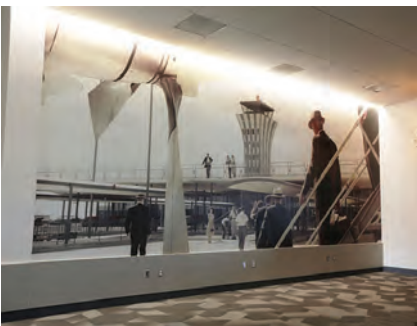
22 Customers & Airports Embrace Food-Ordering Apps



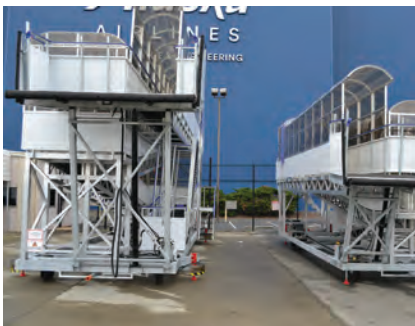
30 Calgary Int'l Loads New Terminal With Passenger Processing Technologies



26 Westchester Airport Installs "Mini" In-Line Baggage System



34 Austin-Bergstrom Int'l Relieves Growing Pains With Satellite Terminal for Non-Legacy Carriers



40 Airports Ease Remote Boarding Challenges With Mobile Ramps & Airside Buses



44 Oakland Int'l Dramatically Increases International Service & Plans for Even More



50 Cold In-Place Pavement Recycling Saves Money & Appeals to Community at St. Simons Island



54 Quality Trumps Bid for Operation & Maintenance Contract at Orlando Int'l



58 Northwest Florida Beaches Int'l Installs Drone Detection System

columns

Publisher's Column
Is Different a Good Thing or Bad?

7 **Industry Insider** **62**
Laddie Irion of HNTB Corp. discusses the importance of transportation systems that connect airports to the communities they serve.

advertiser index

ACC	21	Dialog Design	31	NLB	57
ACI-NA	24	Energy Seal Coatings	12	RS&H	53
ADB Safegate	33	Ennis-Flint	52	SEW	BC
AeroPort	10	G&S	10	Sherwin Industries	17
Aerosweep	5	Gee	20	Sightline	7
AGM	51	Graf & Lewent	29	Smiths Detection	63
Airport Improvement	43	IES	61	SWIFT	60
Asphalt Systems	36	Inter Airport	47	Synect Media	37
AVCON	59	ITW J&B	6	Tymetal	15
Blasters	39	JSM Associates	55	TYMCO	38
Burns Engineering	41	Kimley-Horn	18	Varco Pruden	46
Clear Channel	2	MAG USA	49	VRH	27
Cobus	42	M-B Companies	37	WSP	25
Daktronics	19	Mead & Hunt	11		
Delta Airport Consultants	9	Neubert	41		

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Publisher
Paul H. Bowers
paulbowers@airportimprovement.com
262.510.7832

Editorial Consultant
Rebecca Douglas
rebeccadouglas@airportimprovement.com
815.621.4525

Social Media Director
Kristin Shaw
kristinshaw@airportimprovement.com

Creative & Production Director
Becker 505, LLC - Chad Becker
chad@becker505.com

Circulation Director
Lisa Monday
lisamondy@airportimprovement.com

Webmaster
Matt Tews
matttews@airportimprovement.com

Contributing Writers
Jennifer Bradley, Ronnie Garrett, Nicole Nelson, Paul Nolan, Robert Nordstrom, Jodi Richards, Brian Salgado, Mike Schwanz, Thomas J. Smith, Victoria Soukup, Kristin Vanderhey Shaw

Advertising
Paul H. Bowers
paulbowers@airportimprovement.com
262.510.7832

Adrienne Gibson
adriennegibson@airportimprovement.com
262.844.4368

Vicki Jensen
vickijensen@airportimprovement.com
414-331-9768

Editorial Advisory Board
Dr. David A. Byers
Quadrex Aviation, LLC

Paul Cudmore
Eagle Integrated Solutions

William Fife
Peer Review Consultant

Glenn S. Januska
Casper/Natrona County Int'l Airport

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Is Different a Good Thing or Bad?

I knew my first crack at a Publisher's Column for this issue was doomed the moment our editorial director described it as "different." That was how my wife and I used to refer to the French chapeau our younger son bought on vacation one year. And we didn't mean it as a compliment. Why couldn't he pick a baseball hat or something else the other kids were wearing?

That's probably the connotation many of you have for the word "different," too. We often associate it with strange, unknown or other qualities that make us uncomfortable.

But as any good editor will tell you, it's important not to prejudice a word. We need to look at how it's being used. Some of the projects featured in this issue are good examples. Take, for instance, the Austin South Terminal story on Page 34. Opening a separate terminal for low-cost carriers on a far-away part of the airport property could be called different. Creating a public-private partnership to fund and operate the terminal is also different. In both cases, different is innovative and quite positive.

Enclosing an unfinished building in scaffolding and shrink-wrap to enable cement work during winter is certainly different; but it also made a lot of sense and took a lot of creativity. In this case, different saved the day and allowed Westchester County Airport to complete its new baggage handling facility on time. (See Page 26 for more details.)

There are plenty more examples in this issue—and life—where different is a *good* thing. Maybe labeling something as "different" isn't so bad after all. Hmmm, maybe there's still hope for my first column.

Cheers,

Paul



PAUL BOWERS, PUBLISHER

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Manhattan Regional Cleaves Terminal



Manhattan Regional Airport (MHK), located in the picturesque and growing Flint Hills region of Kansas, cut the ribbon on its new terminal early this year. More than triple the size of the old facility, the new 42,000-square-foot building emerged from the footprint of the existing terminal in an unusual manner. The airport essentially cut its existing terminal in half, and then demolished, rebuilt and expanded each half during separate phases—while maintaining operations the entire time.

The project, which lasted more than three years and cost about \$18 million, had been a long time coming, reflects Airport Director Jesse Romo. When preliminary planning for the new

terminal began in 2009, MHK had approximately 25,000 total enplanements. In 2015, the airport exceeded 66,000.

Traffic increased quickly after MHK received \$2 million from the state of Kansas and \$250,000 in local funds to meet the community's growing demands for expanded air service. In September 2009, American Eagle began providing regional jet service to Dallas/Fort Worth International (DFW) with minimum revenue guarantees through the Essential Air Service program. If flights fell below 70% load factors, MHK would use funds received from the state to offset the difference. But load factors remained above the threshold and even increased. Soon, the airline



FACTS&FIGURES

Project: New Terminal

Location: Manhattan (KS) Regional Airport

Approx. Cost: \$18 million

Funding: Airport Improvement Program (78%); city of Manhattan (22%)

Marketing Support: \$350,000 Small Community Air Service Development grant (U.S. Dept. of Transportation); \$150,000 in local funds

Initial Planning: 2009

Construction: Oct. 2013 – Dec. 2016

Project Strategy: Erect dividing wall; rebuild & expand terminal in both directions; remove wall & join 2 new halves

Engineering & Design: Mead & Hunt

General Contractor: The Weitz Co.

Associate Architects: Bruce McMillan Architects; Ben Moore Studio

Interior Design: BA Designs

Civil Engineering: Olsson Assoc.

Electrical Engineering: Custom Engineering

Mechanicals & Plumbing: Central Mechanical Construction

Electrical & Technology: Torgeson Electric

Passenger Boarding Bridges: JBT Aerotech

Anti-Passback Security System: Boon Edam

Video Surveillance System: Genetec; Bosch

Fire Protection: Bamford Fire Protection

Roofing: Diamond Roofing

Baggage Handling: G&S Mechanical, USA

Glazing: Manko

Terrazzo Flooring: Desco Coatings

Seating: National Office Furniture

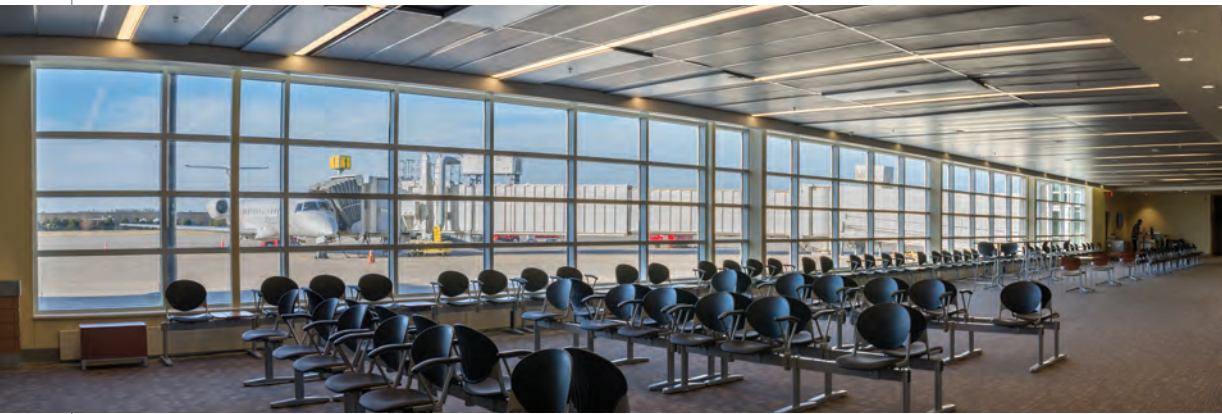
to Rebuild & Expand

BY ROBERT NORDSTROM

added two more DFW flights, and service to O'Hare International (ORD) as well. These days, American offers up to three flights per day to DFW and two to ORD from the growing Kansas airport.

In December 2010, MHK received a \$350,000 grant from the U.S. DOT Small Community Air Service Development program and \$150,000 in local funds to help promote the airport's new regional jet service.





Designers added nearly 30,000 square feet of space to accommodate growing passenger traffic.



JESSE ROMO

“We never had to tap into that \$2 million [from the state],” Romo proudly reports. “Two years later we returned those monies with interest—an amazing success story indicating the strength of the Manhattan market.”

In the meantime, however, the old terminal struggled to handle the increased traffic.

Based on the airport's 2011 Terminal Master Plan, the FAA agreed that a new terminal was needed. MHK began demolition and construction in October 2013, with Airport Improvement Program funds paying for 78% of the \$18 million project and the city funding the remaining 22%.

Remaining Operational

Mead & Hunt designed the new terminal, working with general contractor The Weitz Co. to develop a complex phasing program that kept the terminal up and running throughout the project. During construction, a temporary access road helped prevent vehicular conflicts between arriving travelers and contractor equipment.

Before demolition and construction could begin on the eastern half of the terminal, the airport had to relocate its ticketing counters, outbound baggage screening operations and airport administration offices. Three modular trailers equipped with ramps were placed just outside the western half of the building for the airline ticketing office and TSA baggage screening. Airport

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administration offices were relocated to a vacant building on the east side of the airfield. Rental car offices, a holdroom for departing passengers and the entryway for arriving passengers remained in the western half of the building.

With all tenants out of the eastern side of the terminal, the first order of business was constructing a temporary dividing wall in the center of building so demolition and construction could ensue in two separate phases.



D.J. VAN ETTEN

“That was one of our biggest challenges,” recalls Weitz Project Manager D.J. Van Etten. “We had to construct a standalone wall not attached to the existing terminal structure that could withstand the weather and not damage the new structures when it came time to take it down.”



NATHAN BOSDECK

Careful planning and coordination was needed to ensure that the halves, which were constructed as two distinct and separate structures, could be joined together incrementally throughout the multi-year project, notes Nathan Bosdeck, construction manager for Mead & Hunt. “The flexibility and communication of all stakeholders paired with the utilization of phased construction methods allowed the airport to remain in operation continuously with minimal disruption,” he reports.

With the exterior-grade temporary wall in place, contractors demolished the eastern half of the building and added about 22,000 square feet of new terminal space. New ticketing counters, restrooms, a passenger holdroom, mechanical/electrical rooms and areas for baggage screening and makeup promptly occupied the added space.

Crews also installed a new 3,500-square-foot TSA screening area during Phase One. “Enhancing our security operations was an essential part of the overall project,” says Romo. With two X-ray machines and a body scanner, MHK’s new checkpoint is capable of running two concurrent screening operations.

“We had been flying 44- and 50-seat regional jets out of the airport,” explains Romo. “However, ExpressJet Airlines, operating on behalf of American Airlines, began operating 65-seat CR-7s with flights to DFW in May 2017. Anything above 60 seats requires a complete security program. Our newly installed access control and closed-circuit television systems puts us at a tremendous advantage from a security standpoint.”

The airport also added two new jet bridges to help accommodate the new volume, one during each phase of the project.

After crews completed Phase One in February 2015, MHK moved all of its tenants and services into the new, fully operational eastern half of the building. Airlines assumed their spots at new ticketing counters and rental car companies worked out of temporary offices nearby. A temporary baggage claim area was created with a garage door and plywood ramp, with agents manually delivering baggage to arriving travelers.

“We had half of a holdroom that seated approximately 100 travelers, big enough for one flight at a time,” Romo recalls.

Phase Two began in September 2015 with demolition of the empty western side of the terminal and ran until December 2016. Crews added 20,000 square feet of terminal space, including



Aviation planning guru, Stephanie Ward began logging flight hours at the tender age of 16. Her lifelong passion for aviation is now focused on how to ignite that same spark in the next generation of aviation enthusiasts and the future industry workforce. Give Steph a call to share your ideas on how to tackle this critical industry challenge.

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a new baggage claim room with one new carousel system and capacity for a second. Contractors also constructed new rental car counters and three ground transportation stations.

As an additional security measure, arriving passengers now pass through Boon Edam anti-passback revolving doors to enter the new 2,600-square-foot meet-and-greet area. An airside food-and-beverage area and landside gift shop and concessions (currently unoccupied) were also constructed.

Reunited

Upon completion of Phase Two, contractors removed the temporary wall that ran the entire length of the building to separate the two halves of the terminal during construction. “That was extremely challenging,” recalls Van Etten. “We had built two

separate buildings that we now had to marry together. We had to locate and match the plumbing and ductwork between the two buildings as well as match interior materials within the building.”

Joining the roof structures, a space of 6 to 7 feet, required special care. “We worked with Mead & Hunt and airport and local authorities to create safe passage areas for the public,” she notes.

Crews performed most of the infrastructure and mechanical connections between the two structures at night in four- to five-hour increments. Overall, the process took four to five months.

21st Century Facility

Romo can’t say enough good things about the new terminal. “The airport is the front door of the community,” he enthusiastically states. “Whether arriving or departing, the public is now greeted with a gorgeous state-of-the-art facility that represents the Flint Hills region.”

Aesthetically, the new structure is patterned after the area’s geography. “The curvature of the roof reflects the rolling hills, allowing the building to truly fit into its environment,” explains Mead & Hunt designer Jessica Tyler.



JESSICA TYLER

Inside, cloud-like metal ceiling panels continue the design theme. “We used a lot of calming earth tones, drawing limestone from a local quarry and using it on the exterior and interior,” says Tyler. “The extensive use of glass brings in a lot of natural light, which not only assists with wayfinding, but when combined with the stone texture and wood canopies creates a warm, welcoming atmosphere throughout the terminal. Additionally, the use of new programmable LED lighting saves a considerable amount of energy.”

Customer feedback about the new building has been phenomenal, reports Romo. New amenities such as wi-fi throughout the terminal and furniture with charging units bring the terminal into the 21st century and reflect the kind of services the Manhattan community needs and deserves, he notes.


Laurie Goscha, business unit leader for architecture at Mead & Hunt, agrees: “This is a beautiful building that reflects both the progressive spirit and regional pride of the Manhattan community.”



LAURIE GOSCHA



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SAFETY-First Philosophy Pays Off at Cincinnati Int'l

BY BRIAN SALGADO

FACTS&FIGURES

Project: SAFETY Act Certification & Designation

Location: Cincinnati/Northern Kentucky Int'l Airport

Originally Earned: June 2011

Renewed: Dec. 2015

Valid Through: 2020

Insurance Savings: \$25 million

Purpose of the Act: Ensure that the threat of liability does not deter manufacturers/sellers of anti-terrorism technologies from developing & commercializing technologies that could save lives



It's a lofty honor for Cincinnati/Northern

Kentucky International (CVG) to be the first and only airport with a security management plan certified under the federal SAFETY Act of 2002. But it's a designation that Chief Executive Officer Candace McGraw hopes to share with other airports soon.



CANDACE MCGRAW

The SAFETY Act—an acronym for Support Anti-terrorism by Fostering Effective Technologies—was enacted by the U.S. Congress in 2002 to support anti-terrorism efforts. The purpose of the act is to ensure

that the threat of liability does not deter potential manufacturers or sellers of anti-terrorism technologies from developing and commercializing technologies that could save lives.

CVG's Airport Security Management Plan received SAFETY Act certification and designation awards in June 2011 for meeting and exceeding all current industry standards through the implementation of innovative anti-terrorism measures. More recently, the airport applied for and received a renewal award that is valid through 2020.

Planning for the Unthinkable

In short, SAFETY Act designation provides CVG with benefits that, frankly, no airport

would ever want to leverage. If a terrorist act occurs at CVG, the airport's liability is limited to a designated amount of liability insurance that is specified by the Department of Homeland Security. Through the certification, CVG is entitled to assert the government contractor defense for liability claims arising out of an act of terrorism, ensuring the airport should not be held liable.

While it is difficult to quantify the overall savings associated with SAFETY Act compliance, McGraw notes that CVG has been able to cut back on its terrorism liability insurance. Generally, there will be a terrorism liability insurance premium savings if Homeland Security requires the airport purchases less liability insurance than previously required. CVG had been purchasing \$100 million of terrorism insurance, but its SAFETY Act protection cut that requirement to \$75 million.

Notably, CVG's SAFETY Act protections apply to and/or flow down to its subcontractors, vendors, distributors and customers.

"As you can see, from a terrorism liability standpoint, there is an advantage to doing business with CVG," McGraw says. "While we can't directly correlate increased revenues to the SAFETY Act, we believe there is a benefit in doing business with CVG vs. an airport without the protections."

While McGraw is proud of CVG's unique accomplishment in qualifying for SAFETY Act coverage, she encourages other airport executives to secure similar liability protection for their facilities. "Being the only airport in the U.S. to have this certification is not a distinction we want to maintain. Over the last six years, our staff has met with many airports and presented at conferences to encourage other airports to apply."

Why the Hesitation?

Attorney Mareco Edwards, counsel for the Airport Minority Advisory Council and a principal of South River Partners,



MARECO EDWARDS

believes one reason other airports haven't pursued SAFETY Act liability protection is the time and commitment it takes to apply for certification and

designation. He also says the liability provision of the SAFETY Act isn't well known within the industry.

"It is a significant and intrusive process that almost needs a full-time person dealing with the applications," notes Edwards. "Essentially, it's a very intense review of security processes and procedures—not just on paper, but what technologies airports have implemented and how they work."


As such, he advises airports pursuing SAFETY Act certification to dedicate plenty of internal resources to the application process. He also suggests working with the federal government and third-party auditors to ensure everything is correct before filing.

"Airports need to understand that what they're getting into is a long process that is very intrusive," Edwards warns. "You only have one shot to make a good impression; so make sure the first one is the best one."

Ongoing Improvement

Building on the renewal of its SAFETY Act designation and certification, CVG continues to integrate new technologies into its security operations. The airport was the first in the United States to install Blip Systems' Bluetooth and Wi-Fi Signal sensors and Leidos programming solutions at TSA checkpoints to identify wait time measurements in real time.

This innovation has directly influenced TSA productivity and scheduling to ensure improved wait times, and has been adopted at other airports, notes McGraw. "The implementation is to ease the fear of the unknown for travelers by illustrating wait times on our website and at the security hall entrance," she explains.

Security technology might even creep into CVG's housekeeping operations. Currently, the airport is working with Hipaax on a pilot program to improve response and efficiency by outfitting janitorial personnel with smart watches. An application, which originated in the restaurant industry, counts visits to key areas and alerts staff for service when pre-established thresholds are reached. Staff members receive, accept and clear service alerts all on their smart watches. The devices, however, also allow the airport to silently alert and respond to security-related concerns. 



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Miami Int'l Adds New Layers to Employee Screening Checkpoint

BY RONNIE GARRETT



PHOTO: STEVEN BROOKE



Project: Employee Screening Checkpoint Improvements

Location: Miami Int'l Airport

Airport Operator: Miami-Dade County Aviation Dept.

Strategy: Adding advanced X-ray technology & trace explosives detection

Technology Provider: Smiths Detection

Equipment: HI-SCAN 6040aTiX Heiman X-ray Inspection System; IONSCAN 600

Results: Improved security; no adverse effects on throughput



As the federal government considers getting tougher on employee screening at U.S.

airports, Miami International (MIA) is already exploring ways to make that happen. Its strategy? Deploying familiar technologies traditionally used to screen passengers and checked baggage.

MIA recently completed a six-month pilot to test advanced X-ray equipment and trace explosives detection at one of its five employee screening checkpoints. Airport execs are optimistic, as the changes are providing additional security measures without hampering throughput. Some, in fact, predict that MIA will serve

as a role model for other airports looking to improve awareness of insider threats at their locations.

"What we are doing voluntarily in Miami will become incrementally, but increasingly, required, based on new federal rules and regulations," says Mark Hatfield,

director of Public Safety and Security for the Miami-Dade County Aviation Department. "I don't think the open swinging door to secure areas, with a swipe-and-go card, is going to



MARK HATFIELD

be the norm in the future—especially if the terrorist threat profile continues to increase rather than decrease.”

Hatfield’s predictions recently came one step closer to fruition when the Aviation Employee Screening and Security Enhancement Act, aimed at closing security loopholes in current systems, moved to the U.S. Senate for final approval. If it passes, the new legislation would require TSA to submit a cost and feasibility study within 180 days for a plan requiring physical screening of all airport employees with access to secure areas.

As former deputy administrator for the Department of Homeland Security-TSA, Hatfield is well aware that just one worker with secure-side credentials can cause immeasurable problems, and MIA has about 35,000 such employees that serve 44.6 million passengers annually.

“It is possible for a bad actor to exist among airport employees, and for that bad actor to gain access to sensitive areas of the airport, aircraft, bags and cargo placed on the aircraft,” he explains. “That is why we have to train our focus on insider threats.”

Leading the Charge

While MIA presses ahead testing improvements to its employee screening system, the industry as a whole is under scrutiny. In

2015, a *Wall Street Journal* article pointed out that nearly 1 million employees at more than 450 U.S. airports with passenger screening checkpoints can use their credentials to access secure areas with little or no additional screening. A February 2017 report from a House Homeland Security subcommittee expressed similar concerns, noting that most airports have not implemented “full employee screening.” The subcommittee calls for wider use of biometric controls at employee checkpoints and better information sharing between law enforcement and national security agencies to improve screening of individuals with access to secure areas.

Though the congressional report identifies several systemic flaws, MIA has been ahead of the employee screening curve for some time. Its recent pilot project builds on a program that is more than 20 years old—predating post-9/11 security changes by years.

MIA launched its program to screen 100% of employees with secure identification display area (SIDA) access in the late 1990s. In addition to reducing the number of access points available to badge holders, the airport also installed metal detectors and standard X-ray machines to bolster employee screening.

“The genesis of this was a crime-fighting activity,” explains Hatfield. “[At the time,] there was a lot of theft and smuggling

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of drugs, money and other contraband. Airport officials decided they needed to get control of that and clamp down on access opportunities.”

Since 9/11, however, employee checkpoints have become increasingly important as anti-terrorism measures as well. That prompted the airport to take a second look at its existing system and partner with Smiths Detection to make further improvements.

Aided by Technology

Luke Olsen, director of sales for the security detection device manufacturer, encourages airports to draw from the procedures and technologies they use for screening passengers. He notes that the threat items—explosives, firearms, knives, blunt objects, narcotics—are not that different between the two populations, but employee screening systems need to allow for special circumstances, such as mechanics or technicians bringing work tools into secure areas.



LUKE OLSEN

Olsen considers MIA a thought leader in employee screening and praises it for being proactive about seeking out improvements to mitigate insider threats without impeding the flow of legitimate work items and personnel. “They wanted to know what technology



New multi-view X-ray equipment helps screeners discern items such as guns and explosives.

could do to assist their mission, and Smiths Detection stepped up to help them,” he says.

Though most U.S. airports already scrutinize employees through background checks and use access control systems to manage their movement, MIA realized that such measures don’t provide the same level of deterrence that screening equipment affords, explains Olsen.

“Technology folds very well into the operation we already have in place, which requires all employees going into controlled areas to be subject to daily screening as well as identity screening,” says Hatfield. “I was very quick to volunteer the operation here at MIA to be a proving ground to test new security equipment for this very reason.”

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The resulting pilot leverages two separate technologies: multi-view X-ray machines and trace explosives detection. The airport was particularly intent on assessing how new measures would affect checkpoint throughput, notes Hatfield.

A HI-SCAN 6040aTiX Heiman X-ray Inspection System from Smiths Detection replaced the single-view X-ray unit that had previously been used. The new equipment captures four views of each item sent for scanning and presents two of them to operators for review. Additional views of scanned items help screeners discern items in bags, particularly guns or explosives, explains Olsen.

The equipment also provides automated detection of solid and liquid explosives. Having four views provides a three-dimensional model of the image to calculate density, atomic measurement or material properties for items inside bags. “Those properties help us determine if an item is potentially an explosive device,” he explains. “If the algorithm determines that an item inside the bag matches the characteristics of an explosive or closely resembles the characteristics of an explosive item, then it will draw a box around that item to indicate that the operator should take a closer look.”

The company’s IONSCAN 600 adds yet another layer of security by analyzing samples of swabs collected from employees’ hands

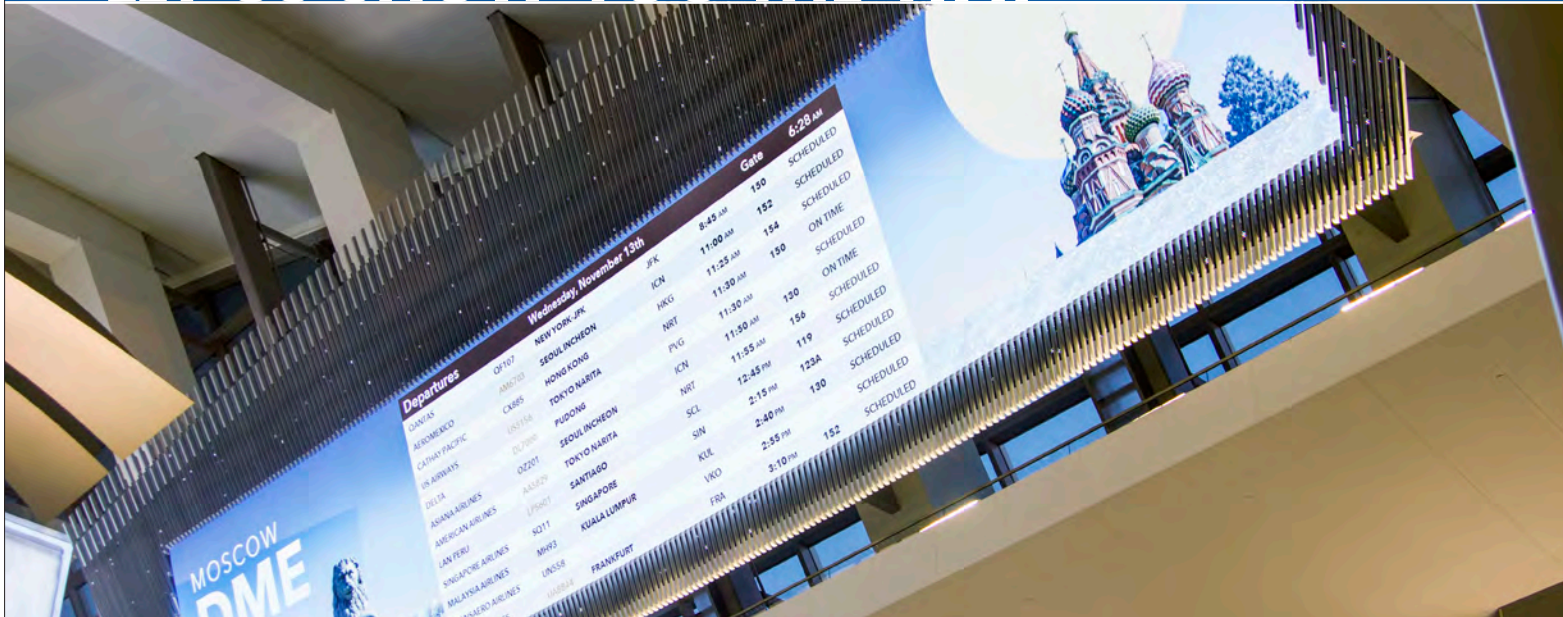


MIA is the first U.S. airport to deploy trace explosives detection at an employee checkpoint.

or bags for microscopic evidence of explosives—a technology that has been used for checked baggage and passenger screening since 9/11. “It will detect and identify material in very minute amounts,” comments Olsen.

According to Hatfield, MIA is the first U.S. airport to leverage trace explosives detection at an employee checkpoint. Typically, the high price tag of advanced technologies is an impediment, he explains: “We don’t have the budget to operate and staff the level of screening the TSA does at passenger screening checkpoints. For this reason, we have always had a basically equipped set up using older generation X-ray machines that are capable but not

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Enhancements to employee checkpoints are designed to boost security for employees and passengers alike.



to the level of the Smiths Detection technology we used in the pilot.”

All of the technology that was added was essentially plug-and-play, he adds. The new multi-view X-ray machine has a slightly larger footprint than the previous single-view machine, but was placed in an area that had extra space available. The trace explosives device is essentially a tabletop unit that requires little space. “There was minimal impact to the checkpoint, and very minimal requirements in terms of technology to accommodate it,” Hatfield reports.

Smiths Detection welcomed the chance to partner with MIA on the pilot because the airport already had a good baseline screening operation, says Olsen. “A lot of airports are not doing any screening with X-ray or trace technology, and so the benefit of working with an airport that was already doing it is [that] we had a good sense of what their throughput was,” he explains. “We were able to get a good sense of how these technologies could be applied and what their impact on throughput would be.”

The pilot also proved to be mutually beneficial. “We learned as much about how to best optimize our equipment for this type of process as the airport learned about how they could improve their security capabilities,” he reflects.

New Equipment, New Processes

Although MIA’s new equipment was plug-and-play from a technology standpoint, it required adjustments to human elements of the system. “We had to train contract security personnel in how to apply and use this technology,” says Hatfield. The airport did not want to clog the pilot checkpoint or restrict any access points by deploying such “highly sensitive, highly capable new technologies,” he adds.

The airport staffs the checkpoint with two to three people, depending on the time of day. Hatfield reports that the processing speed and throughput at the pilot checkpoint has remained about the same since the new equipment was installed, and has possibly improved at times.

Given the airport’s enhanced ability to detect items such as improvised explosive devices and other insider threats, it developed and rehearsed protocols for responding to alarms. “We don’t have nearly as sophisticated a process as the TSA or as many options in resolving an alarm, so we needed to put those in place,” explains Hatfield.

“We had to strategize with our police force,” he adds. “The Miami-Dade Police Department is the primary responder if a threat is discovered.”

Next Steps

Given the results of the pilot program, MIA is considering the possibility of equipping all five of its employee checkpoints with new screening technology. But that that won’t happen immediately, specifies Hatfield.

“We are exploring next steps with [Smiths Detection], and I think that we will extend the initial pilot until we firm up our longer-range plans,” he says.

The airport is tag-teaming its checkpoint project with a larger identity/background screening initiative. MIA will be one of the first airports in the nation to be connected to a perpetual employee vetting system called Rap Back, which the FBI developed with TSA.

Currently, employees must pass an initial security threat assessment to receive a badge that grants them access to secure areas. The process includes background screening for criminal history, fingerprint and name checks, and a TSA threat assessment on the database side. Once initial assessments are complete, employee profiles are usually not checked again until they come up for annual badge renewal. As an extra measure, however, MIA randomly selects a few hundred employees to re-run through the criminal database every month.

With Rap Back, this type of screening will happen almost continuously. “It will occur every 24 hours, so that if there is a known event involving [an employee], it’s going to come up,” Hatfield says. “With 24-hour revetting against all of the major criminal databases, if an individual has been arrested or a warrant has been issued, or they have been convicted of a crime, it’s not going to wait until badge renewal time or a random revetting of their name. It’s going to pop up in a 24-hour window.”

Together with recent employee checkpoint improvements, tougher background screening is helping MIA to reduce insider threats at its facility and pave the way for others to do the same.





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Customers & Airports Embrace Food-Ordering Apps

BY JENNIFER BRADLEY

FACTS&FIGURES

Project: Food-Ordering Apps

Strategy: Passengers & employees can skip lines at quick-serve food vendors by using smartphone apps to order & pay



Location: Dallas/Fort Worth Int'l Airport

App: Grab, integrated with airport's own app

Timeline: Airport app launched in 2014; Grab added in May 2017



Location: Fort Lauderdale-Hollywood (FL) Int'l Airport

Apps: Host2Coast, HMSHost's proprietary app, in terminals 1 & 2; Grab, contracted through Delaware North, in terminals 3 and 4

Timeline: Both apps launched in 2016



Skipping the line at airport restaurants used to be the stuff daydreams were made of—usually the daydreams of travelers with tight connections, employees on limited lunch breaks or parents with hungry kids hanging on their legs as they waited in line. Mobile apps, however, are changing the very definition of “grab-and-go.”

Orders placed on apps appear in concessionaires' kitchens alongside orders placed in-house and are paid for directly through point-of-sale software. Customers receive text alerts when their orders are ready and pick them up at pre-designated areas.

Passengers, airport workers and airline staff alike are thrilled with the chance to order and pay for food and drinks using their smartphone from practically anywhere. Airport operators and concessionaires are excited about the apps' potential to improve service and sales.

App within an App

When Dallas/Fort Worth International (DFW) originally launched its proprietary downloadable app in early 2013, it wanted to help visitors find their way around the airport (which is larger than Manhattan)

and assist with issues such as parking and flight times. This May, however, it integrated an outside app that provides menus and allows customers to order and pay for food using their smartphones. The app, aptly called Grab, even offers turn-by-turn directions to help customers find participating concessionaires.

Ken Buchanan, executive vice president of revenue management for DFW, considers the app a great way to capture revenue from customers or employees who may not have otherwise been able or inclined to stop for food.



KEN BUCHANAN

The airport launched Grab by performing a test run with employees. “They went on the app to different locations, placed orders, received the orders, and we all met at a central location and filled out forms on the experience,” he explains.

The “mystery shopping” format produced feedback for participating concessionaires to help improve the



service; and employees received free meals and had a lot of fun, reports Buchanan.

In late May, American Airlines, DFW's largest airline, also partnered with Grab and the airport. Buchanan notes that it's often hard to capture sales from deplaning passengers, but this new development might be just the ticket, especially for customers who don't want to make another stop after leaving the airport.

"Any time we can give passengers 15 minutes back, we think that is really positive for their experiences," says Mark Bergsrud, chief executive officer of Grab.



MARK BERGRUD

The integration with American Airlines and DFW is bound to increase usage of Grab, which is already available at 18 U.S. airports and growing quickly, notes Bergsrud. He reasons that infrequent travelers who don't already have the Grab app will find it when they use the airport or airline app as their preferred day-of-travel

app. "The integrations will cast a much wider net and bring millions of customers to Grab's airport and concession partners," he explains.

Terminal-Specific Apps

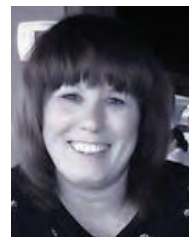
Fort Lauderdale-Hollywood International Airport (FLL) in Florida works with two food/beverage management companies, and thus offers two apps for online ordering. Delaware North operates in terminals 3 and 4, and contracts with Grab (pre- and post-Security). HMSHost is in terminals 1 and 2, and is implementing its new proprietary app called Host2Coast.

Leanne Andress, aviation business manager of concessions for Broward County Aviation Department, explains that Delaware North introduced Grab slowly at FLL, adding more and more restaurants as word grew. After using the app for a little more than a year now, the company is pleased with the response from passengers and employees.

"We're still introducing new people to Grab every day," she reports, noting that grassroots momentum propelled its growth. Delaware North employees introduced customers to the app by handing out cards to potential customers as they passed through the concessionaire's multiple restaurant locations. Word of mouth made a huge difference, comments Andress.

"By ordering ahead, passengers can ensure they have meals that suit their tastes without having to worry about lines or whether the restaurants in their terminal have a selection they would be interested in," she remarks.

"Anything that improves the guest experience is a plus," adds Tammy Turner, assistant general manager for Delaware North.



TAMMY TURNER

HMSHost is seeing similar results from its Host2Coast app. The app offers locations, operating hours and menu offerings for all of the company's airport restaurant locations throughout North America. The app launched pre-order and pay capabilities for its casual dining options at FLL and Chicago's O'Hare

International in February 2016. It has since expanded to nearly 10 airports, and the company hopes to have the pre-order and pay capabilities available at 50 concessions in 17 airports by the end of this year. Integration with travel companies is also under consideration.

Jim Schmitz, vice president of innovation for HMSHost, notes that the company is modifying its app to accommodate vegans, vegetarians and customers with gluten restrictions or other special diets. Users will be able to communicate their specific requirements and preferences through customer profiles set up



JAMES SCHMITZ

and saved in advance. "We think those things are very important," says Schmitz. "Airports have to really drive that customer service impact, and we wanted to make the customer experience first in our approach, too."

Promoting the app needs to be done in a big way, he adds: "You need to grow a market, and once you have scale, we can really show value to the customer traveling through Chicago to Los Angeles."

Efficient for All

Airport and concessions personnel note that food-ordering apps don't just benefit travelers and other airport customers, they also benefit employees who work for the airport and airlines.

Buchanan reports that DFW staff members love the options and flexibility Grab provides, and employee discounts are automatically applied to their bills with a special code during the order process. Not surprisingly, time-pressed flight crews and other airline workers really appreciate the convenience, he adds.

At FLL, concessionaires also got into the spirit. "It was fun the first few days to watch the orders come up on the screens and see which were from Grab," reports Turner. "Now, it's just routine and everyone knows what it's for; but there was a buzz about it at first."

Given the app's strong reception from employees, she would like to expand it to include deliveries to the baggage area. "It's fairly simple, because if we have a cashier, Grab is just another guest," she explains.

Applying Best Practices

Buchanan stresses the importance of having a critical mass for concessions apps. "Just one or two locations participating does not add enough choice for the customer," he advises. It's also important to train and equip concessionaires with all the needed tools, he adds.

At DFW, Grab and the airport both provide training about the app and consider it a collaborative project. "We [the airport] have to go that extra mile to really own this experience, too," explains Buchanan. "We need to be a partner and not just offer a service through another company, because it's also our brand as an airport that's on the line."

Turner sees it similarly from the concessionaire's standpoint. She says that an app is just one piece of the guest experience, and the experience as a whole reflects on the airport, airline and individual restaurants. "[Having an app] looks favorable for the airline and the airport, and we have had great



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unintentional consequences,” she reports. “Traveling is tough, and if you can buy minutes, that’s a plus.”

Schmitz adds that HMSHost learned many things while launching Host2Coast, but it learned even more when it created a previous app that was ahead of its time—before the Apple Store and Google Play Store were mainstream options. “Now, people have become comfortable using apps in airports and it’s become important,” he notes.

The Future of App-based Ordering

Given DFW’s history of embracing technology, its use of a concessions app is not surprising. Buchanan notes that the airport considers each passenger’s visit an opportunity to provide a unique experience based on whom that customer is and what he or she wants. Data-driven technology helps the airport find out what passengers want and how to offer it. The popularity of DFW’s app and its 2016 Airport Service Quality Award as the best large airport in North America speak to its success.

Schmitz agrees about the importance of personalizing customer experiences. That’s one of the reasons he is intent on improving the HMSHost app to accommodate individual needs such as special diets. That’s not to say it will be easy. “It’s a lot more challenging to

get information correct for food via an app—especially for kitchen restrictions,” he comments. “We have to make sure they are 100 percent accurate, but we think the effort is important.”

Airport concession apps seem to have found a place with customers—from frequent flyers and casual travelers to a wide variety of employees. And airports and concessionaires who already offer them say that app-based ordering is here to stay.

DFW recently expanded the concept beyond smartphones by launching a version of its app for the Apple Watch. San Diego International Airport also added an interesting twist by selecting AtYourGate, a Grab partner to provide a mobile ordering option and the industry’s first delivery of food and retail items anywhere in the airport. This means customers making quick connections can have meals waiting for them at their departure or arrival gates; employees can have snacks delivered to their work areas to maximize break times; and travelers who forget to pack items such as a belt or toothpaste can have replacements in-hand before they leave the airport.

“Anything that improves the guest experience is a plus,” summarizes Turner. “From the airport director standpoint, this is a convenience for their customers. In today’s world, time is a premium. ✈️

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Westchester Airport Installs “Mini” In-Line Baggage System

BY THOMAS J. SMITH

FACTS&FIGURES

Project: New Baggage Facility; Screening System With In-Line Explosives Detection

Location: Westchester County Airport (White Plains, NY)

Owner: Westchester County

Cost: \$29.4 million

Funding Sources: TSA, \$10.5 million; Passenger Facility Charges, \$8.8 million; County Capital Budget, \$9.8 million; Airport cash-on-hand, \$558,000

Timeline: Active planning began in 2010; revised design approved by FAA in late 2014; project bid in 2015; construction of facility complete & screening/handling system fully operational by Aug. 15, 2016; project totally complete in Oct. 2016

Architect: Graf & Lewent Architects

Baggage System Designers: BNP Associates

Construction Consultant: Gleeds

General Contractor: VRH Construction

Baggage Screening Contractor: Automatic Systems

Steel Contractor: QSR Steel Corp.

Masonry Contractor: James McGowan & Son Masonry

The new \$29.4 million checked baggage facility at Westchester County Airport (HPN), near White Plains, NY, was in the design process for four years, but the delay was worth the wait. The new handling and screening system contains in-line explosives detection and is less costly to operate and maintain than similar systems at peer airports.

As owner of the small commercial airport, Westchester County faced an all-or-nothing deadline for the project on Aug. 15, 2016. The new facility not only had to be completed by then, but the screening and handling system had to be fully operational, or TSA would not provide a \$10.5 million grant for construction and equipment. If contractors missed the target date, the county would not receive any of the federal funds, explains Vincent F. Kopicki,



VINCENT KOPICKI

county commissioner of Public Works and Transportation.

Because the grant had a “sunset deadline,” funds would be reallocated elsewhere if not spent by end of the federal fiscal year, Sept. 30, 2016. Interestingly, HPN was the only one of three airports using “sunset” dollars that completed its project on time and received funding.

An initial proposal for HPN’s new baggage screening facility was submitted by project architect Graf & Lewent in 2008 with a series of other renovations for the 1996-era, four-gate passenger terminal; but the county did not act on the list at the time. Active planning for the baggage facility, however, began in 2010.

Clearing the Lobby

After screening requirements changed in 2001, two manually fed explosives detection systems—each about the size of a small car—stood in HPN’s lobby. Like many other



STEVE LEWENT

it quickly became apparent that a state-of-the-art in-line screening system would not fit within the footprint that was initially envisioned for the facility. “The 5,000-square-foot

addition would have been woefully inadequate,” says Steven Lewent, principal at Graf & Lewent. “There would not have been enough room for the conveyors, sorting machines, screening devices and a hand screening room.”

The airport consequently expanded the addition to just more than 10,000 square feet. The building became an in-fill structure on the terminal’s north end incorporating the separate fire station and ground equipment storage buildings. To match the existing buildings, designers added a second floor to the screening facility, Lewent notes. The second floor now houses offices of the airlines and TSA.

Back to the Drawing Board

With plans for the new facility about 60% complete, the county put everything on hold and instructed the design team to try again.

The county challenged everyone, including the baggage handling system designer (BNP Associates), to design a scheme that would reduce operating costs but still meet TSA standards.

The motivation was easy to understand, notes Lewent: While TSA would be picking up the tab for the building and screening equipment, the county would be responsible for ongoing operating and maintenance costs.

Designers scaled back and simplified some of the handling equipment to reduce operating costs, and the revised layout was dubbed a “mini in-line system.”

The new facility can screen about 380 bags per hour—a rate designated by TSA to match the airport’s traffic level.

airport operators, the county wanted to shift the devices from the public area to a secured location behind the scenes. In addition to improving security and safety for passengers, the change would free up space in the crowded ticketing lobby, explains Kopicki.

Unlike most airports, however, HPN is legally prevented from growing. For more than 30 years, county laws have limited its passenger traffic to 240 passengers in any given 30-minute period. In recent years, traffic has averaged about 1.75 million passengers per year.

Currently, the airport offers flights to 20 destinations on six carriers. Due to its suburban New York location, HPN markets itself as an easy alternative to the region’s major airports—John F. Kennedy International, LaGuardia Airport and Newark Liberty International.

As the design team began preliminary drawings for the new baggage system,



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Crews wrapped scaffolding in thick plastic to keep the project moving during winter.

Now operational, Kopicki says the system is working perfectly fine. “Other airports are looking at our mini system and wishing they had our system,” he reports.

Because of the design changes, TSA had to review new plans before the project could proceed. The new design was approved in late 2014, and the project was advertised in early 2015.

Conflicting Deadlines

The county bid the project at varying intervals and awarded the associated contracts at different times, with different completion deadlines.

VRH Construction was selected as the general contractor responsible for building the shell to house the baggage screen system. Automatic Systems Inc. won the contract to install the new handling system with in-line explosives detection.

VRH received its contract first, with a December 2016 completion date; ASI's contract was awarded later, with an Aug. 15, 2016, deadline.

In order for ASI to meet its deadline—which coincided with the crucial completion date for TSA funding—it needed a fully enclosed space with all of the power, heat and air conditioning in

place months earlier than VRH's original schedule planned.

To accommodate, VRH began working on the project in August 2015 and turned over the first floor to ASI the following April. While the weather was still cooperating, VRH crews also poured the concrete floor, reserving “pockets” for future steel columns.

An even bigger challenge arose after the steel was erected in January 2016. “We needed to get right into the masonry, and we were in the throes of winter,” explains VRH project executive Steve Haussel. This was no small issue, as the building structure is made of cement masonry units with a brick facing on the exterior.

The contractor consequently erected scaffolding around the building and completely enclosed it with plastic shrink wrap similar to the type used to weatherproof boats. Crews ran two diesel heaters to keep interior temperatures at 40 F.

“We created ourselves a little dome,” remarks Haussel. “We were able to work through the coldest months of the year.”



STEVE HAUSSEL

While VRH has created similar cocoons for other foul weather construction, this was its largest, he notes.

Crews added the roof after erecting the walls and removing the scaffolding. The contractor considered erecting the roof under the dome, but the extra height would have caused the project to interfere with airfield operations.

When the first floor space was turned over to ASI, the concrete floor had been poured and steel decking was in place for the ceiling in the baggage screening area, but the roof was not in place. Unfortunately, White Plains received significant rainfall that spring, so workers had to squeegee the water into buckets to keep crews on the first floor dry.

ASI consequently met the pivotal Aug. 15, 2016, deadline; and the entire project was finalized in October 2016.

With the large explosives detection equipment removed from the lobby and airline offices shifted to the new second floor space, HPN now has the flexibility to reconfigure its crowded terminal. Future capital projects, however, are on hold as the county awaits the outcome of an on-going solicitation designed to privatize the airport. (See sidebar 29 for more details.)

Potential for New Operator Impacts Future Improvements

Future infrastructure programs at Westchester County Airport could rest in the hands of private investors.

In April, the county issued a request for proposals from private investors interested in taking over the airport on a 30-year lease with the county. Proposals are due in July, and the county hopes to have the investment team selected within 30 days of the bid closing and a lease executed by the end of the year.


If the county succeeds in obtaining the necessary FAA approvals, HPN would be the first U.S. commercial airport to be privatized under a 2012 FAA pilot program. Two other airports—St. Louis Lambert International and Hendry County Airglades Airport in Clewiston, FL—are also currently in the application pipeline.

Commissioner Vincent Kopicki, who oversees the airport, notes that the county is exploring privatization to free up county funds from the airport to be used elsewhere in county operations. The recent \$29.4 million baggage screening facility was funded in part with \$9.8 million in county capital improvement funds.


As part of the bidding process, the county is asking proposed investors to outline a near-term, five-year capital improvement program. Likely projects will include:

- redesigning the passenger lounge with enhanced seating;
- reconfiguring the ticketing and boarding areas;
- improving vehicle parking with valet and garage check-in options;
- upgrading concessions with more food and dining offerings; and
- improving aircraft deicing facilities and drainage.

Three conditions that *aren't* eligible for change by potential new investors are the airport's 702-acre footprint, traffic limits and its current curfew on operating hours.

Since 1977, the county has contracted with AvPorts to manage day-to-day operations. 



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Calgary Int'l Loads New Terminal With Passenger-Processing Technologies

BY JODI RICHARDS



FACTS & FIGURES

Project: Airport Development

Location: Calgary (AB) Int'l Airport

Total Program: \$2 billion

Terminal Cost: \$1.43 billion

Size: 5 levels; 2 million sq. ft.

Architect & Prime Consultant: DIALOG

Mechanical & Electrical Engineer: AECOM

Structural Engineer: RJC

Primary Construction Manager: EllisDon

Mechanical/Electrical Construction Manager: Trotter & Morton

Passenger Tracking Technology: Xovis

Automatic Docking Guidance System: ADB SAFEGATE

Technology Enhancements

Call-to-Gate Passenger Boarding System

CATS Plus Screening Checkpoint

Automated U.S. & Canadian Customs Kiosks

Swing Gate Technology

Automatic Docking Guidance System

Custom Passenger Shuttle Service (YYC Link)

System to Screen/Track Checked Bags Transferring from Int'l to Domestic Flights

Self-Service Bag Drops

Interactive Touch-Screen Directories

Enhanced Mobile Website



Last fall, YYC Calgary International Airport (YYC) in Alberta capped its \$2 billion airport development program with the opening of a new five-level, 2 million-square-foot terminal brimming with state-of-the-art technologies (see list to the left for specifics). Together with a 14,000-foot runway that opened in June 2014, the projects represent the largest single infrastructure program in the airport's history.

The new \$1.43 billion terminal adds 24 gates to the busy airport and incorporates a plethora of new systems, equipment and processes designed to optimize operations and enhance the passenger experience. Last year, YYC served 15.7 million travelers.



MIKE MAXWELL

Mike Maxwell, vice president and chief information officer for YYC, identifies foundational technologies as one of the most important aspects of the entire terminal project. "Having a robust core technology platform really allowed us to layer on a lot of the more passenger-focused or passenger-processing systems," he explains. "Without a strong base or commitment to building out a strong, scalable and highly available and high-functioning foundation, we wouldn't have been able to do as much as we have with passenger processing."

To ensure that technology investments delivered the greatest bang for the buck, YYC officials deployed them throughout the entire airport. "The organization committed to a full retrofit of our data center technologies, as well as our networking platforms, across the whole campus," Maxwell says. "It would have been very short-sighted or limiting if we only built those things out in the new terminal."

Having a well-established data network—wired, first and foremost, Maxwell emphasizes—is critical. "We [also] want to ensure we have the best possible wireless network for all people—whether it's the traveling public, our tenants, ourselves or the airlines," Maxwell states.

Investments in both wired and wireless networks provide all users with reliable service anywhere they need it—on the apron, in the concourse or in the operational areas, he explains. In addition to providing wireless infrastructure, YYC also operates its own wireless network, with 1,200 Wi-Fi antennas in the new terminal alone.

Because the airport foresees more digital developments and increased interconnectivity in the future, it added a network with tremendous capacity and built it to be scalable, explains Maxwell. As chief information officer, he considers it his greatest asset.

As for longevity, the new technology platform was designed and built to match the lifecycle of the new terminal: 30 years.

Screening Enhancements

Streamlining passenger processing throughout the new 2 million-square-foot terminal was a high priority for airport officials, relates Maxwell.

In turn, YYC is the first airport to launch a full CATSA Plus pre-board screening checkpoint. The new system—a partnership with the Canadian Air Transport Security Authority—combines a number of new processing flows and technologies to provide passengers with a smoother and more secure screening process. Specifically, it is doubling YYC's previous throughput, reports Maxwell.

Sensors in the ceiling anonymously track passenger movement in the queue area and within the checkpoint, which reduces the number of times that boarding passes are scanned. Information collected by the sensors is integrated with CATSA's boarding pass security system and automatically calculates wait times and throughput statistics.

Parallel divest stations allow up to four passengers to place their carry-on belongings in screening bins at the same time. This improves the overall process because passengers no longer need to wait for those in front of them—they can bypass others who may need more time or assistance, explains Maxwell.

A new bin tracking system assigns a unique radio frequency identification tag to individual collection bins and photographs each one before it enters the X-ray machine. Other new checkpoint features include remote image review and a continuous belt that provides a constant flow of bins through the X-ray machine. A centralized screening room allows officers to review images in a remote location, away from distractions at the checkpoint. Workstations are connected to a network that assigns X-ray images to the first available screening officer.

Together, the various enhancements are designed to make it easier and faster for officers to identify items that require additional screening. A motorized bag diverter with split lanes allows officers to reject bins with flagged items and automatically redirect them to a separate search line for additional screening. Meanwhile, bins that are cleared proceed down another lane. Officials note that this process enhances security and improves flow through the screening line.

Motorized rollers automatically return empty bins to the front of the line, reducing manual labor. The repack area was expanded and equipped with additional tables and benches to enhance passenger comfort and reduce bottlenecks by moving passengers away from the screening lines.

As a whole, the new system is designed to produce higher-performance screening lines while also addressing CATSA's vision for seamless security. The upgraded checkpoint was initially tested at Montreal-Trudeau International Airport in August 2016, and then deployed at YYC later that year.

"We're seeing a much higher throughput, which means less waiting for our passengers," Maxwell reports.

In the near future, the system will include eGates at the entrance of the checkpoint to automatically validate boarding

passes and Trusted Traveler credentials. Once installed, the new gates will inform passengers of the next available screening line.

Customs & Checked Bag Improvements

New technology was also added to improve passenger processing in its Canadian and United States Customs halls. The deployment of automated kiosks in both areas has been a positive effort, reports Maxwell. "This certainly streamlines the experiences for passengers. We've seen very good throughput increases."

New practices for arriving passengers who are connecting to domestic flights are proving beneficial as well. YYC's International to Domestic System allows the airport to ensure that checked bags for such travelers are screened and can be recalled by Canada Border Services Agency, if necessary; but passengers no longer have to reclaim and recheck their baggage between flights. "Now, passengers can flow through the process without getting their bags and without being rescreened," Maxwell explains. "The whole process of arriving back in Canada and heading off to your gate to Edmonton or Winnipeg, for example, is a lot simpler and a lot smoother."

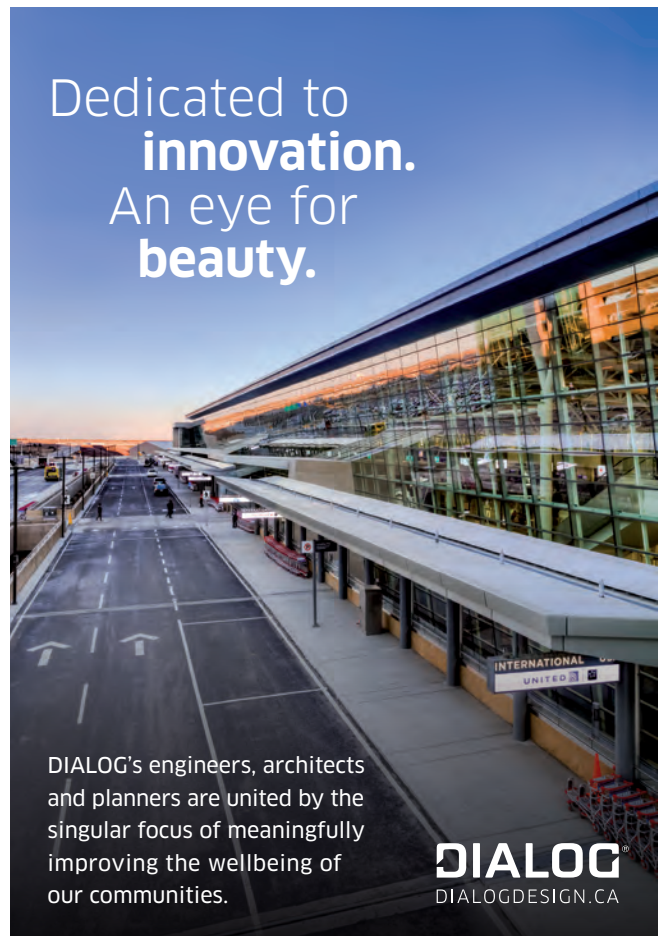
Technology Outside the Terminal

YYC focused its airside changes on increasing flexibility and efficiency for airlines and boosting comfort and safety for passengers.

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Swing gate technology developed and installed with the help of industry partners allows the airport to accommodate domestic, international or trans-border flights at a single gate. The new system allows the airport to screen gate corridors using video analytics and control doorways to ensure the pathways are completely secure. Airline agents then configure the gate for the specific style of operation required for each flight, thereby reducing staff that would have been required to conduct the process manually.

The swing gate solution contributes to YYC's commitment to security and ensures operations are being conducted according to regulations and mandates while also allowing team members to service passengers in a more efficient manner, Maxwell explains.

If the system triggers an alarm, a centralized security operations center can use cameras and video software to review and mitigate issues—often without having to dispatch staff or security personnel, he notes.

Given the operational flexibility swing gate technology has added, the airport is considering extending the system as the

need to support more domestic, international and trans-border flights increases.

Outside the gate area, automatic docking guidance systems are providing additional benefits. Safedock Advanced Visual Docking Guidance Systems and SafeControl Apron Management software, both supplied by ADB SAFEGATE, help YYC ensure the safe and efficient automated marshaling of aircraft, says Taha Zahir, the company's project manager for gate solutions.

The systems are particularly helpful during irregular operations such as electrical storms, notes Maxwell: Previously, if an airplane landed during an electrical storm and airline policy prompted the airline ground staff to evacuate the apron for safety reasons, passengers sometimes had to wait onboard the aircraft, just outside the terminal. Today, the airport's new technology allows aircraft to safely connect to the boarding bridge so passengers can deplane, he explains.

The Safedock system uses an infrared laser and scanning technique to provide active guidance to pilots to support safe, efficient and precise aircraft parking, saving time and fuel, adds Zahir.

Increase capacity with efficient & predictable gate operations

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Data Drives Future Innovation

In addition to increasing operational efficiencies and passenger service, YYC's recent technology additions will also provide invaluable data, notes Maxwell. Looking ahead, the airport is researching how it can put that information to work.

"One of our focuses now is to ensure that we're working with our airline partners to figure out how we can use all of this information to make better decisions and empower our passengers," he states.

"As an airport, we believe that technology and innovation are key parts of how we increase the value to our No. 1 customer—the airlines—but also to the traveling public," Maxwell relates. "It's exciting because we have such a great investment and we can leverage it more and more. We're in a great position and really looking forward to demonstrating that value to all of our stakeholders." ✈️



A new automated docking system uses infrared lasers and scanning technology to help pilots park aircraft.

Centralizing Concessions

Amid a flurry of technological enhancements for its new terminal, YYC Calgary International Airport (YYC) also kept its eye on design. And once again, the goal was improving passenger flow and providing the best possible experience for travelers.

New secure-side areas represent a noticeable change in strategy for YYC. Concessions are concentrated in a centrally located area to encourage passengers to wait there rather than at their gates. Display boards located throughout the central nodes allow travelers to see up-to-date flight information while choosing among 50 food/beverage options, retail shops and other amenities.

"Instead of distributing all the concessions and services through the long concourse network, we have more of a centralized waiting area," explains Mike Maxwell, the airport's vice president and chief information officer. "Our gates are intended to be more of a destination when it is time to board the flight."

A variety of seating options and outlets for charging electronics provide additional incentives for passengers to wait in the new Departures Hall. The intention is to provide the highest level of service and offerings in one convenient space, notes Maxwell.

But changing passenger behavior—specifically, the desire to head straight to gate areas after clearing the security



checkpoint—has not been easy. The challenge is making passengers comfortable with remaining in the Departures Hall, he relates. "But the main thing is to ensure the passenger experience and if people want to go to the gate, they are certainly welcomed to do that, but we continue to try and reinforce that for their enjoyment and comfort, the best experience is in the centralized area." ✈️

Austin-Bergstrom Int'l Relieves Growing Pains With Satellite Terminal for Non-Legacy Carriers

BY KRISTIN VANDERHEY SHAW



Austin-Bergstrom
International Airport

FACTS&FIGURES

Project: New Terminal for Non-Legacy Carriers

Location: Austin-Bergstrom (TX) Int'l Airport

Strategy: Rehab vacant airport building via a public-private partnership

Est. Cost: \$12 million

Timeframe: 8 months

Gates: 3

Current Carriers: Allegiant Air; ViaAir

Coming Soon: Sun Country

Project Manager/Owner: Oaktree Capital Management

Interior Design: Fentress Architects

Construction: AECOM Hunt

Electrical/Mechanical Design & installation: Bay Engineering

Canvas Canopies: FabriTec


Primary Benefits: Decrease strain on main terminal; encourage non-legacy carriers to expand

Boarding Ramps: KCI

Additional Benefit: City ensured that new terminal met industry & local guidelines but didn't have to plan & design it.

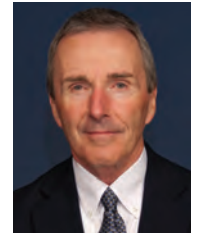




 The city of Austin, TX, has been expanding rapidly for the past several years, with no discernable end in sight. Last year, its population grew by 2.9% (nearly 60,000 people) and forecasters predict that the city will reach the 3 million mark before 2030. As of this March, Austin was home to more than 2 million residents.

Locals attribute growth to ample job creation, pleasant weather, great live music and an overall high quality of life. While the population boom has been wonderful for business expansion and real estate values, it was straining the seams of the Barbara Jordan Terminal at Austin-Bergstrom International Airport (AUS).

“When the airport was built in 1999, it was designed for a capacity of 11 million passengers,” says Airport Director Jim Smith. “We blew through that a few years ago. We’re probably going to go over 13 million this year.”



JIM SMITH

So AUS is maximizing its current facilities and adding new infrastructure to alleviate that stress. In mid-April, the city-owned airport officially opened the doors to its new South Terminal, facilities created specifically for low-cost carriers in a building that had previously stood vacant for years. In 2019, AUS is scheduled to unveil a nine-gate expansion to its main terminal that will increase its capacity to 15 million annual passengers.

“That should set us up for a period of time,” reflects Smith. “But if this growth stays constant, which is twice the rate going at a national basis, we’ll have to initiate another expansion.”

Accommodating Growth

To provide more flights for its rapidly growing city, AUS turned to the fastest-growing airlines in the area: low-cost carriers. Specifically, Smith approached incumbents Frontier Airlines and Allegiant Air, and both expressed interest in expanding their service at AUS.

With more than 57 consecutive quarters of profitability and new aircraft on order, Allegiant is particularly in synch with Austin’s growth curve.

“We had our first brand new Airbus shipped, and nine more will come online this year,” reports Daniel Meier, Allegiant Manager of Airports. “All of our MD-80s will be gone by the end of 2019, and our last 757 retires in November of this year. The new Airbus aircraft are more fuel efficient and more reliable, which results in fewer delays and mechanical disruptions.”

Knowing that the airport’s low-cost carriers were interested in expanding service at AUS, Smith reached out to Oaktree Capital Management in 2015 to discuss public-private partnership (P3) options for renovating an existing building located about 8.5 miles (by public roadway) and 20 minutes from the main terminal. Given the pressing need, Smith reasoned that a P3 would be able to move ahead with the project more quickly than the city could. (See sidebar on Page 38 for more info about the alternative project delivery method.)

After receiving approval from the city council to move forward with a P3 plan, the city negotiated and executed a lease. By summer 2016, crews were renovating a vacant building that was originally built as a motor pool maintenance facility by the Air Force in the 1960s. Viva Aerobus, a low-cost Mexican carrier, had taken over the building in 2007 and commissioned it as an international arrivals terminal. Hampered by the recession, the budget carrier only operated there until 2008, and the facility was mothballed until AUS recently repurposed it once again.

Now, LoneStar Airport Holdings, a portfolio company of Oaktree, holds the 30-year lease and concession agreement with Austin Aviation Department for the building, renamed the South Terminal. Under the agreement, LoneStar will manage and operate the passenger building and also plan, direct and finance the future development of the South Terminal.



Food trucks service a new outdoor patio.



JEFF PEARSE

“Oaktree, like so many other private investment firms, has been interested in P3 arrangements across numerous sectors,” says LoneStar Chief Executive Officer Jeff Pearse. “In North American markets, there aren’t many examples of private management existing currently; our goal was to try to really leverage the FAA’s privatization pilot project to show that it’s a viable concept in terms of funding capital development at airports.”

Smith notes that P3 projects are not new for AUS. “We have a cargo facility, hotel, gas station, consolidated rental car facility and cellphone lot with restaurant, all set up under this model,” he relates. “It’s an alternative way to deliver on an airport, and our experience has been very positive. We think it’s going to be a demonstration of how successful P3 can be.”

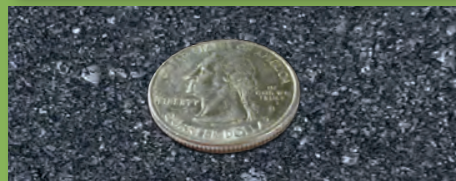
New Life for Old Terminal

Fentress Architects worked closely with LoneStar and under the supervision of AECOM Hunt to transform the mothballed terminal into a facility that would help relieve congestion in the airport’s main terminal. (AECOM Hunt formed in 2014, when engineering design giant AECOM acquired Hunt Construction Group to significantly increase its construction service capabilities.)

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Pearse describes the project as a total gut job. “We poured \$12 million into this project, and the result is a radical transformation from what it was before,” he explains. Previously, most of the terminal had been dedicated to Customs and Border Protection operations for international flights, and all of that infrastructure was pulled. Designers also flipped the locations of the ticketing and baggage claim areas and streamlined the security checkpoint.



ERIC HOWE

Eric Howe, project director at AECOM Hunt, notes that his firm worked closely with the architects to ensure that the project stayed within budget yet still delivered the high-end look LoneStar wanted.

One strategy was re-using existing light fixtures in back-of-house spaces to free up funds for new, decorative light fixtures in public spaces.

“We added new walls, new finishes, new paint, and painted the outside of the building to freshen up the building, which had been sitting vacant for a few years,” says Howe. New canopies accented with variable lighting helped add a desired “wow factor.”

Currently, the South Terminal is home to two carriers: Allegiant, which flies to 10 nonstop destinations from AUS; and ViaAir, with weekly departures to Branson, MO. The 30,000-square-foot facility includes its own TSA checkpoint, baggage claim belt and ticket counters. Giant windows behind the ticket counters showcase aircraft on the tarmac, and murals of Austin adorn the walls.

Baggage Claim is located close to the aircraft parking area, which means luggage begins to roll around the collection belt quickly.

“South Terminal was designed to fit the low-cost business model,” explains Smith. “We eliminated boarding bridges and fancy baggage systems to save money. Passengers walk up ramps, not an air-conditioned contact bridge. The design harkens back to mid-century air travel, when everything was simpler.”

Meier notes that outdoor ground boarding makes sense in Austin, because its weather is favorable all year long. The arrangement also allows Allegiant to board from the front and back of the aircraft simultaneously, which saves time and money.



Designers transformed the mothballed terminal with new finish materials and furniture.



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P3s Defined

A public-private partnership (P3) is a contractual arrangement between a public agency (federal, state or local) and a private sector entity. Through this agreement, the skills and assets of each sector (public and private) are shared in delivering a service or facility for the use of the general public. In addition to the sharing of resources, each party shares in the risks and rewards potential in the delivery of the service and/or facility. – The National Council for Public-Private Partnerships

Terminal amenities include a convenience shop with pre-made sandwiches and snacks, vending machines and an outdoor patio with tables, couches, a pet relief station and food trucks. Designers specified soft lighting in the middle of the hold area to create a lounge feel, and provided several counters with outlets for charging mobile devices.

Lower Rent

Strategic renovations of the abandoned facility allowed AUS to hold down rent for the new terminal to approximately 50% of what carriers pay in the main terminal.

“When Allegiant was in the main terminal, the cost per enplaned passenger was \$8.30,” shares Pearce. “In the new terminal, it’s going to be around \$2 per enplaned passenger.”

Such substantial cost savings will attract more carriers to the South Terminal, he predicts. This summer, ViaAir and Sun Country will run seasonal flights from the newly renovated facility, enjoying the same financial benefits as Allegiant.

“Our most important advantage is that we offer access to this robust market at less cost than the main terminal,” says Pearce.

New Terminal, New Arrival Process

One of the biggest challenges for LoneStar and the city’s aviation department has been educating passengers about the new South Terminal—specifically how to find it and to use its associated parking structure.

“We’re getting a larger number of people than we anticipated showing up at the main terminal for their flight instead of going straight to the South Terminal,” says Smith. “Over time, it will get easier.”

A free shuttle bus consequently makes frequent trips between the main Barbara Jordan Terminal and the new South Terminal, as the two buildings are serviced by different entrance roads and are not physically connected with one another. Ideally, LoneStar and Allegiant would prefer to have more signage on and off the airport grounds.

In the meantime, Allegiant emails all customers booking online, emphasizing that they will depart out of the South Terminal. Passengers also receive reminder emails with a map and the terminal address one week before their flights. In addition, Allegiant drives the point home on social media and its blog, and is working on a text system to communicate with passengers departing from AUS.

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Austin's mild weather allows the airport to save money by using boarding ramps instead of boarding bridges.

If passengers miss their flights after going to the wrong terminal, Allegiant maintains a "generous re-accommodation policy," says Meier, noting that the terminal is still very new. Even customers who are initially frustrated about the difficulties they encounter finding the South Terminal are delighted once they walk in the front door, says Courtney Goff, a public relations specialist for Allegiant.

"We're striving to create a stress-free customer experience," she says. "The South Terminal offers an easy way to drop people off, find their gate, check their bags, and get through Security. Many of our customers travel once a year or so, and they might get flustered by large terminals. It's great for the infrequent traveler; the ease and convenience is great for elderly travelers and families traveling with children, as well."

Even with initial confusion about its location, the new terminal itself is very convenient, says Pearse. Discounted parking (\$8 to \$16 daily vs. \$18 to \$27 per day at the main terminal) should help entice passengers to head directly to the South Terminal, he adds.

Smith, who has spent the last 33 years with the city of Austin, is convinced that the new terminal would not have been ready as quickly as it was without using a P3 model. "This is a gamble on all of our parts—passengers have to go to a separate location to get to this terminal," he notes. "It's an experiment to see if the value to the LCCs [low-cost carriers] is enough to see if they will grow vs. the connectivity for the main terminal. Time will tell, ultimately, whether the fundamental premise behind this model will work."

That said, he's placing his bets on success—even as he acknowledges some of the early challenges. 

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Mobile boarding ramps enhance passenger safety and comfort at remote hardstands.



Airports Ease Remote Boarding Challenges With Mobile Ramps & Airside Buses

BY JODI RICHARDS

FACTS&FIGURES

Project: Alternative Boarding Solutions



Location: Seattle-Tacoma Int'l

Airside Passenger Transport: COBUS 3000 airside buses

Mobile Passenger Boarding Ramps: Aviramp

Special Need: High traffic & limited gates require frequent hardstand operations



Location: Cancun Int'l

Mobile Passenger Boarding Ramps: Aviramp

Special Need: Growing medical tourism market & high percentage of elderly passengers with mobility challenges



When infrastructure constraints preclude loading and unloading aircraft at the terminal, airports need to get creative. Mobile boarding ramps and airside buses are two options operators are using to keep passengers safe and comfortable as they enter and exit planes on the tarmac.

Seattle-Tacoma International (SEA), operated by the Port of Seattle, uses both to help cope with growing traffic levels while waiting for major gate expansions that are more than a decade away. For the last six years, SEA has broken its previous annual passenger records; and last year, it served 45.7 million travelers. With passenger growth consistently outpacing facility growth, alternative boarding operations are an everyday necessity.



BEN LEICHTNER

Operations Manager Ben Leichner says.

“Operating 46 million annual passengers from an 80-gate facility with little to no room for gate expansion requires the airport to consider the use of bussing passengers to remotely parked aircraft,” Port

In 2015, the Port purchased three COBUS 3000 airside buses, each capable of accommodating about 100 passengers. More recently, it purchased four more similar vehicles scheduled for delivery in June.



DON FRASSETTO

the highest level of comfort and security, says Don Frassetto, president of COBUS Industries.

Leichner notes that the Port works diligently to lead the industry in adopting technologies that can contribute to improving facility utilization, safety and passenger experience. “Bus gates” and remote passenger hardstands are assets that closely align with those goals and help SEA operate safely and efficiently out of limited facilities, he explains.

To enhance the safety and comfort of travelers arriving or departing at remote hardstands, the airport uses mobile

The new buses include passenger information systems, flight destination displays and closed-circuit televisions—all in an effort to ease passenger transportation within the airport and provide

passenger boarding ramps that are covered and lit.

In mid-May, SEA was using two units from Aviramp Ltd.: one Continental-757 model, which is capable of handling aircraft ranging from an Embraer 170 to a Boeing 757, and one International model, which is capable of handling Airbus A320s to A380s. The airport has also ordered another three Continental-757s and one more International model, for delivery next year. According to Leischner, the airport anticipates needing a total of 11 mobile boarding ramps to support projected hardstand operations.

Custom Specifications

Terri Smart-Jewkes, global sales and marketing director for Aviramp, notes that the company's mobile ramps are



TERRI SMART-JEWKES

customizable, and the firm works with each airport to ensure that the equipment meets its specific operational needs.

SEA, for instance, specified the following requirements:

- mobility for flexible operations on a congested ramp;
- weather protection;
- safety features such as LED pathway lighting, handrails and minimal trip hazards; and
- functionality to allow towing and operation by diesel motor for docking of aircraft.

Leischner emphasizes that SEA is committed to providing all passengers with the highest level of customer service, whether they arrive or depart directly from the terminal or at a remote parking location. Covered mobile boarding ramps allow passengers to avoid stairs and exposure to the elements, he explains.

Each of the Aviramp units deployed at SEA includes a clear/tinted polycarbonate

plastic covering with an expanding canvas canopy to protect the aircraft galley and passengers from inclement weather.

Continued Need

With even more passengers expected in coming years, mobile boarding ramps and airside buses will likely be important tools at SEA for the foreseeable future. "[They provide] valuable gate capacity during peak periods of operation," Leischner explains.

Master planning is ongoing, but major gate expansion is not expected until around 2029. Meanwhile, forecasters predict continued traffic growth—66 million annual passengers by 2034.

Efficient and comfortable hardstand operations could also prove pivotal during SEA's upcoming capital improvement program, which could require the temporary closure of parts of the terminal. "While we are busy today, it will only get worse once we close gates during construction of expanded facilities," predicts Leischner.

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Engaging internal and external stakeholders early in the decision-making process has been critical for coping with gate constraints, he notes. “A collaborative approach with airlines and tenants is important in finding sustainable solutions,” he explains. “Providing a world-class remote passenger hardstand operation is important to the airlines operating into and out of Seattle.”

Island Ease

Cancun International Airport (CUN) has eight Aviramp units at work on its ramp—seven Continental models and one International. The airport, operated by Grupo Aeroportuario del Sureste (ASUR), primarily uses the ramps to assist travelers with special needs, notes Airport Director Carlos Trueba Coll.

“They provide excellent support facilitating the embarking and disembarking of passengers, especially those with disabilities,” he explains.

Already well known as a vacation destination, Cancun is also emerging as a popular market for medical tourism. According to surveys conducted by local hotel associations, about 12% of CUN passengers are older than 60. “Therefore, and naturally, it is expected to have an increase in the number of passengers with [additional] needs,” Trueba Coll says.



Airside passenger buses help SEA cope with limited gate availability.

Terri Smart-Jewkes notes that the gradual slopes on Aviramp products allow passengers to board and disembark safely and more quickly than other devices. “Air stairs can often be a safety challenge for even the most able-bodied passengers,” she remarks. “Improved safety and operational efficiency work hand-in-hand.”

According to Trueba Coll, CUN specifically searched for mobile boarding ramps that would fulfill international standards for use by travelers with physical disabilities; but the airport also prioritized other factors, such as reliability, operability, maintenance ease and low acquisition cost. ✈️



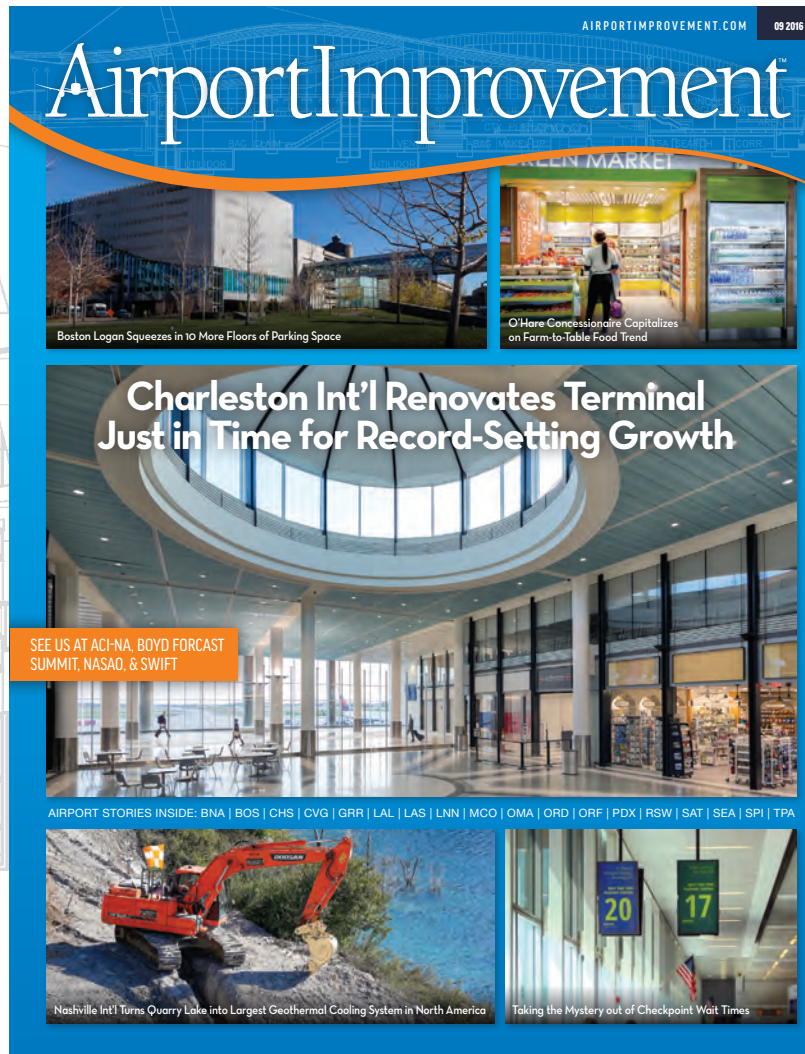
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Oakland Int'l Dramatically Increases International

In the last year, Oakland International Airport (OAK) has increased its international traffic by a whopping 73%. That's no easy task—especially given its location directly across the bay from San Francisco International Airport and about 35 miles north of Norman Y. Mineta San Jose International Airport.



BRYANT FRANCIS

“We are obviously in a very competitive international market,” says Bryant L. Francis, OAK’s director of aviation. “We believe our airport offers several distinct advantages, and we are working hard to market those.”

For passengers departing from the East Bay area, OAK stresses its proximity and convenience. For arriving passengers, it emphasizes connectivity. “Inbound passengers from overseas can land in Oakland, and take rapid transit to downtown San Francisco in only 30

minutes,” explains Francis. “If they want to rent a car and visit Napa Valley or Lake Tahoe, they are an hour closer to those destinations if they arrive in Oakland.”

When Francis joined OAK in March 2016, the airport had a few carriers that had been serving select international markets for several years, but he saw considerable potential for expansion, especially to Europe. “When I arrived, there was already great momentum for international travel,” he reflects. “Only one month following my arrival, Norwegian Air started flying to Gatwick. They had already been flying to Oslo and Stockholm for several years. Volaris had been here for seven years; and Azores Airlines has serviced Oakland for 25 years.”

In order to expand international service, Francis knew the airport had to increase its capacity to handle more aircraft and passengers. Airside, OAK had sufficient runway length and two gates with loading bridges that could handle any-size aircraft. But the cramped terminals were another matter, he notes.

OAK consequently launched a \$40 million construction project in August 2016 to expand and renovate its International Arrivals Building in Terminal 1. Improvements will include:

- a new baggage carousel;
- interior design changes to create a more pleasant, modern environment;
- reconfigured offices for Customs and Border Protection services; and
- larger, more efficient primary screening operations, including expanded use of automated passport control kiosks.



Service & Plans for Even More

BY MIKE SCHWANZ

With contractors scheduled to wrap up by mid-year, most of the construction and renovation work is already finished. When completed, the new facility will increase efficiency and modernization for OAK as it expands its international operations, Francis explains. "Current operations are limited to one 787 aircraft (300 passengers). However, with the expanded facility, two 787 aircraft will be able to be processed simultaneously."

Screening operations for arriving international passengers will be housed in a new building addition that provides more room for queuing and processing. The airport is also increasing self-service options by installing eight more BORDERXPRESS™ kiosks, bringing its total to 16. Developed by a branch of the

Vancouver Airport Authority, the automated passport control system allows travelers to complete data-entry functions themselves at kiosks. The system automatically sends the encrypted information to U.S. Customs & Border Protection for review, and within seconds, travelers receive a receipt that they then present to a Customs officer for verification.

Work crews made room for the kiosks and other processing enhancements by modifying passenger boarding bridges, aircraft parking positions, fuel pits, adjacent apron and taxiways.

New Lounge

Inside the terminal, lack of a high-end lounge had previously been a glaring deficiency. "International passengers expect

to have access to a comfortable, quiet, full-service airport lounge, and we did not have one," says Francis. "Since none of the major airlines had a lounge here, we decided to open one that would be available to any traveler."

The Escape Lounge that OAK debuted late last fall with MAG USA has been popular from day one, he reports. "It has been very successful. Passengers with premium cabin tickets on Norwegian Air and British Airways can use it for free. Any other passenger can gain access by paying a \$45 fee at the door (or \$40 online with advance reservation)," Francis specifies.

Amenities include a menu featuring local specialties; a variety of complimentary alcoholic and non-alcoholic beverages; and free high-speed Wi-Fi. Furnishings were



I ✈️ OAK

FACTS&FIGURES

Project: Increasing Int'l Market Share

Location: Oakland (CA) Int'l Airport

2016 Volume: More than 12 million passengers

Key Improvements: Escape Lounge (for passengers on all airlines); \$40 million terminal expansion

Baggage Carousel: Vanderlande

Automated Passport Control Kiosks: BORDERXPRESS, by Vancouver Airport Authority

New Carriers in 2017: British Airways; Level

Other Airlines Adding Int'l Routes: Norwegian Air; Southwest

Marketing Focus: European visitors to Northern California; local residents living in the East Bay

Key Result: 73% increase in revenue from int'l traffic in just 1 year

selected for style and comfort, and flight information screens keep travelers updated about departure times and gate assignments.



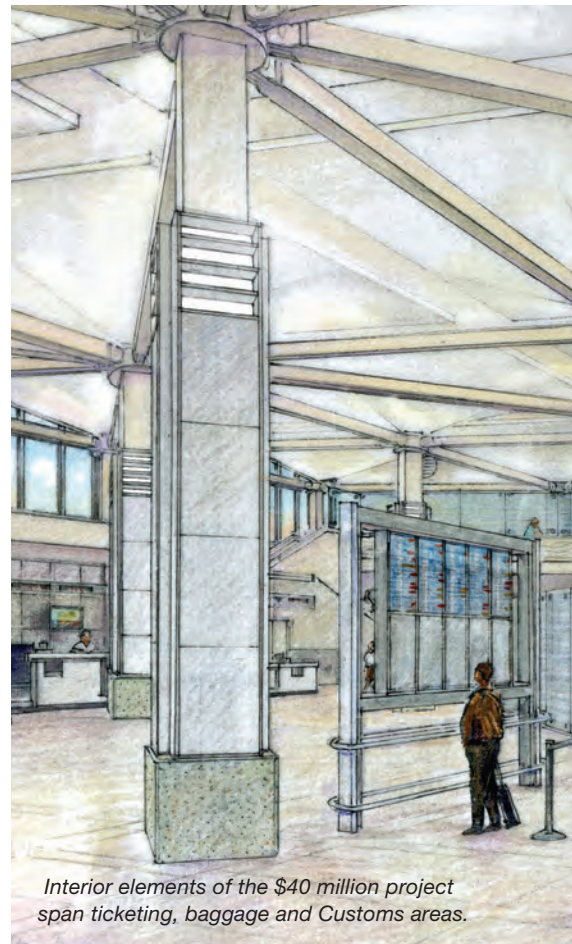
CHRIS PASTENA

Chris Pastena, a well-known chef and restaurateur in the Bay Area, oversees culinary operations. “Chris is very creative, and he specializes in offering very fresh dishes using local ingredients,” comments Rosemarie Andolino, president and chief executive officer for MAG USA. “Escape also offers a nice variety of California wines as well as local coffee brand RoastCo.”



ROSEMARIE ANDOLINO

The lounge was designed to consistently exude a quiet, comfortable atmosphere, she adds. “During our busiest days, we welcome more than 200 guests to the lounge,



Interior elements of the \$40 million project span ticketing, baggage and Customs areas.

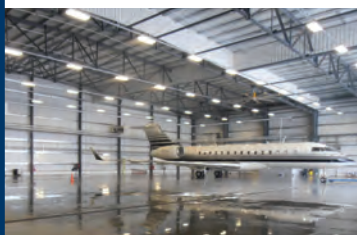
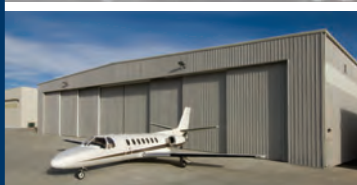
but of course, they are there at different times throughout the day. We can accommodate as many as 64 guests at one time with seating options that range from comfy lounge chairs to dining and bar eating. We have designed the lounge so people can relax or work in a quiet space.”

MAG USA spent more than \$1 million building the new lounge. And although it has been open for less than a year, Andolino is confident the company will quickly turn a profit. “It is just increasing in popularity,” she reports. “My main worry now is that we may eventually need more space.”

Like other concessioners, MAG USA pays a percentage of its profits to the airport.

Besides its agreements with Norwegian Air and British Airways, the company also works with local businesses to provide lounge access to employees. Andolino is especially pleased about a partnership with American Express that began in mid-May. “Our agreement allows Platinum Card holders free

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entrance to all three U.S. Escape lounges, as well as future lounges,” she explains.

The Escape Lounge at OAK is MAG USA’s third stateside location. The others are at Minneapolis International Airport (MSP) and Bradley International Airport (BDL) in Hartford, CT. “We try to tailor each lounge, since every airport is different,” comments Andolino. “We are flexible in order to make our product fit the space—no ‘one size fits all’ blueprint.”

Based on the company’s profitable lounge at Stansted Airport in England, Andolino feels that an Escape Lounge is a perfect fit for OAK because both are home to several low-cost airlines. “At Stansted, the main airline is Ryanair, a discount carrier,” she explains. “We learned that customers are value-conscious rather than cost-conscious, so they will treat themselves to a bit of luxury, such as our lounge.”

This past April, the Escape Lounges at OAK and BDL were named the “Best New Consumer Service Concept” by Airports Council International-North America.

“We are so delighted to have received that award,” Andolino says. “ACI is a great organization, and to be recognized among all those applications was quite an honor. It shows that we are on the right track.”

Local & Int’l Prospects

Opening the Escape Lounge was an important first step, but airport officials have more plans in the works. To help attract local residents, OAK is offering a special summer promotion: free parking for up to five days for passengers traveling to Europe on all nonstop flights.

Getting foreign travelers to enter the United States via OAK is another major goal, notes Marketing Director John Albrecht.



JOHN ALBRECHT



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Construction is scheduled to be complete by mid-year.



“Napa and Sonoma are having significant growth, with more than 4 million visitors a year,” he notes. “As the closest major airport, we are trying hard to tap into that market.”

Scandinavian passengers in particular seem to be embracing the airport. “They want to make the so-called ‘triangle trip’ of Los Angeles, San Francisco and Las Vegas. They want to see as much of the West as they can. OAK is a great place to start and end this trip,” explains Albrecht.

“Norwegian Air has structured its fares much like Southwest, in that its passengers can fly in to Oakland, and make the return from Los Angeles or Las Vegas without paying an extra fee. So people can rent a car at their arrival airport, drive around the West, and depart from another airport if they so desire.”

By the Numbers

So far, this has been a banner year at OAK, with international traffic increasing 73% from March 2016 to March 2017. Overall, the airport served more than 12 million passengers last year, and Francis expects that total to climb even higher this year.

The expansion of international traffic included several key steps:

- In late March, Norwegian Air added flights from OAK to Copenhagen. With existing service to Oslo and Stockholm, OAK is now the only Bay Area airport to service all three Scandinavian capitals. .

- In early June 2017, Norwegian started flying to Barcelona, Spain.
- Level, a Spanish newcomer and subsidiary of British Airways, also started service from OAK to Barcelona in early June.
- British Airways introduced service to London’s Gatwick Airport in late March.
- Last February, Southwest Airlines added service to two popular tourist destinations in Mexico: Los Cabos and Puerto Vallarta.
- In February 2018, Norwegian will begin service to Rome.

In the future, OAK hopes to attract Asian carriers as well. “Our eventual goal is to offer nonstop service to the Top 50 San Francisco Bay Area markets,” says Albrecht. “Asia is certainly included in that, and we aim to have service to Asia at some point. We feel we are the largest underserved market from the United States to China and several other countries in Asia.”

The terminal expansion project is helping current carriers realize that OAK is a viable option for new international service, he adds. “Above all, our ever-increasing passenger traffic shows that the demand for international travel to our airport is very high, and that is our best selling point. From a business standpoint, our airline partners can see the economic advantages of coming here.” ✈️

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Cold In-Place Pavement Recycling Saves Money & Appeals to Community at St. Simons Island

BY VICTORIA SOUKUP



FACTS&FIGURES

Project: Resurfacing Secondary Runway

Location: McKinnon St. Simons Island (GA) Airport

Cost: \$1.39 million

Primary Challenge: Financing, because secondary runway improvements do not qualify for Airport Improvement Program funds

Funding: GA Dept. of Transportation (75%); airport (25%)

Resurfacing Process: Cold In-Place Recycling

Project Duration: 4 months

Design, Construction Administration/ Inspection: RS&H

Geotechnical & Materials Testing: Ellis & Associates

Resident Inspection Support: Roberts Civil Engineering PC

Runway Rehab: Seaboard Construction Co.

Paving: Asphalt Paving Systems

Pavement Markings: Peek Pavement Markings

Associated Projects: Taxiway improvements; new lighting & signage

FAA Funding: Nearly \$442,000

New Cabling: 50,000 linear ft.

Signage/Lighting: 44 new runway lights; 112 taxiway lights; 28 lighted signs; new Precision Approach Path Indicator system; supplemental wind cone

Electrical: Trinity Electrical Services

Electrical Cabling: Draka

Lighting & Precision Approach Path Indicator: Airport Lighting Co.

Signage: Airfield Guidancesign Mfgs.

Wind Cone: Hali-Brite



Sitting on a small, exclusive island off the southeast coast of Georgia, McKinnon St. Simons Island Airport (SSI) serves an upscale population of private aircraft operators. Nevertheless, the airport faced a distinct financial quandary when it needed to resurface its badly deteriorating secondary runway: such projects are not eligible for FAA Airport Improvement Program funds.

With cost being the “driving factor” when reviewing its options, the airport decided to use cold in-place pavement recycling to resurface the 3,300-foot runway. Although the method is not often used for airports, project designer RS&H considered it the perfect solution for SSI. Recycling existing pavement



BRIAN THOMPSON

materials onsite made the project affordable *and* environmentally friendly—welcome attributes for the surrounding community, explains Brian Thompson, a senior aviation engineer with the consulting firm.

In total, the project cost \$1.39 million, with the Georgia Dept. of Transportation (GDOT) funding 75% and the airport paying for 25%.

For airport officials, keeping SSI's secondary runway operational was more than just important; it was necessary. “Wind conditions are more critical for smaller aircraft, and being on the ocean coast, there is a higher degree of various



ROBERT BURR

wind conditions,” explains Robert Burr, executive director of the Glynn County Airport Commission. “It is important to have at least two runways, affording four possible landing directions.”



STEVEN BRIAN

Fortunately, state transportation officials recognize the importance of the small, towerless facility. “With more than 90 based aircraft, SSI is one of Georgia's busiest general aviation airports and is a vital asset within Georgia's statewide aviation system,” says Steve Brian, GDOT's aviation program manager. “The airport supports a variety of flight operations, including government, charter, business and general aviation, and provides a seamless connection to regional, national and global economies. Maintaining the secondary runway pavement at this airport was vital to maximize operational flexibility in a coastal environment.”

Last year, SSI logged about 43,000 flight operations, largely for tourists drawn to the area's tony beaches, golf resorts and nature activities. Back in 2004, powerful world leaders converged on St. Simons Island for the G8 Summit.



The airport's primary runway (4-22) remained open while the secondary runway (16-34) was closed for renovations.

Cost-Effective & Green

Due to wide, full-depth cracking in the pavement, RS&H engineers knew that SSI's secondary runway needed more than just an asphalt overlay; but complete reconstruction was unaffordable and soil conditions were unsuitable for cement stabilization.

"We searched for more ideas at the request of the airport director and came across cold in-place recycling," Thompson relates. "Vendors who did this sort of work came out to look at the site and thought the runway was a good candidate."

Burr and other airport officials were pleased with the option. "Cold in-place recycling saves the contractor costs of removing milled material and trucking it off the island and bringing new material in," he explains. "It also cuts down on community impact by reducing the number of trucks. The [low] impact of construction activity on the tourist destination of the island had a very

favorable effect on our decision to use this process."

The process also eliminates the need for hot asphalt. "It's very similar to conventional asphalt, but there's no heating; so you're not using oil or materials to heat it," Thompson remarks. "That means you don't have the off-gassing that comes with it, or the smell."

GDOT was also comfortable with the recycling method. In fact, the department had previously approved and funded the technique at four other general aviation airports in Georgia. "Although it is not our traditional method of pavement rehabilitation, it has proven to be one of the best tools in our toolbox to rehabilitate pavements with severe longitudinal and transverse cracking and prevent future reflective cracking," says Brian.

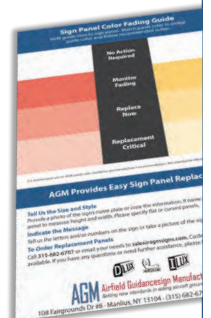
To execute in-place recycling at SSI, pavement was milled 5 inches deep and

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In addition to resurfacing the secondary runway, contractors applied fresh markings and installed new lights.



ejected into a trailing hopper, where it was mixed with a small amount of Portland cement and an unheated asphalt emulsion. That mixture was then fed into a paving machine, which rolled it into place to create a base course for the pavement. Machinery was connected as a single equipment train, notes Thompson.

Thompson considers cold in-place recycling a “win-win” for SSI, because it was environmentally friendly and reduced

costs. “The community was concerned about the environment, and we didn’t have any problems with [opposition to the project],” he reports. “It was all good public relations.”

Time Tradeoff

The downside of cold emulsion is that crews add water to the asphalt, and it takes four or five days after paving for the water to evaporate and the material to set, Thompson explains. The process also produces a base that is “fairly coarse,” with visible chunks. At SSI, contractors installed 2 inches of conventional asphalt on top of the recycled base course to smooth out the surface.

“Instead of doing 5 inches of asphalt, we only had to do 2,” reports Thompson. “That was a huge difference.”

Advantages aside, cold in-place recycling is not appropriate for airports with traffic from heavy aircraft. The weight limit for the resulting pavement is about 16,000 pounds, advises Thompson.

The project team encountered an additional challenge at SSI when engineers found areas with sand asphalt base layers—a material used several decades ago to save money. “The problem was that when we exposed the layers, they

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became brittle and turned back into sand,” Thompson explains. To correct the issue, crews removed the material and replaced it with standard aggregate before proceeding with the surface layer as planned.

While We’re at It


Although the resurfacing project was originally intended to be a stand-alone endeavor, new lighting and signage was also in the improvement pipeline for SSI’s secondary runway. Originally, airport officials thought these would be separate projects; but as planning for the resurfacing effort began, it started making sense to bundle them. “We delayed the cold in-place pavement recycling project to line up with the other two projects,” Thompson recalls. “We didn’t want to close the runway one year and then again the next year. Eventually, the projects got close enough where they would only be six months apart; so we pushed back the [resurfacing] project to make them all align.”

SSI closed its secondary runway from September 2016 to January 2017 for improvements, but its 5,500-foot primary runway remained open for traffic. Taxiways were adjusted to accommodate the temporary changes.

During the airfield lighting portion of the project, contractors installed more than 50,000 linear feet (about 9.5 miles) of cabling. Other elements included 44 new runway lights, 112 taxiway lights, 28 lighted signs, a new precision approach path indicator (PAPI) lighting system and a supplemental wind cone.

“All the signage is now upgraded to current standards,” Burr reports. “It’s a vast improvement over what we had before. Prior to this, taxiways and turn-offs were not identified. Now, we have good directional signage for pilots.”

Total cost for all three projects was \$2.47 million. FAA paid about \$442,000 for eligible taxiway improvements, lights and signage; GDOT contributed \$1.51 million; and the Glynn County Airport Commission paid nearly \$525,000.

In retrospect, Burr says he is pleased with the project because it allowed the airport to continue to operate two runways at an affordable cost. “Typical funding sources were not available for this project. This was the perfect opportunity to have cost savings and operational savings with the runway only being closed for four months,” he reflects. “We were able to put back in service an excellent runway, and pilots are now very complimentary of the runway we have in place.” 

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Quality Trumps Bid for Operation & Maintenance Contract at Orlando Int'l

BY NICOLE NELSON

FACTS&FIGURES

Project: Awarding Operation & Maintenance Contract

Location: Orlando Int'l Airport

Operator: Greater Orlando Aviation Authority

Contract Scope: Operation, maintenance & repair services for baggage handling system, passenger boarding bridges & ground support equipment

Method Used: Invitation to Negotiate

Point of Difference: Selection committee shortlisted & ranked top 3 candidates before seeing associated price quotes. After prices were revealed, it negotiated with final choice.

Process Duration: 17 months (12 to write proposal requirements; 5 to select contractor)


Winning Respondent: JSM & Associates

Subcontractors: Southeast Airport Services; JRS Industrial

Contract Terms: 3-year contract with options for two 3-year extensions

Approx. 3-year Contract Value: \$45.5 million

Start Date: April 1, 2017



When it comes to bidding airport work, airports and respondents alike know that the bottom line of a proposal usually seals the deal—and eventually the fate—of a potential contract.

So what's an airport to do when quotes come in alarmingly high or low?

At Orlando International (MCO), it redefined the bidding process.

The issue at hand was a \$45.5 million contract for the operation, maintenance and repair of MCO's baggage handling system, passenger boarding bridges and ground support equipment. When the three initial bids came in surprisingly off target (two high, and one low), the Greater Orlando Aviation Authority discarded all of them and approached its executive director, Phil Brown, about going back to the drawing board.

"We asked for permission to do an 'invitation to negotiate' because we wanted

the best company that we could get at the best price," explains Denise Schneider, the authority's assistant director of Purchasing and Material Control.



DENISE SCHNEIDER

Redefining Procurement

Like a "request for quote" or "request for proposal," an "invitation to negotiate" is a competitive solicitation for goods or services. Where the methods differ is that invitations to negotiate temporarily mask respondents' price quotes while other factors such as experience, special credentials and project strategies are considered. In other words, price was not factored into the award—only in the negotiation was the bottom line used as a starting point.

Schneider reports that the invitation to negotiate approach has trended throughout



Committee. It then narrowed the field to three finalists after another round of interviews and ranked the companies according to preference. Upon board approval of the rankings, the authority was authorized to negotiate with the top-ranked firm. After presentations, the evaluations of the three firms were adjusted to reflect the results of the presentations. When the top ranked firm was established, the committee then secured authority to begin negotiations with the top ranked firm.

“Price was never a factor in choosing the ranking of the companies,” Schneider explains, noting that all financial quotes stayed in sealed envelopes alongside the proposals. “After they were ranked, we opened the pricing only of the first three, and that was just to give us an idea of where we wanted to start our negotiation.”

Overall, the process took 17 months—one year to craft specific terms of the invitation and five months to select a provider.

JSM & Associates, a Florida-based engineering firm, was ultimately selected and approved to receive the \$45.4 million operations and maintenance contract, which became effective April 1. The initial contract is for three years, with two additional three-year options.

Merit vs. Money

JSM President John Majewski considers the invitation to negotiate process an innovative strategy that he expects to see again. “[It] gave us an opportunity to be selected exclusively on our qualifications and merit,” he comments.

Blair Cox, the company’s vice president, agrees that it is a novel approach to



BLAIR COX

the state of Florida for over a decade in the information technology sector, and she became familiar with the alternate procurement method when the authority used it with favorable results for a 2014 software contract.

With Brown’s approval, the authority opted to use the competitive invitation to negotiate process to award the contract for MCO’s baggage handling system, passenger boarding bridges and associated ground support equipment such as pre-conditioned air and ground power units.

Of the original six proposal qualifications submitted and evaluated, two were removed from the process for unresponsiveness or lack of minimum qualifications. The remaining four firms were further evaluated for interviews and presentations with the authority’s Concession and Procurement



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The new contract covers the operation and maintenance of MCO's baggage handling system, passenger boarding bridges and associated ground support equipment.

procurement. “We knew the Greater Orlando Aviation Authority had the intentions of trying to pick best value vs. awarding on price alone; but we didn’t really have a real good feel for how this was going to play out until we were thrust into it,” Cox adds.

As the incumbent provider of operations, maintenance and repair for the airport’s baggage handling system and passenger boarding bridges, JSM was bidding to continue its contracted responsibilities while also vying for a

much larger piece of the pie: the baggage handling contract held by Aircraft Service International Group. The bag jamming service in the north terminal complex was added to the contract along with the operations, maintenance and bag jamming services at the Remote Sorting Facility.

Cox’s interpretation of what was required for coverage, service levels and staffing levels netted a higher price than what JSM ended up negotiating.

“Once (the authority) had done all the evaluations and ranked everybody in

accordance with their evaluations, it then opened up the second envelope to look at pricing components for each of those bidders,” Cox explains. “JSM ended up slotted at No. 2—we were not the low, nor were we the high.

“At the end of the day, once we had agreed upon the service levels and the coverage levels that they were looking for, we were able to negotiate a price that matched the scope of services desired within the budget the authority established for the work.”

JSM for the Win

Tom Draper, director of airport operations, explains that a culmination of many factors lead to the authority's selection: "It was JSM's willingness from the very beginning to show how they wanted to incorporate themselves into the day-to-day operation and be a strong part of our organization; it was the amount of staffing that they had proposed for the job and the level of training that they were proposing; and then, it was also their small business subcontracts and how they were continuing to grow them individually and as businesses, to be more productive here at the airport."



TOM DRAPER

Draper also highlights the company's willingness to develop talent from within: "JSM was taking baggage handlers who were handling bag jams and starting to give them more duties, and they were also incorporating them into doing more mechanical things as they could get them trained and they offered them a lot more training programs."

The contract winner also incorporated subcontractors—Southeast Airport Services and JRS Industrial—into its proposal, he adds.

"JSM seemed to be an all-around positive fit for the aviation authority," summarizes Draper.

Collaborative Effort

As an operations man himself, Draper emphasizes the substantial internal collaboration needed behind the contractual transaction for MCO's ops environment.

"We work closely across all the department lines, and we are very close with Purchasing on all of our contracts and our agreements even after we get them signed," he explains. "We are always meeting with (Purchasing) just to make sure that we are all on pace and we are following all the rules, the regulations, and the guidelines in the contract. Purchasing understood what we were trying to do, and because we are Ops, we understood all the nuts and bolts about putting it together."

Looking back, Draper says advice from Purchasing and the overall collaboration between the two departments helped make the new contract process very successful. ✈️

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Northwest Florida Beaches Int'l Installs Drone Detection System

BY PAUL NOLAN



NORTHWEST FLORIDA
BEACHES INTERNATIONAL AIRPORT


FACTS&FIGURES

Project: Drone Detection System

Location: Northwest Florida Beaches Int'l Airport

System Supplier: DeTect

Cost: Prices for components range from \$5 for smartphone app to \$15,000 for radio frequency detection unit; high-end equipment is usually leased with monthly service package

 As the recreational drone craze continues to grow, the popular fad is literally hitting the radar of personnel charged with maintaining the safety and security of airports around the country.

Recent market research indicates that sales of drones within the United States more than doubled between February 2016 and February 2017. The FAA expects them to climb from 2.5 million this year to 7 million in 2020.

Increased flight time by unmanned aerial systems, commonly referred to as UAS, has airports across the United States and abroad scrambling to keep their airspace safe. Some are installing detection systems and developing high-tech response strategies. Northwest Florida Beaches International (ECP) in Panama City, FL, is one of those airports.



PARKER MCCLELLAN

“The concern for safety is the focus of every airport person, whether you are the airport director, an airport police officer or a maintenance person,” says ECP Executive Director Parker McClellan. “There are millions of drones now flying in the air, so these are clearly something we have become aware of.”

Fortunately for McClellan, one of the leading companies in drone detection radar is located in ECP’s own backyard. DeTect, based in Panama City, manufactures drone surveillance and interdiction systems designed specifically for airports and other security and surveillance applications.

The company started out in 2003 manufacturing radar units to detect and track small birds around airfields to decrease the risk of bird strikes. But these days, the multi-level DroneWatcher detection and defense system is its headline product. According to company personnel, it provides the highest level of detection and control available.

ECP installed the system earlier this year.

New Use For Existing Technology



GARY ANDREWS

Gary Andrews, general manager and chief executive officer at DeTect, notes that the basic technology of the company’s DroneWatcher system has existed for years. When drones began to emerge as a concern for airports and other facilities such as prisons, sports stadiums, nuclear power plants and government buildings, DeTect developed a long-range radio frequency scanner that detects the frequency and identifies the “control data packets” used to fly drones.

“Through our bird radar business, we developed special artificial intelligent algorithms into the system that allow us to classify bird targets in real time,” explains Andrews. “We can use that same technology for drones—taking all of these targets that we’re seeing in an environment and [applying] real-time filtering to reject the false positive alerts we’ll see from the bird targets and focus only on the drones. The same system can be dual-purpose, by providing one stream of data for birds and wildlife and a separate stream for drone activity.”

Multiple Options

The DroneWatcher system includes three levels of products that can operate independently or together. The first is the DroneWatcher App, which is designed to detect 95% of non-encrypted, consumer-grade drones (the majority of what is being sold to hobbyists). The company offers a basic version of the app for free and a full version for \$5.

Airport personnel can load the app on Android smartphones or tablets (it is not compatible with Apple products) and let it run in the background during their workday. The app delivers drone incursion alerts via audible alarms and text messages. The range of detection is affected by several variables such as Wi-Fi signal strength, site conditions and ambient interferences; but DeTect personnel say the system generally scans about one-half mile of airspace.

The system’s second level, DroneWatcherRF (for radio frequency) monitors the radio frequency spectrum to identify drone “signatures” (electromagnetic fingerprints). It is designed to detect more than 99% of commercially available drones on the market within a radius of up to two miles. Because DeTect maintains and continually updates a database of the unique signatures used by manufacturers, the system can immediately identify what type of drone is detected. Audio and visual alerts are delivered on the unit display and via text message.

Individual DroneWatcherRF units cost about \$15,000, but most customers rent a system with a monthly service package rather than purchasing it outright.

FAA Drone Rules

The FAA Modernization and Reauthorization Act of 2012 requires hobbyist drone operators to contact airport management or the pertinent air traffic control tower prior to flying a drone within five miles of an airport.

At first blush, this sounds easy enough. However, increased interest in flying drones as a hobby has people discovering just how many airports there are. According to a report by the Aircraft Owners and Pilots Association (AOPA), about 70% of the U.S. population lives within 20 miles of one of the country's 30 major airports. Add in more than 13,000 smaller U.S. airports, and a large number of drone hobbyists live or work within five miles of an airport.

The FAA consequently provides a map to help drone hobbyists determine the location of airports and restricted airspace at KnowBeforeYouFly.org/air-space-map. And contact information for airport personnel is publically available. Because contact information is not as readily available for air traffic control towers, AOPA recommends asking airport management for it.

Beyond the airport/tower notification requirement, FAA rules stipulate that a drone cannot weigh more than 55 pounds, and operators must keep drones in their visual line of sight at all times. Additionally, unmanned aerial systems must also always yield the right of way to manned aircraft.



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The third level of the system is DroneWatcher DSR (drone surveillance radar). It is designed specifically to detect small, low-flying targets that are not being controlled by radio frequency. According to company personnel, DSR is able to detect all consumer drones as well as military cooperative and non-cooperative drones within line sight and at longer ranges beyond two miles. The DroneWatcher DSR detects and tracks programmed drones flying on autopilot that are not detectable by DroneWatcher APP and RF.

“The idea behind our system is that the end user can use whatever level of the technology they want to get to the security level they need to achieve,” says Andrews.

Assessing the Threat

McClellan reports that ECP has not detected much drone activity around the airport since installing the system. He suspects the airport generally avoids such traffic due to its rural location about 10 miles northwest of Panama City Beach, a popular vacation destination. Nevertheless, he says he is glad to have the system in place because threats posed by drones could change rapidly.


“I am a firm believer in staying on the leading edge and maximizing all of the tools that are available to operators of airports and airlines to enhance the level of safety,” he stresses. “Right now, the main concern is hobbyists. Anytime something hits an airplane, whether it’s

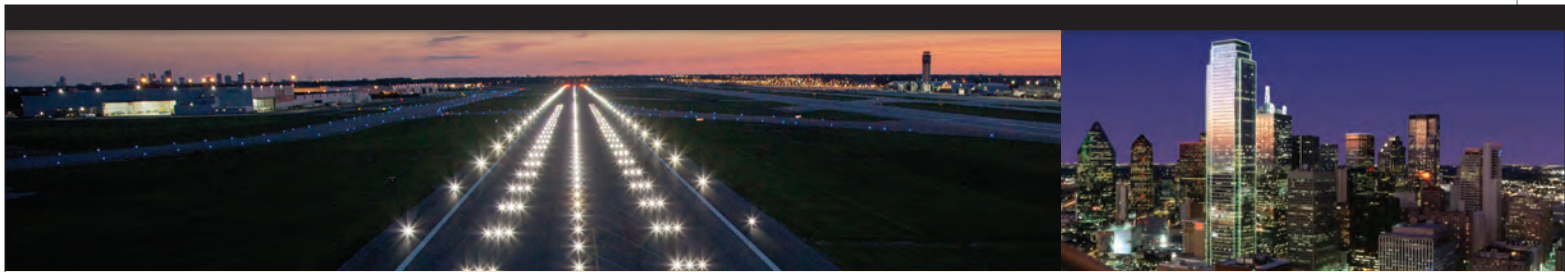
an engine, a wing or goes through the windscreen of an airplane, it can create life-safety issues for a pilot and the crew and passengers. That’s true whether it’s a Cessna 150, an experimental aircraft or a Boeing 737.”

But these days, terrorism is a fact of life as well. ECP’s drone detection system allows the airport to be on alert around-the-clock and operate the safest possible facility, he notes. “If there was a drone flying in one of our approach zones where it could potentially have an adverse effect on the operations of the airport, we would send our airport police officers out to alert them they are in violation of FAA laws.” (See sidebar on Page 60 for more details.)

Andrews notes that the full DroneWatcher system can be installed in less than a day, and minimal training is necessary for airport personnel to operate it. He cautions airport managers who are shopping for a drone detection system to choose one that will remain current with changing technology. Some systems will not, he remarks.

The FAA continues to test drone detection technology to develop minimum performance standards for detection at U.S. airports.

“Buyers of this technology need to make sure that whatever they acquire today is going to meet their requirements six months and two or three years down the road,” Andrews says. “We really are in the infancy of this issue and the real threat it poses to airports.” 



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Connectivity Options Make it Easier to Access the Airport & Community



As a critical component of America's overall transportation network, air travel must be strong, safe and well connected to where we work, live and play. With airline travel expected to increase by more than 50% in the next 20 years, continuing to transform U.S. airports into efficient *intermodal* transportation centers is increasingly important. Planning must be accelerated and funding put in place to implement improved connectivity between airports and the communities they serve.

Increased traffic congestion getting to airports is one of the top complaints passengers have about air travel. A new public opinion survey by HNTB, *America THINKS: Airport Terminals – 2017*, found that the majority of travelers (56%) arrive at the airport terminal already frustrated due to vehicle traffic. Overcrowded curbside areas, scarce parking, and long lines at check-in areas and screening checkpoints are other primary factors that cause anxiety about air travel. Travelers want a seamless experience from their front door to the aircraft door that intermodal connectivity provides.

Airport operators, airlines, municipalities and transportation consultants are working together to develop solutions that include subway/rail connections, automated people movers, personal rapid transit, purpose built ground shuttles and, coming soon, autonomous vehicles.



LADDIE IRION

Laddie Irion has more than three decades of experience in strategic management, business development and leadership positions in the aviation industry. He has worked on more than 100 aviation and airport projects in the U.S. and abroad. Currently, he serves as senior vice president, national aviation market sector leader for HNTB Corporation.

Adding connections to local and regional rail networks at U.S. airports is an effective solution that is gaining popularity for relieving roadway congestion. In fact, HNTB's recent survey indicates that 84% of respondents would actually prefer using rail to get to and from the airport if it were more effective than automobile travel.

Some U.S. airports already have connections to local and regional rail systems, and others are in the process of improving connectivity with other transit modes such as automated people movers that transfer passengers from terminals to other landside airport facilities, and connection to metropolitan transportation networks.

Intermodal transit facilities such as ground transportation centers can serve as hubs for connecting passengers with a variety of surface transportation options. Integrated multimodal transit options, intelligent design and innovative technology can create a seamless travel experience from landside to airside, presenting an opportunity for all stakeholders to come together to plan and design better options.

Improved connectivity between airports and the communities they serve is only one part of the needs associated with airport development. With an estimated 1.2 billion air travelers expected by the year 2035, the need for world-class U.S. airports is real. Convenient access to first-class facilities and transit connectivity are the overwhelming priorities for these travelers.

Working collaboratively, airports, transit agencies and cities can map out long-range infrastructure improvement plans that not only guarantee an enhanced passenger travel experience, but also create jobs, spur economic development, improve quality of life and increase American competitiveness in the international marketplace.

A recent survey by Airports Council International-North America projects about \$100 billion of needed airport development projects in North America between 2017 and 2021. To make these development projects a reality, we will need sustainable and reliable funding mechanisms from both the public and private sector. It is imperative that industry and government work together to make that happen. 

A comprehensive approach to preventing criminal and terrorist acts by employees in airports must strike the right balance between people, process and technology to support greater security without sacrificing employee efficiency.

Addressing the Gap in Employee Screening

Gaps in Employee screening and perimeter security in Aviation

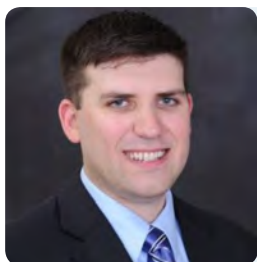
Background checks, access control and limited entrances to secure areas have continued to be the main tools to address the insider threat in aviation security. Efforts to institute employee security screening in airports more widely have run into concerns about increased costs and reduced employee efficiency.

Employee screening needs to sit within an operating framework. There are already parts of the solution in existence, however the current measures have been demonstrated to be incomplete. A layered security approach ensures the right measures are employed in time and space to achieve an effective deterrent, detection and identification capability. This requires people, process and technology all working towards the same end state ensuring there are no gaps in the combination of measures employed.

What is needed is a truly comprehensive approach that includes enhanced screening with the effective use of threat detection technology. Smiths Detection has provided security at the highest level for more than 40 years and understands the complexity of airport operations. In our experience, smarter security solutions help airports work more securely and efficiently despite changing threats and rising traveler and employee numbers.

Seeing the Threat

Smiths Detection offers an unparalleled array of trace, x-ray, and perimeter screening solutions to secure airports inside and out. Visit www.smithsdetection.com to learn more.



Luke Olsen

For a customized consultation on how Smiths Detection can help secure your facility contact our Insider Threat team:

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