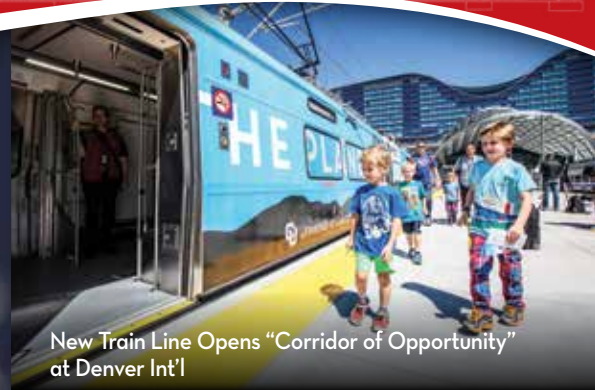


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Cleveland Hopkins Accelerates Terminal Updates for Republican Convention

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- Promote events / sell advertising



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- Make adjustments from your tablet or smart phone
- Track customer behavior
- Detailed analytics



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Where to Turn?

Like many people of our vintage, my wife is handling more and more of her aging mother's affairs. After her recent move into an assisted care facility, there was a lot of follow-up paperwork. Our experience changing my mother-in-law's address with one insurance carrier was particularly frustrating.

We had a statement with a phone number to call. Great. But when we called, all we got was an automated response—no person, just a phone tree of choices, none of which included changing an address. To make matters worse, the phone system did not include an option to speak to a person, which left us feeling as though the insurance company really didn't want to hear from us. I'm sure there is a change of addresses form somewhere on the insurance company's website...if you know where to look for it. Unfortunately we didn't, and it was difficult finding someone who could help.

So what does this have to do with airports? Think about yours. Sure, you may have an information desk, but do the attendants ever go out into the terminal, mingle and proactively ask visitors if they need help?

What about wayfinding? Is your signage intuitive? Has it kept up with changes to your facility, or is the current signage obsolete?

How about your website? Does it contain parking information, allow visitors to make reservations or provide updates about which lots are full? Or, even more basic, does your website contain a list of people and departments, so passengers and community members know who to call or e-mail with questions and comments? All this information probably resides somewhere, but it doesn't do any good if people have to hunt for it. An objective review may indicate that changes are needed.

There are plenty of passenger touch-points where airports have little or no influence—baggage fees, overbooked flights, long waits at TSA checkpoints, etc. Doesn't it make sense to excel at the things we can control?

Paul



PAUL BOWERS, PUBLISHER

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Cleveland Hopkins Accelerates Terminal Updates for Republican Convention

BY VICTORIA SOUKUP

When throngs of red, white and blue politicians descend on Cleveland in July for the Republican National Convention, Cleveland Hopkins International Airport (CLE) will greet them with a newly updated ticket lobby and other recent renovations. Between delegates, staffers, journalists, lobbyists and others, the city is expecting 50,000 extra visitors.

Two years ago, CLE was in the final planning stages of a much-needed facelift to its aging ticketing hall and exterior façade when the Republican National Committee announced that its 2016 national convention would be held in Cleveland. At that point, airport officials realized they had one and only one option: complete the \$22.6 million project on time.

As it turns out, they actually finished three weeks earlier than anticipated and on budget.

“It was an enormous commitment among all parties to get everything done on time,” reflects Fred Szabo, the airport’s interim director. “But we also wanted to get everything accomplished with time to spare so we could work out any remaining issues and be prepared for the convention.”

With the convention still pending, CLE is already receiving extremely positive feedback. “We have a significantly improved look,” reports Szabo.

Previously, the airport was functionally simple to navigate but in dire need of an update, he explains. The exterior façade, where passengers enter for departures, was drab and offered little protection from the elements. In addition, the 30,000-square-foot



FRED SZABO



ticketing hall appeared tired and uninviting. “Hopkins is an older airport, and although it always had a reputation of being easy to get through, it was going on 50 to 60 years old,” Szabo notes. “The finish [materials] were worn, and the types of finishes and coloring were dated. We wanted to upgrade the image.”

Airport personnel and architects, designers and engineers from Leo A Daly focused on two objectives: enhancing the passenger experience and improving the ticketing hall’s operational performance. “The airport had several things that weren’t working from the passengers’ perspective, like curbside weather protection and visibility into the building, which affects wayfinding,” explains Jordan Taylor, the partner who led the project for Daly.

Designers specified floor-to-ceiling glazing (glass) on the front of the ticketing hall to provide better visibility from the curb and allow more light to stream into the building. “It’s nice when you’re standing at the curb and you can look into the ticketing hall and see where you’re going,” Taylor says. “The additional daylight offers a much more pleasant experience.”



JORDAN TAYLOR

A new 560-square-foot steel canopy extension was installed over the drop-off area to shelter passengers as they exit vehicles and enter the terminal. Skylights are embedded in the exterior canopy, which extends about 12 feet farther than the previous façade. “These skylights bring additional daylight to the skywalk

FACTS & FIGURES

Projects: Ticketing Hall Renovations; New Exterior Canopy

Location: Cleveland Hopkins Int’l Airport

Cost: \$22.6 million

Key Deadline: Republican National Convention, July 18-21

Prime Architect: Leo A Daly

Associate Architect: Van Auken Akins

Contractor: Cleveland Construction

Revolving Doors: Besam

Sliding Glass Doors: Assa-Abloy

Civil/Structural: C&S Engineers

MEP: WRL Engineers

Cost Estimating: McGuinnessUnlimited

Hazardous Materials Testing: Solar Testing Laboratories

Constructability & Value Engineering Reviews: ConstructAbility

on the departure level, while at the same time providing cover for travelers,” explains Renato Camacho, the airport’s chief of planning and engineering.

Operationally, the airport sought to reduce the energy needed for lighting and heating/cooling. The large glass curtain wall provides “free” daytime light, and interior fixtures were upgraded with new energy-efficient LED lighting.

Reducing Temperature Fluctuations

In the ticketing hall, CLE replaced eight electronic sliding glass doors with six revolving doors, at a cost of nearly \$92,000 apiece. Because the ticketing hall is narrow, the sliding doors continually opened and closed as people walked by, letting in bitterly cold drafts in the winter and gusts of hot air during summer. The new 16-foot diameter revolving doors greatly reduce temperature fluctuations.

“Those revolving doors might seem like a customer convenience, but they really do have a significant impact on the heating and cooling, because the temperature stays more consistent in the terminal,” says Szabo. “During a significant cold snap, cold air would blow through the terminal, causing inside temperatures to plummet.”

Taylor says the revolving doors maintain an effective weather seal even while visitors come and go, eliminating the “complete openness” the sliding doors caused.

To create a more open feeling, designers raised the hall’s ceiling by about 4 feet, and replaced the old drywall with a painted metal ceiling. “We use metal because it goes up quickly, is very durable and [requires] low maintenance,” explains Taylor. “From a design standpoint, it gives you a little bit more of a sparkle than a painted drywall ceiling. It livens up the space, which is one of the things we like about it.”

CLE’s Camacho agrees, noting that the previous 10-foot ceilings were outdated and inefficient. “Now, we have 14 to 15 feet of natural light coming through that area and it is angled and helps with lighting and energy efficiency,” he comments.



RENATO CAMACHO

May vs. June

Problem-solving became the order of the day when city officials moved the project’s original June 21 completion date up three weeks to create more of a safety cushion before traffic began for the mid-July convention. “We had been on schedule up until that point, but when the city decided to accelerate, we had to come up with alternative means to accommodate that,” recalls Michael Swalley, project manager for Cleveland Construction.



MICHAEL SWALLEY

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Contractors had to accelerate their work schedules when city officials moved the project's completion date up three weeks.

Planners consequently divided the project into two phases, allowing contractors to focus first on the northern exterior and southern interior, and then complete the southern exterior and northern interior. Ticket counters and equipment were relocated to make room for crews working on the southern interior. But when work shifted to the northern interior, Cleveland Construction opted to leave all ticket counters in place and install scaffolding. Crews worked above the ticket counters as agents continued to process passengers, saving time and eliminating the need to redirect customers.

The entire north end of the hall—from Southwest Airlines' ticket counters to American Airlines'—were under scaffolding. "That enabled the airlines to stay where they were and we didn't have any downtime due to moving things around," Swalley recounts. "We just worked out over the top of them."

Crews also installed components for a new, more energy-efficient heating/venting/air conditioning system in the ticketing hall. The installation of new terrazzo flooring is scheduled at a later date.



Renovations in the lower-level baggage area included LED lighting, updated column wraps, new aluminum composite paneled ceilings and a metal curtain wall system. The airport also installed 14 newer-technology sliding glass exit doors in the area's seven vestibules for a total cost of \$110,000. Revolving doors were not necessary in the lower level because temperature fluctuations are not as dramatic as in the ticketing hall, explains Taylor.

Other Improvements

In addition to the recent ticketing hall and terminal façade renovations, CLE installed metal canopies over two of the airport's four surface parking lots in time for the Republican National Convention. One of the canopies includes solar panels that will

cover the cost of lighting both lots, notes Camacho. In total, the canopy project cost \$9.78 million.

A \$1.5 million signage project is also currently underway at CLE and Cleveland Burke Lakefront Airport, which is primarily used by private and corporate aircraft. Phase 1 of the project is scheduled to be complete before the convention. It includes new signage in the ticketing hall, on airport roadways and to direct travelers to the off-airport rental car facility. "Based on previous customer feedback, we needed to address our signage," Szabo explains. "People want an uncluttered and simple route through the airport, (and) we want to be sure there is not an excessive amount of signage. We want very simple, straightforward and consistent directions, so people can find their way through the airport."



Given its variety of pre-convention projects, CLE experienced some growing pains during construction and officials fielded complaints from passengers and airlines while work crews made improvements. "The big thing was that we had to keep the airport operational," Szabo reflects. "We certainly did have a period of discomfort, but that was really only a temporary inconvenience. The goal was to go through a construction period and minimize the problems. We've done that, and the end result was worth it."

One project scheduled to begin after the Republican National Convention is the installation of a \$26.8 million in-line baggage system. The new system will move all of the screening equipment for checked baggage that is currently in CLE's ticketing hall to holdrooms behind the airline ticket counters and will be 90% funded by TSA. ✈️

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New Software Adds Mobile Connection for Ops Personnel at Los Angeles Int'l

BY RONNIE GARRETT



Los Angeles
World Airports

FACTS&FIGURES

Project: Interoperable Mobile Situational Awareness Software System

Location: Los Angeles Int'l Airport

Operations & Maintenance Vendor: Siemens

Engineering Firm: AECOM

Security Software: Qognify

Cost: \$2.1 million

Key Benefits: Enhanced situational awareness; improved response time; support for Part 139 inspections & associated reports



Although the 2013 shooting incident at Los Angeles International Airport (LAX) was resolved in just three minutes, six people were wounded and a TSA officer lost his life. The tragic event left permanent scars on the airport...and also prompted an extensive review of response operations at the facility that serves more than 70 million people annually.

Efforts to improve situational awareness, provide a common operating picture and enhance emergency operations in the field took center stage. Many focused on LAX's Airport Response Coordination Center (ARCC), a facility created in 2010 to improve situational awareness throughout the property

by integrating multiple functions into a single command center.

Siemens, the airport's technology operations and maintenance vendor, played a key role in the center's original development and post-incident improvement efforts. Kyle Heaton,



KYLE HEATON

the company's business development manager for U.S. airports, has been a part of the ongoing process since the facility's inception. Before LAX added the center, "all departments—operations, facilities, police, fire—were spread out in

This chain of events confirmed the importance of a \$2.1 million enhancement to Situator, the situation and video management software from Qognify (formerly NICE Security) LAX was using in its ARCC. The enhancement extends eGIS (enterprise geographic information system) and situation management capabilities to the field, which provides a common operating picture for irregular operations, emergency events, Part 139 inspections, etc.—all via mobile devices.

The map in the GIS software is key to boosting collaboration, because it enables responders and ARCC personnel to exchange visual information using an aerial photo or facility diagram as a backdrop. Users can visualize the same incident on a map and engage in interactive dialogue via the comments log as the incident unfolds. Response plans can be shared by annotating them on the system, and personnel can mark a perimeter and highlight evacuation routes by simply drawing on the map.



different rooms and buildings throughout the airport,” he recalls. “The ARCC got everyone in the same room.”

The ARCC solved many problems by helping managers coordinate field personnel performing landside and airside operations around the clock; but it didn’t fix everything, explains Heaton. After the active shooter incident, Jacqueline Yaft, deputy executive director for Operations and Emergency Management at Los Angeles World Airports (LAWA) at the time, concluded that field operations personnel lacked immediate access to situational awareness and a common operating picture—a condition LAX officials deemed unacceptable.



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The application also takes advantage of inherent iPad features like voice-to-text, so users can enter comments by speaking instead of typing.



MELODIE JOHNSON

“The purpose of the ARCC was to establish a central location for all the groups responsible for airport operations. That was the primary focus,” reviews Melodie Johnson, division director of airport and public safety systems at LAX. “But then, we needed to provide the tools to facilitate a common operating picture and situational awareness.”

Finding Info

When the airport purchased Situator for its ARCC in 2011, the new technology allowed LAX to integrate security and operational intelligence and generate automated adaptive response plans. “Situator provided a solution that allowed officials to document their standard operating procedures [SOPs] electronically to manage any incident on the airport campus,” Johnson comments. “It gave them consistency with how each particular incident was managed.”

Importantly, the system provided field personnel involved with an incident a checklist of tasks to be performed; but airport officials weren’t impressed with how the information was delivered. Operations personnel used two-way radios and telephones to contact the ARCC to report incidents, document where they were taking place, provide updates, etc. Operations superintendents at the ARCC would then assign technicians to handle the situation via more phone calls or radio communications.

“No maps were used to communicate location; it was all done verbally,” recalls Johnson. Dominic Nessi, the airport’s chief information officer at the time, believed LAX needed a tool that allowed field personnel to communicate with the ARCC via mobile technology. That’s when the airport partnered with Qognify and aviation engineering firm AECOM to devise a GIS-based mobile solution. Qognify and AECOM determined that the best way to provide field personnel with remote access to information was to leverage LAX’s existing incident management system and integrate it with ArcGIS for Server, which allows maps and geographic information to be accessed from mobile devices.

The resulting project, funded from LAX’s operating budget, also added the ability to capture information about airport tenants within the facility. Now, if there is an emergency or need for evacuation, operations staff can readily identify which leaseholders are affected and notify them quickly. “They needed a GIS tool to identify who was in a lease and have a visual of their space,” Johnson explains.

The new system also facilitates Part 139 inspections that LAX crews perform three times per day. Previously, when operations personnel inspected the airfield, they contacted the facility maintenance department to report discrepancies in striping, lighting, pavement conditions and other airfield elements. With recent enhancements to LAX’s software, crews can now use electronic tablets to initiate work orders or post service

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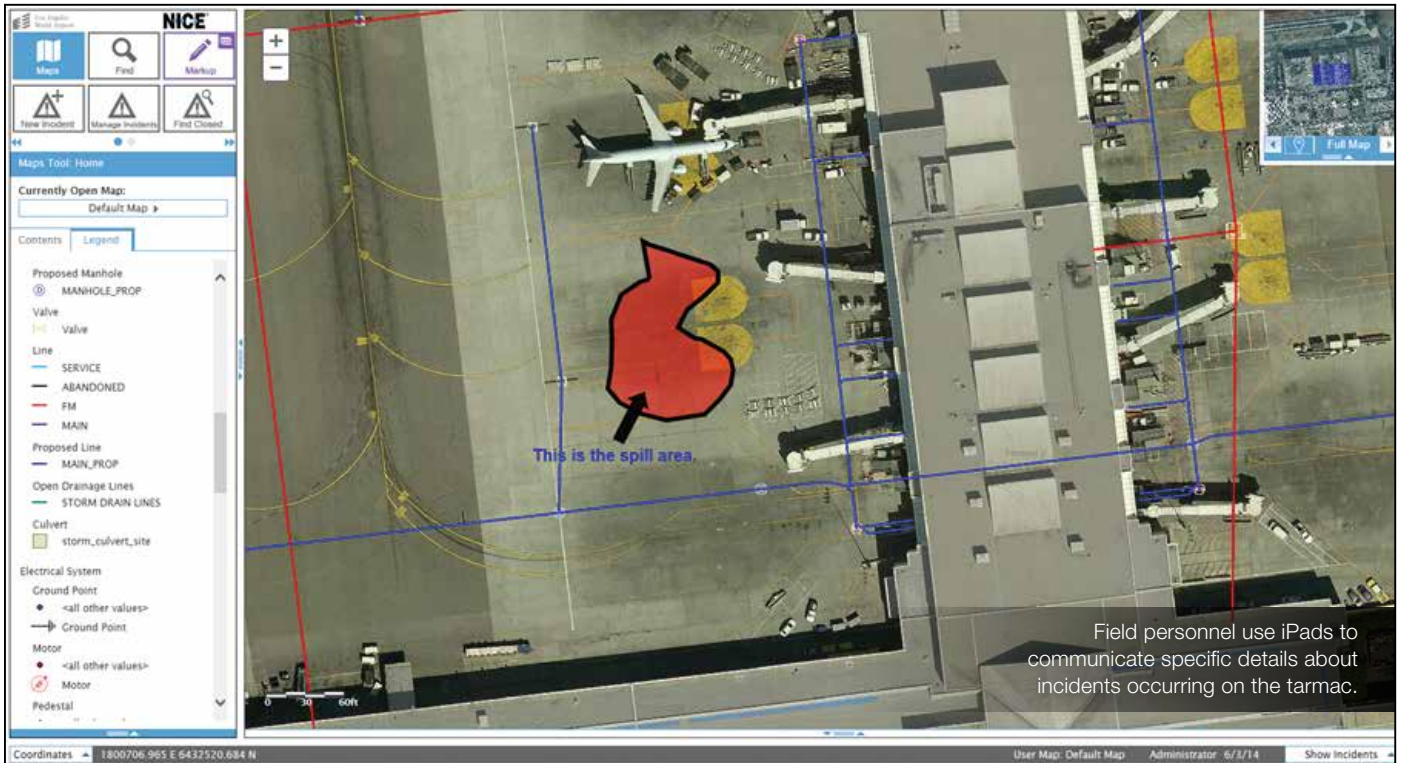
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Field personnel use iPads to communicate specific details about incidents occurring on the tarmac.

requests directly to Maximo, the airport's work order management software.

Leveraging GIS

It took designers two years to create Qognify Situator eGIS Web Application, the enterprise GIS program that adds spatial and Web capabilities to the company's Situator program.



DANNY PELEG

"Most airports have GIS. You need to know where everything is located," says Danny Peleg, director of Business Development at Qognify. He cites the

example of GIS helping firefighters find a key water valve during a large fire at Miami International Airport to illustrate the technology's value. "We always leverage GIS," he notes.

At LAX, the enterprise GIS program runs on department-issued iPads. (Currently, there are 140, but more purchases are planned.) Using the mobile tablets, field personnel initiate response for incidents that run the gamut from leaky toilets and burned out light bulbs, to runway debris and fuel

spills. They simply use the GIS application to mark where they are on a map and add information such as photos, incident type, etc. Details are automatically sent to ARCC staff, who review the information, determine what action is needed and dispatch field personnel to the specific location. When technicians arrive, they pull up event-specific workflows and follow preplanned response procedures.

All actions are recorded, time-stamped and logged in a central database.

The GIS and Part 139 inspections function on the iPads show field operations staff their precise spatial location relative to assets they are inspecting. When they see an issue that needs to be addressed, field personnel mark the exact location on the interactive

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asset map. “With this tool, we give them the ability to initiate a request for repair. It provides the GPS location of the discrepancy, and then Maximo sends back the service request number and status,” Johnson describes. “Every time the status of that particular incident changes, an update is sent to Situator; so at the end of the year, our operations staff can produce one report that contains all the information they need.”

The program simplifies FAA-required Part 139 reports, because all of the necessary records are housed in a central repository. “They can pull reports together to show all the inspections that took place, where discrepancies were found, what the fix was, and how long it took to fix it,” Johnson says. Before LAX had the new program, staff had to draw information from two separate systems and combine them into a single report. “It was an arduous task considering the number of inspections they had each day, multiplied by 365 days a year,” she comments.

The system is also designed to help with situations such as unattended bags in the terminal. Operations personnel can use the GIS capabilities to annotate where an unattended bag is located and dispatch security or law enforcement personnel to investigate. If the situation requires evacuating travelers and airport workers in the area, personnel can quickly view tenant information in the system to determine who will be affected.

Data Dashboard

ARCC personnel use a Situation Status Display System from Siemens to classify alerts by importance. Heaton cites the following potential situation to explain the system’s value: It’s noon in the Bradley Terminal and back-to-back A-380s are arriving. There’s a central elevator stopped in the terminal and a fuel spill on a taxiway. ARCC personnel would likely see a red light pop up for the fuel spill and a yellow light for the elevator, indicating which incident should be handled first. “A red light indicates a mission-critical situation that you need to get maintenance working on immediately, and this is designated as a high alert,” he explains. “This tool provides



real-time information that is actionable intelligence that helps shift managers make good, effective management decisions.”

During crisis situations like the active shooter incident at LAX, operations throughout the rest of an airport usually continue while officials take care of the emergency, emphasizes Heaton. “While you’re managing one incident, you have seven other terminals in operation,” he elaborates. “This dashboard allows you to make operational decisions based on the data in front of you.”



PETER SONNENFELD

Peter Sonnenfeld, director of aviation information technology solutions for Siemens, calls the dashboard a “health monitoring system” that allows airports to assess and display

their functionality in real time. “Airports are a complex mix of operations,” he comments. “One change here can have an effect over there, and operations personnel are not necessarily aware of these impacts unless they have a tool that makes them visible.”

Siemens’ dashboard also provides operations personnel with predictive capabilities that enable them to anticipate issues before they arise and nip problems in the bud, Sonnenfeld adds.

Continuous Improvement

Besides streamlining work and response processes, LAX’s integrated solution also stores data for reporting and analysis. This is an immense improvement over prior years when reports for incidents had to be constructed manually by merging data from various sources, notes Johnson. Extracting information the old way also hampered efforts to perform meaningful trend analysis and made it difficult to conduct trunk top exercises and “hot wash” sessions to review lessons learned, she adds.

By integrating and storing data, LAX’s new system can automatically generate comprehensive reports of incidents, including time-stamped records of action taken and comments exchanged. This allows personnel to fully reconstruct an event and glean lessons learned to improve responses to future events.

The level of details captured, along with geospatial references, will also help LAX identify specific areas of the airport experiencing repetitive issues. As such, it will allow management to pinpoint issues to specific assets, service providers, infrastructure weaknesses, etc. Such data can be used to drive procedural changes and operational improvements. ✈️

A photograph of two men in dark suits shaking hands in a modern office setting. They are standing in front of a large window that looks out onto a cityscape with a prominent glass skyscraper. The man on the left is older with grey hair, and the man on the right is younger with dark hair. Both are smiling. The background is bright and slightly out of focus.

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Baltimore/Washington Int'l Creates New Airfield While Complying with Runway Safety Area Regs

BY ROBERT NORDSTROM



When officials at Baltimore/Washington International Thurgood Marshall Airport (BWI) began strategizing about how to comply with the recent runway safety area deadline, they did not expect to end up with a new airfield. One decade later, however, that's essentially what they have.

The \$350 million airfield program that created the new airfield required more than 50 separately procured construction packages and 10 interagency agreements between various governmental entities. The Maryland Aviation Administration credits the vision of airport officials and the commitment and coordination of numerous government agencies and private contractors for making it all happen.



PAUL SHANK

FAA's late 2015 deadline for runway safety area compliance set the wheels in motion. Paul Shank, chief engineer at BWI, explains the interrelated nature of the multi-project program it prompted: "To work on the runway safety area, you have to shut the runway down. If we're going to shut the runway down, why not upgrade the lighting to LED? And while we're at it, why not replace all the light cans and cable? And since our runways are old and in need of repair, why don't we also rehabilitate them

at the same time? And then, to make as much of the work as possible eligible for federal funding, let's retire dozens of airfield modifications to standards that date back decades."

As if that weren't enough, the FAA also asked the airport to replace its navigational aids. And thus was born BWI's Runway Safety Area Pavement Management and Standards Compliance Program. When the last of its projects are completed later this year, the Washington, D.C., area airport will effectively have a completely new airfield.

Pre-Season Super Bowl

As is often the case with airfield projects, maintaining safe and efficient operations during construction was a top priority; but BWI's airfield configuration magnified the usual challenges. The five-concourse airport has only two primary runways—9,500-foot 15R-33L and 10,500-foot 10-28—which intersect. It also operates a non-intersecting 5,000-foot general aviation runway and, until recently, another intersecting, but seldom used, 6,000-foot runway that was historically used as a taxiway.

For a major overhaul program to succeed, however, the airlines had to get on board. "That was the first order of business," Shank recalls. Airport officials explained how important it was to repave, update lighting and address outstanding modifications

to standards while meeting new and impending runway safety area mandates. They were also direct about money, noting that it would cost airlines “about 10 cents on the dollar” to cope with phased closings then, but much more if the airport waited five to 10 years and had to shut down and rebuild each runway separately.

“It was an easy sell,” Shank reports, “and we were able to bring an airport that was designed during World War II up to 21st century FAA standards.”

At the airlines’ request, BWI undertook the most complicated and challenging project first: reconstructing the intersection of the two primary runways. Their rationale was that if the intersection pavements were to fail, the entire airport would have to shut down. The carriers also felt that sooner was better, because the inconveniences associated with temporarily closing the two main runways would grow in the future due to increasing traffic volume. Finally, they reasoned that Runway 4-22, the seldom-used crosswind runway slated for conversion to a taxiway, would be available for use at the beginning of the program but not at the end.

Airport officials agreed, and planning for a temporary closure began—about 1½ years in advance. To complete the intersection work, BWI closed its two primary runways for 54 hours. To select the most propitious weekend for the work, airport officials studied two years of weather data.

Kicking off BWI’s multiyear initiative with the intersection project required a steep ascent for JMT, the firm that managed the program. “It was like playing the Super Bowl before playing any regular season games,” quips JMT Vice President Alan Peljovich.



ALAN PELJOVICH

As work progressed, it proved vital to keep looking ahead. “[Runway] 15R-33L had to be moved 3 feet to the west. While that was a standards requirement, it helped us keep the runway in service, because we could keep the existing lighting system running while we built a new parallel lighting system 3 feet away,” explains Peljovich. “When we did the intersection, we had to add 3 feet of full-depth pavement and install the new cans then, even though the full runway improvements were still four years in the future.”

During the 54-hour runway closure, BWI made Runway 4-22 available for wider use.

Southwest supported the plan by supplying a 737 for flying test approaches to ensure that temporary operations on 4-22 would be safe and workable under a wide variety of conditions. FAA air traffic control personnel confirmed that their procedures were in order for safe and efficient operations during the temporary closure as well.



FACTS&FIGURES

Project: Runway Safety Area Pavement Mgmt & Standards Compliance Program

Location: Baltimore/Washington Int’l Thurgood Marshall Airport

Owner/Operator: Maryland Aviation Admin.

Project Cost: \$350 million

Funding: Airport Improvement Program (26%); Passenger Facility Charge (60%); State Trans. Trust Fund (10%); Other (4%)

Program Manager: Johnson, Mirmiran & Thompson

Runway Design Consultants: Michael Baker Int’l; URS; AECOM; ADCI

Construction Mgmt: Parsons Transportation Group

General Contractors: P. Flanigan & Sons; Allan Myers; Atlantic; Gray & Son; Concrete General

Concrete Paving: Hi-Way Paving

Electrical: Enterprise Electric; Midasco; Bruce & Merilees

Lighting Suppliers: ADB Airfield Solutions; Integro; Jaquith Industries

Runway Status Light Design: Arora Engineers

Nav aids: DACO

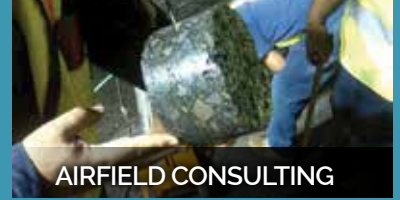
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BWI's airfield configuration magnified the usual challenges of maintaining operations during runway safety area improvements.

In retrospect, Peljovich likens the process of coordinating the temporary runway closures with BWI's carriers to knowing about a major snowstorm months in advance and planning accordingly. "We had contingency plans A, B, C and D in place, and actually ended up using Plan C, which went off flawlessly," he reports. "In fact, Southwest Airlines went on record saying it was one of the best examples of airport construction communication they had ever experienced."

Marching Along

With the intersection project completed, BWI began work on Runway 10-28 in 2012. Crews graded the runway safety area and modified the runway to meet FAA guidelines that require 150 feet of width and 35-foot shoulders. Previously, the runway was 200 feet wide with 12-foot shoulders. To make the changes, workers laid approximately 60,000 tons of asphalt and 500 square yards of concrete, and installed 110,000 linear feet of conduit connecting 900 lights.

Work began on Runway 15R-33L in 2013. During this phase, contractors moved the runway 3 feet west, displaced both ends and moved navigational aids. The runway also required a range of corrective measures to meet pavement rehabilitation requirements and resolve FAA profile standard deficiencies. In some places, a single lift of asphalt was sufficient; elsewhere, five lifts were

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needed in a single area. New 35-foot shoulders were added to each side of the newly located runway as well.

Project planners scheduled the installation of a new offset lighting system in bits and pieces to keep the existing system up and running for as long as possible. Throughout the process, crews installed approximately 230,000 tons of asphalt, 31,000 square yards of concrete, 104,000 linear feet of conduit and 1,700 new lights. Where FAA regulations allowed, lighting was converted from incandescent to LED throughout all phases of the program.

Relocating the glide scope antenna on the 15R side proved to be somewhat involved. The antenna had to be moved because it was too close to the runway; but the standard offset put the antenna 40 feet above a stream. To remedy the issue, engineers specified a 1,000-foot culvert covered with 40 feet of fill so the glide scope could be positioned in the correct place.

Other 2013 projects included updating the 15R deicing pad and completing runway safety area work on the general aviation runway. At the deicing pad, crews replaced asphalt with concrete and rebuilt the drainage system.

Throughout all of its airfield construction, BWI used incentives and liquidated damages to encourage contractors to meet

project and program milestones. As a result, officials were able to return Runway 15R-33L to service at the end of 2014 and fulfill runway safety area requirements a full year ahead of the FAA compliance deadline.

To be eligible for federal funding, however, the FAA required the airport to meet standards on all the projects by the end of 2015. That meant it had to address a number of remaining IOUs last year: navigational aids on Runway 10-28, the final conversion of Runway 4-22 to a taxiway, and lowering the catenary system on an Amtrak railroad line located off the end of the runway.

When Less Is More

Before construction began in 2010, BWI had four runways. Today, it has three: a pair of intersecting primary runways and a separate general aviation runway. Runway 4-22, which had historically been used as a taxiway, was officially converted into a taxiway. And despite being down one runway, the airport increased its overall airfield capacity.

“It would have cost in excess of \$150 million to bring 4-22 up to standards, as we essentially would have had to relocate it,” Shank explains. “It would have been a high-cost project with few benefits.”

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By making 4-22 comply with FAA taxiway design standards, BWI's efforts qualified as capacity project because 4-22 had more value to the airport as a taxiway than as a runway. At the end of its overall program, BWI will end up with a dual parallel taxiway system around the airfield—a major enhancement to capacity, Shank notes. As a result, it, too, becomes eligible for federal funding.

Peljovich likens his role during the sweeping airfield initiative to directing professional musicians in concert. "We've been conducting this symphony since 2008 and we've hit every programmatic milestone, kept on budget, delivered (runway safety areas) early and standards compliance early, all while maintaining safety and operations," he reports proudly.

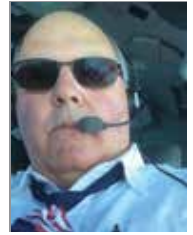
Roger That

Shank credits BWI's commitment to excellent communication for the various project successes. In fact, he cannot emphasize enough the role that effective, consistent and persistent communication has played throughout the program.

"We have tried to create an environment where all the vested interests—owner, contractor, designer, FAA, airlines and the public—are brought together to create and subscribe to a vision as to how the individual projects and the program as a whole will succeed," Shank informs. "It helps to put a human face on the work to be done."

From pilots to FAA officials, personnel involved at various levels of the program echo his sentiments.

"One of the greatest attributes of BWI under Paul Shank's leadership is the way they communicated. 'Death by meetings' was not the case," reflects Bert Seither, chief pilot for Southwest during most of the airfield work. "Meetings were proactive and everyone was heard—operators, the airlines and the airport. Everyone quickly realized that the airport was doing everything it could to minimize negative impacts. They projected a partnering message that we're all in this together. They had credibility."




BERT SEITHER

Eduardo Angeles, FAA associate administrator for airports, is positive about the agency's \$91 million investment of Airport Improvement Program funds in BWI's airfield initiative. "We did it because the FAA lines-of-business, the Maryland Aviation Administration and the airlines wanted to make sure we were aware of everyone's needs," explains Angeles. "Good planning, hard work and talking to each other paid off. The results of this collaboration will pay dividends for the next 20 years and beyond." ✈️




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MALMS PRODUCTS

IMPROVING RUNWAY LIGHTING MAINTENANCE AT SOUTHWEST FLORIDA INTERNATIONAL AIRPORT

Southwest Florida International Airport (RSW) in Fort Myers, Florida, is a single-runway, medium-hub airport currently ranked as the 43rd busiest airport for passenger traffic in the United States, with nearly 8.4 million passengers in 2015. RSW is a highly seasonal airport with peak flight operations occurring between January and April. Due to the seasonal nature of the airport, compounded by a single-runway, there are challenges for the airfield maintenance team to maintain the highest standards for airport lighting systems, especially working around flights during peak months. In response to these issues, the maintenance department has proactively developed an aggressive preventative maintenance program in order to stay ahead of potential failures, which could have a negative impact on airport operations.

To support this ongoing preventative maintenance program, RSW acquired the Mobile Airfield Light Monitoring System (MALMS™) Photometric Bench Tester (www.malmsnavaid.com/workshop/) manufactured by Tailor Made Systems (TMS) Ltd. This tester is a workshop-based system that tests light fixtures before their installation on the runway. The system also includes a photometric workshop tester, tunnel, PC and associated software.

The MALMS™ Photometric Bench Tester is a compact and stand-alone system that can be installed inside an existing electrical maintenance workshop. It consists of a turntable that the runway or taxiway lighting can be fitted onto, powered up to 6.6 Amps and then rotated either 180 or 360 degrees for uni- or bi-directional fittings. The intensity of the light is measured via a vertical 12-sensor array, which is at the end of a self-contained, blacked-out tunnel. The results of the measurement are then shown on the computer via the MALMS™ Luminaire Software. This allows the technician



Electrical Engineer recording the photometric data in MALMS Luminaire

to see the photometric measurement on each side of the light fitting, whether it has passed or failed based on airport-specified test criteria and the ISOCANDELA image of the tested fitting. The technician can save the information into a database that allows the photometric history of each light fitting to be stored, as well as any work done for each specific light.

The Federal Aviation Administration Advisory Circular 150/5340-26C provides guidance on the maintenance of visual aid facilities. The MALMS™ Photometric Bench Tester allows the airport to follow the standards set, especially in Section 5.3.3.4 for Runway and Taxiway In-pavement Lighting Systems. "This section of the advisory highlights how an airport should refurbish such light fittings," said Scott Davis, manager, airfield/grounds maintenance at RSW. "MALMS™ is an enhancement to our maintenance program,

which ensures every fixture installed on our airfield meets the FAA A/C 15053455-46D for candelas, azimuth and elevation."

The MALMS™ software provides RSW technicians with accurate measurements to allow them to quickly identify areas of concerns in the workshop rather than in the field. MALMS™ also affords RSW the ability to quickly install a new fixture from the shop to the field as one complete unit that passes all tests and meets all FAA specifications. The defective unit is then returned to the shop and rebuilt using the MALMS™ solution. Once completed, it is placed on the shelf ready to deploy.

There are nine airports in North America using this system for checking airfield lights in-house and Southwest Florida International Airport is proud to be one of the leaders in maintaining airfield lighting.

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MALMS Dashboard



FACTS&FIGURES

Project: New Inline Baggage Screening Systems

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

Terminals: 1, 2 & 3

Cost: \$160 million

Funding: TSA (\$80.5 million); Broward County Aviation Dept. (\$79.5 million)

Design Criteria Packages/Owners Rep:

Gresham, Smith and Partners/CAGE (Baggage Handling System/Checked Bag Inspection System)

TERMINAL 1

Project Lead: Southwest Airlines

Construction Timeline: Feb. 2010–July 2011

Design/Builder: Whiting-Turner Contracting Co.

Engineer of Record: GRAEF

Structural Engineer: De Los Reyes Engineering

Baggage Handling System: G&T Conveyor

Program Manager: AvAirPros

Southwest Airlines Baggage Handling System Owner's Rep: VTC

Explosive Detection System: L-3 6600

TERMINAL 2

Project Lead: Delta Air Lines

Construction Timeline: Jan. 2013–Jan. 2014

Design/Builder, Engineer of Record, Baggage Handling System Mfg: Siemens

Program Manager: PM Technologies

Architect of Record: Cartaya & Assoc.

Broward County Aviation Dept. Owner's Rep: Gresham, Smith and Partners/CAGE

Explosive Detection System: Morpho 9800

TERMINAL 3

Project Lead: JetBlue Airways

Construction Timeline: Jan. 2013–June 2016

Program Manager: AvAirPros

JetBlue Baggage Handling System Owner's Rep: BNP Assoc.

Design/Builder: Whiting-Turner Contracting Co.

Baggage Handling System: Daifuku Airport Technologies (Jervis B. Webb Co.)

Architect of Record: Corgan

Civil, Structural, Mechanical, Plumbing, Fire Protection Engineering: GRAEF

Electrical Engineering: Gartek Engineering

Baggage Handling System Construction Mgmt Assistance: VTC

Broward County Aviation Dept. Owner's Rep: Gresham, Smith and Partners/CAGE

Explosive Detection System: L-3 6700

Of Note: Airlines took lead during design &/or construction of inline baggage screening systems in 3 terminals

Fort Lauderdale-Hollywood Int'l Uses New Model for Inline Baggage Projects

BY ROBERT NORDSTROM



Fort Lauderdale-Hollywood International (FLL) recently wrapped up the installation of an inline baggage screening system in Terminal 3, part of a six-year program to enhance baggage handling and security at the Florida facility

For some airports, replacing baggage screening and handling equipment proves to be a time-consuming, complex and cumbersome project that can disrupt airline operations. FLL, however, found that it could speed up the project process and facilitate ongoing operations by letting airlines take the lead.

Terminal 1 Experience

When FLL began planning its Terminal 1 baggage system replacement back in 2009, Southwest Airlines approached the Broward County Aviation Department about taking the lead in the construction process. Southwest had recently completed an inline project at another airport, explains Marc Gambrill, director of Capital Improvement Projects for the county



MARC GAMBRILL

department. Since it was the carrier's baggage system that was being replaced, so the thinking went, why not allow Southwest to take charge of the construction process?

Taking a design-bid-build approach, the department provided Southwest with design and construction documents for the project; and the airline hired Whiting-Turner as its general contractor. When additional design services were needed, Southwest hired De Los Reyes Engineering and converted Whiting-Turner's construction contract to a design-build contract so GRAEF could be hired to complete the design. VTC served as the quality assurance/quality control representatives for the baggage handling system/checked baggage inspection system during installation through commissioning. VTC also assisted Southwest during the design process by providing design reviews and recommendations.

Denise McElroy, senior manager of Corporate Facilities for Southwest, reflects on the pivotal nature of such projects: "Baggage handling is right at the heart of our operations. So if we



DENISE MCELROY

can control construction and scheduling, we can better manage the impact on our operations. For example, if we have to shut down our existing system to make changes in the new system, we have to figure out how we are going to handle bags manually. It's very beneficial if we can control that. Ideally, we would like to take the lead in both the design and construction. In this case, the airport already had the design, so we were responsible for the construction."

The 18-month, \$32 million project required the construction of a steel structure suspended above the existing baggage operations. To hold eight new L-3 6600 explosive detection machines, explosive trace detection equipment and new conveyors, the contractor installed elevated pods on the east and west sides of the terminal. Crews also installed new makeup devices with new hardware and software for the inline system, and upgraded existing mechanical, electrical, fire protection and plumbing.

Chris Norton, chief executive officer of VTC, is a fan of carriers taking the lead during projects when it is beneficial for both the airlines and airport. "In some cases, airlines can be a lot more nimble and they can tailor construction phasing to support their operation," she explains.



CHRIS NORTON

Lessons Learned

Reflecting on experiences during the Terminal 1 design and construction process, FLL management concluded that airline-led baggage handling/checked bag inspection system projects allowed the county and airline more flexibility and produced an exemplary product within budget and on schedule. "The sponsoring airline will need to set the example for the other airlines as Southwest did in Terminal 1," notes Gambrell. "The Southwest station was dedicated to accommodating the project so that work could be done as fast as possible. Southwest set the example, and the other airlines followed their lead."

Additionally, the Broward County Aviation Department concluded that a design-build approach was preferable for future inline baggage screening projects at FLL, because it allowed department personnel to provide input into a criteria package and set the direction of the project without having to take on the responsibility of the entire design. Gambrell chronicles several key points: "Create a concept of where the inline system will be placed; have good, detailed specifications prepared, including reporting requirements, system requirements, proper documents; and provide these specifications to the BHS (baggage handling system) contractor and allow the contractor to handle the project design-build."

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The Terminal 2 project capitalized on lessons learned during work in Terminal 1.



RICHARD WELCH

Department Project Manager Richard Welch notes that logistics, phasing and layout/design are key components to inline systems. "It's important that the companies that install these systems provide

input to the design as early as possible," Welch informs. "In addition, the airport's building department has a unique requirement that they do not accept baggage handling system mechanical and electrical design drawings for approval; therefore, the BHS original equipment manufacturer's submittals need to be provided instead."

Welch goes on to explain that even in a design-build project, the role of the designer—in this case, an independent third party working for the county aviation department—is critical.

For terminals 2 and 3, Gresham, Smith and Partners (GS&P) prepared a design criteria package to solicit publicly advertised bids from design-build contractors. After the design-build project was procured, GS&P was retained for the duration of the project to ensure that the final product adhered to the airport's design intent. "It was an

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interesting process for us to go from acting as the traditional designer preparing a design criteria package to then assuming an owner's representative role," remarks GS&P Project Manager Ben Goebel. "We had to be really vigilant to handle the ever-changing role and responsibilities."



BEN GOEBEL

Moving Forward

Building on the success of the airline-led project in Terminal 1, the county aviation department contracted Delta Air Lines to take the lead during the design and construction of a new inline baggage screening system in Terminal 2, and with JetBlue Airways in Terminal 3.

In Terminal 2, Delta procured the project as design-build, with Siemens designing and installing the baggage handling system/checked bag inspection system. PM Technologies managed the project for Delta and GS&P/CAGE acted as owner's representatives to the aviation department to verify that the end product met the intent of the criteria package.

TSA's contractor installed three Morpho 9800 explosives detection system machines and explosives trace detection equipment. The airline's contractor installed new baggage conveyor systems and make-up devices, and replaced existing conveyors. Mechanical, electrical, fire protection and plumbing

were modified and upgraded, and new hardware and software for the inline system installed.

The Terminal 2 system includes early bag storage with ramp-level induction to accommodate seasonal cruise ship traffic and year-round international connecting flights. The addition of an inline system also prompted modifications in the ticketing lobby.

The Terminal 3 project featured installation of four L-3 6700 explosives detection machines and explosives trace detection equipment. As in Terminal 2, crews also installed new baggage conveyor systems and make-up devices, and renovated existing conveyors. Mechanical, electrical, fire protection and plumbing were again modified and upgraded, and new hardware and software for the inline system installed. Additionally, contractors modified Terminal 3's south lobby, airline ticket offices and F1 gate to accommodate the new inline baggage system.

JetBlue hired BNP Associates to design the system to a 30% level, and then put the package out as a design-build. BNP continued to support JetBlue as its designer and owner's representative for the baggage handling and checked bag inspection systems to verify that the end product met the design intent.

Doyle Steele, regional manager for Delta Air Lines throughout the Terminal 2 project and currently director at PM Technologies,



DOYLE STEELE

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notes that airlines, with regard to inline baggage systems, have a well-developed appreciation and understanding of the design and installation process.

“When you’re building a new baggage system, baggage operations must continue throughout the construction process,” says Steele. “You have to work on top of a live operation, which is a huge challenge. If an airport is in charge of the process, they might schedule work between 10 p.m. and 5 a.m., which is fine unless, say, there’s a weather delay in Dallas and the airline needs to keep operations open until 1 a.m. In other words, operations are fluid and you don’t know what’s going to be happening from hour to hour. If the airline is in charge, it can adapt to unforeseen events and circumstances.”



MIKE STINE

Mike Stine, director of corporate real estate for JetBlue, believes that the airline and airport benefit when an airline takes the lead in baggage system projects. The airline is better able to control the impact on operations and in many instances is able to move the project forward more quickly, says Stine.



DEBBIE PROCTOR

Debbie Proctor, JetBlue’s manager of facilities, agrees: “In order to facilitate growth, not only for JetBlue but for other airlines as well, we feel we can expedite the process and make sure we get the system that fits our business model.”

Stine and Proctor both note that while JetBlue is assuming a general contractor-like role, the airline is following Broward County Community Business Enterprise requirements by hiring local businesses to perform the work.

“Broward County was a tremendous partner,” Stine emphasizes.

A Win-Win-Win

Many airports welcome inline baggage system projects because they regain valuable space in the ticketing lobby when large screening equipment is moved behind the scenes. In addition, tenant airlines benefit from faster bag processing and TSA is able to free up valuable human resources due to added automation.

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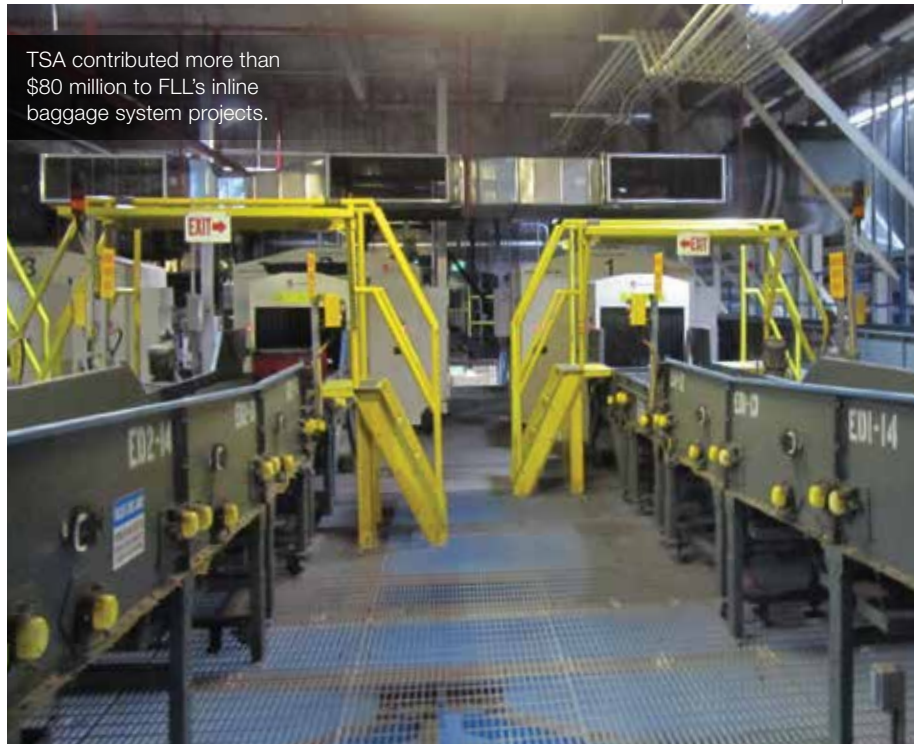
SARI KOSHETZ

“We are pleased to move these giant machines out of the lobbies and get the system into the bowels of the airport,” reports TSA Public Information Manager Sari Koshetz. “This continuing rollout of the inline system at FLL, to which TSA contributed more than \$80 million, is an excellent example of the federal government partnering with local government, in this case county government, to make screening operations as efficient as possible.”

Recent efforts to increase baggage-processing rates at FLL remind Steele of “Speed wins,” a phrase Delta’s former chief executive, Richard Anderson, often used when talking about the travel business.

“He’s right,” Steele reflects. “Time is money. If you can improve a process, it’s a win. The faster you can do that, the better the win.” 

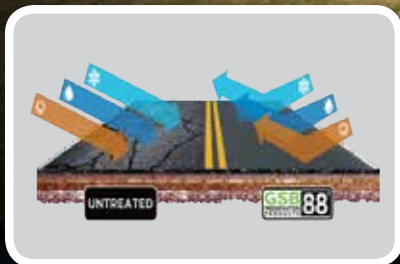
TSA contributed more than \$80 million to FLL’s inline baggage system projects.



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San Francisco Int'l Launches Pilot of Paid Concierge Service

BY NICOLE NELSON



San Francisco
International
Airport

FACTS & FIGURES

Project: Premium Concierge Service

Location: San Francisco Int'l Airport

Vendor: Airport Butler (division of Airport Terminal Services)

Sample Services: Personal meet-and-greets; wayfinding assistance; language translation; ground transportation/concessions procurement; etc.

Sample Customer Groups: Business professionals; senior citizens; families with small children; non-English speaking passengers; students or unaccompanied minors

Base Price: \$250 for 3 hrs. of dedicated service

As international traffic increases and upscale overseas airlines begin to extend their first-class service beyond the cabin doors, San Francisco International Airport has taken notice—and action. In March, it launched the one-year pilot of a paid concierge service for passengers traveling on any airline, in any class of service.

Airport Butler, a division of Airport Terminal Services, is providing the program, and early reactions to the new offering seem promising. Currently, SFO's Guest Services Group is managing the pilot under a non-airline permit agreement. If the program proves viable, the airport plans to put the business out for bid as a concession that will likely continue to be administered by Guest Services.



CHRISTOPHER BIRCH

A marked increase in premium-service traffic from Turkish Airlines, Emirates and Etihad Airways inspired Christopher Birch, SFO's guest experience director, to explore the concept. Birch was intent on matching the elaborate and personalized service select passengers experience at their originating airports in Abu Dhabi, Dubai and Istanbul.

"We didn't want that disparity between the experience on one side and the experience on the other," Birch explains. "We have a nice airport and a nice terminal, but it is a different experience here (in the United States)."

The differences were further punctuated when a handful of international airlines began providing certain SFO passengers with premium parking and limousine





services through agreements with third-party operators. The “Emirates Experience,” for example, offers complimentary “chauffeur-drive service” within a 60-mile radius of the airport for first- and business-class passengers.

When Birch began hearing about the upgraded services international carriers were providing, one thought immediately popped into his head: “We really should be doing this.”

“The airport had been without any sort of formalized service to provide extra attention, extra service or extra assistance,” he explains. “We wanted to make sure that we had something in place where customers could get that level of service if that is something that they want.”

SFO subsequently created a pilot program, with Airport Butler acting as an extension of its own Guest Services group. Airport Butler is owned and operated by Airport Terminal Services, which provides a variety of passenger and ground support services at roughly 50 U.S. airports. The company also operates a fee-based passenger lounge in Terminal 4 at John F. Kennedy International Airport.

Ingrid P. Braeuninger, vice president of Sales and Business Development for Airport Terminal Services, considers Airport Butler a strategic result of the company’s continued efforts to diversify its product portfolio.



INGRID P. BRAEUNINGER

“We wanted to stay adjacent to who we already served, which was the airports and airlines, but also wanted to start tapping into the market for direct business with the consumer,” Braeuninger remarks.

Sophisticated Stewardship

Airport Butler began serving North American airports in 2013, when the firm won an exclusive permit to create an extension of the customer service and concessions program at Vancouver International. The airport authority wanted to elevate the experience for customers passing through the terminal, Braeuninger explains.

“(The Vancouver contract) was an awesome opportunity for us to partner with a pretty innovative airport in creating the service

from the ground up,” she relates. “By the time we got all our protocols and directives in place with stakeholders like Customs and Immigration, CATSA, and the airports and airlines, we really then were able to launch a better service to the consumers.”

Intrigued by results in Vancouver, SFO approached Airport Butler for a similar program, explains Braeuninger. Beyond wanting to improve the customer experience, officials also wanted to differentiate SFO from other airports competing for the same carriers and routes, she elaborates.

The services provided by Airport Butler range from personal meet-and-greets to assistance with language translation, ground transportation and baggage delivery. Many options mirror those offered to premium customers by Emirates and other air carriers.

Airport Butler’s base retail rate of \$250 includes three hours of dedicated service—a window engineered to cover most connections and pre-departure needs. In general, services are covered by more than \$300 million in general liability insurance.

While overseeing the program, Braeuninger has helped fulfill a variety of client requests—from securing a discrete, private room to accommodate the cleaning of a medical feeding tube, to ensuring that ice-cold kosher pickles were available immediately upon arrival.

“Our job is to think of ways to make things easier,” she remarks. “A lot of times it is off-the-cuff, and sometimes we have plenty of time to prepare. But there really is no limit as to what we can do to help our customers.”

So far, departure assistance is the top request at SFO, followed by support during connections and arrivals. No other discernable trends or patterns have emerged yet, but the service is still new.

Ultimately, the airport and Airport Butler hope the company will help expedite passengers through traditional pinch points such as Customs and TSA checkpoints. According to Birch, inroads are already being made with the necessary governmental agencies to achieve that goal.



Airport Butler services range from basic wayfinding assistance to language translation.

“We’ve secured access to the Customs and Immigration Area, allowing Airport Butler staff to meet and greet arriving guests and assist with entry formalities,” he reports. “There is enormous value in being able to offer this service to guests, and we expect a broad variety of customers to request it.”

Braeuninger notes that Airport Butler does not have a “typical client.” Customers range from VIPs and business executives to senior citizens and families in need of additional assistance, she explains. Walk-up service is available, but most arrangements are booked in advance online or through travel agents.

Although SFO is just beginning its trial of paid concierge service, Birch is optimistic about the concept. “We chose

the year-long pilot program to allow for the opportunity for this to percolate here and become a well-known service offering,” he says. “We certainly think Airport Butler is a worthwhile vendor and we believe strongly that the service will be successful in the long run.”

In fact, he hopes it will be a success that other airports will emulate. If more U.S. airports begin offering concierge-level service options, there will be better synergy between passengers’ origination and destination experiences, explains Birch.

For now, though, he’s focusing on how Airport Butler performs at SFO:

“I don’t know what its usage is going to be like, but I think that it has found a place in the U.S.” ✈️

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Ottawa Int'l Improves Control Center By Integrating Airfield Operation Data

BY KRISTIN VANDERHEY SHAW



FACTS&FIGURES

Project: Airport Operations Control Center

Location: Ottawa Macdonald-Cartier Int'l Airport

Provider: Searidge Technologies

Components: Info is combined from various data sources including flight info display systems, airport operations database, security cameras, alarm/security systems; air traffic control; etc.

Key Benefits: Increased operating control/efficiency; improved situational awareness; safety & security enhancements

Of Note: Airport serves as research & development site for NAV CANADA/Searidge

Collaboration and ongoing improvement are guiding principles at Ottawa Macdonald-Cartier International (YOW). Recent enhancements to the airport's high-tech operations control center demonstrate how important both are at the Ontario facility.

After redesigning and restructuring YOW's Airport Operations Control Centre, the Ottawa International Airport Authority partnered with Searidge Technologies last year to further improve situational awareness and response capabilities. Officials from both organizations describe the relationship as a win/win situation: The airport benefits from new technology and all the efficiencies it provides; Searidge gains a local beta site for research and development.

In essence, YOW added an adjunct member to its existing continual improvement team. For its part, Searidge pulls information from various data sources and integrates it into a single,

customized interface for airport personnel. Data sources include YOW's flight information display system, the airport operations database, a closed-circuit television network, alarm/security equipment and air traffic management/air traffic control data.

"Searidge is working with us to integrate all of our airport information sources—real-time surface management data, air traffic control data and airport-centric data—into a single application, which will ultimately make our airport more efficient than ever," says Mark Laroche, YOW's chief executive officer.

In addition to working directly with YOW, Searidge provides remote tower and surface optimization technologies to air navigation service providers and airports throughout the industry. Since 2010, the majority interest of the company has been held by NAV CANADA, the private, non-profit entity that provides the country's civil air navigation services. While Searidge continues to operate



Moodie Cheikh, Searidge chief executive officer (left), and Mark Laroche, YOW's chief executive officer (right).

independently, it gained access to a wider set of tools and operational capabilities, as NAV CANADA is the world's second-largest air navigation service provider by traffic volume. Each year it manages 12 million aircraft movements for 40,000 customers over 18 million square kilometers.

"Now, we can pull real-time information from NAV CANADA, like surveillance and weather data. And when we install new technology at the airport, we can bring NAV CANADA and the authority together to streamline operations," explains Searidge Chief Executive Officer Moodie Cheikh. "We can pursue creative ideas that have the potential to change the aviation industry."

Home-Team Advantage

Searidge's location in Ottawa figured prominently when YOW officials first considered the partnership, notes Laroche: "Because Searidge is in our backyard, it gave us a reason to take a look at them and get to know them. Economically, they play a role in the community, and that is important to us. We didn't have an immediate need for all of the features they have to offer, but we plan to grow with it. It's a mutually-beneficial partnership that is appreciated from both sides."

Over the years, airport officials kept tabs on Searidge, and the partnership eventually evolved organically, Laroche relates.

Cheikh reflects on the early days, in 2006, when the two organizations began working together. Searidge was much smaller back then and readily played the "Ottawa card" when asking YOW for permission to install cameras and other equipment at the airport for testing purposes. "Technology was nowhere near where it is today, and video wasn't even used back then to move airplanes," he recalls. YOW agreed to help the expanding local company, and Searidge engineers set up test equipment. "For about a year we collected the info we needed and it helped us tremendously with product development," Cheikh reflects.

These days, YOW operates nearly every product Searidge markets. "It was and is an iterative approach to find out what could make it better, and then we do it again," he says. "By the third iteration, we often have something the customer finds very valuable."

Increasing Efficiencies

YOW's new system converts the video captured by equipment Searidge installed on the ramp and converts it into track data, which allows airport personnel to see where individual aircraft are on the airport's surface areas.

"Instead of presenting a video screen, we could present them with a top-down, 2D map view, which is what they were used to seeing," explains Cheikh. "What we needed to do was install the cameras on the ramp to record movements of aircraft and vehicles. The output was a top-down map view of all of the traffic; essentially, we digitized video and turned it into data. Then we could automatically tell the airport when an aircraft was on blocks, or if there was a vehicle behind the aircraft."

The partnership between Searidge and YOW is currently entering its second phase, and project planners have identified several specific internal and external data sources that feed into the airport operations control center.

Some of YOW's existing resources—hundreds of video cameras, for instance—will play a primary role. "We asked ourselves what we could do to leverage that investment," explains Cheikh. "If we take information from those security cameras and bring the capability to the airport's operations team, can that enhance the way they do their jobs?"

Incorporating video from YOW's security system with other existing data is just one example of how the airport and Searidge hope to capitalize on the power of integration. At a glance, operations personnel can monitor activity on the airfield in context with what other data feeds tell them should be happening. The integrated, multi-source information stream is designed to make it easier for them to manage from a distance, Cheikh explains. During emergency situations, for example, they are able to dispatch vehicles more quickly. Laroche calls the new system a "window" on YOW's airfield.

"As we started collecting more data, we could see more about what's going on with the airfield and we can zoom in and point and click on the display," he relates. "It provides situational awareness and gives us better operational control."

Over the past year, YOW integrated its asset tracking incursion management system into the new operating control center system. Now, vehicles owned by the airport authority that are fitted with tracking devices can be monitored in the airport operations control center. In addition to improving general traffic control, the new capability facilitates more efficient decision-making about the dispatch of airside vehicles, notes Laroche.

Data feeds from air traffic control and airport systems are integrated with the Searidge platform to provide the airport's flight information display system with more accurate arrival times for passengers. Such data is also expected to enhance YOW's gate assignment and apron management processes.

"The more information we can have on a single display, the easier it is for managers to get a quick sense of what's going on and make operational decisions, such as snow clearing operations," says Laroche. "That takes a lot of information

Working with Searidge Technologies allows the airport to support a local company while enhancing operations.



and analysis. It's all about having more efficient, safe and secure operations on the airfield. And, as we are able to dedicate more resources—which we should be able to as we realize the efficiencies that are inherent in the system—we will expand our implementation.”

Given the operational improvements the airport has already experienced, Laroche says he would like to see other operational systems integrated into the operations control center. Currently, Searidge and YOW are testing an intrusion detection system for possible inclusion. Another goal is to develop a heads-up display with data such as notices to airmen, real-time weather, wind direction and runway friction information.

“I agree with the many advantages that such a strategic partnership will have for the airport, which include enhanced airfield operations management, enhanced security and enhanced safety,” Laroche reflects. “Furthermore, this will provide the Ottawa Airport with increased use of technology and keep us at the forefront of video and data integration usage in our new AOCC (airport operations control center). By partnering with a local company, we are also contributing to economic development and will benefit from future development of airport management systems.”

Safety First

Cheikh acknowledges that implementing new processes and technologies can be challenging for airports. “Aviation is a risk-averse industry, as it should be,” he remarks. “Typically, efficiency is priority number two, after safety.”

With air traffic increasing and most airports lacking the physical space to add runways and other airfield infrastructure, Cheikh believes that technology is the only way for many facilities to expand. “I want the industry to understand that status quo is not an option,” he emphasizes.

The Searidge exec also stresses that introducing new systems into safety-critical operations is a complicated and delicate process, and considers it his company's role to help airports deploy technology in a way that will enable safer and more efficient operations.

On a similar and complementary note, Laroche stresses YOW's part in the process:

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The partnership between YOW and Searidge has allowed the airport to invest its time and resources on its own schedule and gives officials alternate means of accomplishing operations goals, adds Cheikh. “By making that investment now, they’ll be able to grow when they need it,” he notes.

Laroche predicts that the partnership, and the technology it brings to the airfield, will continue to evolve as the airport’s needs evolve. Currently, YOW is planning to install additional security measures on the apron and critical area zones, and eventually plans to add an intrusion detection system. The plan is to link an alarm to the existing interface so staff in the airport operations control center have to watch only one master screen.



Due to the operations control center’s recent debut and the ongoing nature of its development, airport officials say it would be premature to discuss specific cost/benefit details. “It’s difficult to assign a return on the investment in real dollars,” says Laroche, noting that the airport looks forward to planning future refinement projects with Searidge. “We have not seen the full limits yet. There are many more applications we haven’t even considered.” ✈️



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Years of Record Growth Spur New Terminal at Central Nebraska Regional

BY JODI RICHARDS

 When Executive Director Michael Olson first came to Central Nebraska Regional Airport (GRI) in 2005, commercial air service was sparse. A few years later, it was completely nonexistent for a brief time. “We knew we had to make some changes to our program,” Olson recalls.

Change they did. After years of steady increases in commercial service



MICHAEL OLSON

and passenger volume, the Grand Island, NE, airport outgrew its aging 10,000-square-foot terminal. With the help of federal and local funds, GRI recently built a new 34,000-square-foot facility for \$14 million.

For years, GRI has received financial support from the Essential Air Service program, a federal initiative run by the U.S. Department of Transportation to help small communities establish and/or maintain reliable and affordable air service. In addition, the taxpayers of Hall County also subsidize GRI.

In 2006, the airport board asked for and received an additional \$150,000 per year to help incentivize airlines to operate at GRI. The extra funds helped the airport built up enough money in its piggy bank to entice Allegiant Air to begin service to Las Vegas' McCarran International Airport (LAS) in September 2008, relates Olson.

Just before then, GRI was without air service altogether for two months because its previous provider, US Airways Express (operated by Mesa Airlines) pulled out of the Essential Air Service program and ceased operations at GRI on June 30, 2008.



Allegiant's twice-weekly service to LAS did so well, the airline added flights to Phoenix-Mesa Gateway Airport (AZA) about six months later. "After that, our numbers started growing rather quickly," Olson recalls. In 2005, GRI boarded 7,500 passengers. In 2008, boardings climbed to 8,000—despite not having any service for most of the summer. Enplanements more than doubled to 20,000 in 2009, and then reached 37,000 in 2010.

With passenger traffic increasing nearly fivefold in the five years since his arrival, Olson focused on recruiting additional air

service in 2010. "I took a giant leap of faith and went down and visited with American Airlines to see what their level of interest would be in getting into the EAS (Essential Air Service program) and starting air service for us," he explains.

While Olson suggested a Chicago route, American instead bid to establish 13 weekly roundtrips to Dallas-Fort Worth International Airport (DFW) via the Essential Air Service program. With the new regional jet service secured, GRI's boardings went up again, reaching 56,000 in 2011.

FACTS & FIGURES

Project: New Terminal

Location: Central Nebraska Regional Airport

Terminal Size: 34,000 sq. ft.

Cost: \$14 million

Architect & Engineer: Mead & Hunt

Construction: Hausmann Construction

Consultant: Quadrex Aviation

Lavatory Systems: Bradley Corp.

Boarding Bridge: Ameribridge

Baggage Claim Unit: G&S Airport Conveyor

Wayfinding Signage: ASI

Seating: Arconas

Allegiant then added service to Orlando Sanford International Airport (SFB) in fall 2015. “Every year since 2011 has been a record year for us,” Olson reports. In 2015, boardings topped 64,600. This year, traffic is up 16% (through the end of March), and more growth is expected to follow. “We’re on pace to easily hit 70,000 this year,” he reports.

Outgrowing the Facility

As boardings continued to increase year after year, it became clear that GRI’s existing 10,000-square-foot terminal could not sustain the growth. Built in 1954, the original terminal was undersized, inadequate and did not foster good passenger flow, explains Olson.

“If we would have known that we were going to grow so much, we would have probably started this process a couple of years earlier,” he reflects.

A concept budget report revealed that the existing terminal was not only too small, it was also insufficient in rudimentary areas, explains architect Matt Dubbe of Mead & Hunt. “Even from a straight building code standpoint, the terminal didn’t [comply with requirements] in terms of occupancy or amount of exits — it didn’t meet any of the basics,” says Dubbe.



MATT DUBBE

Working with Mead & Hunt and the FAA, the airport conducted a terminal area master plan and needs assessment. Ultimately, it led to the design of a new 34,000-square-foot terminal with two gates.

Multiple planning scenarios illustrated that the best option, both financially and operationally, was to construct a new terminal rather than renovate the existing facility, Dubbe explains. “We found that it was nearly a 50% upcharge to try to mitigate all of their existing issues and meet their new projections while keeping operational,” he elaborates.

“Plus, we looked at the general inefficiencies from an energy and sustainability standpoint of the existing building,” Dubbe adds. The 60-year-old structure was simply not designed to handle the growth GRI was experiencing.

Between entitlements and \$7.5 million in discretionary funds, GRI received \$11 million in federal funding for the \$14 million terminal project. The remainder was paid for locally through a bond.

According to Olson, garnering community support for the project was not difficult; and he suspects that the lack of a boarding bridge at the old terminal helped the cause. Ground boarding winter flights was not a favorable experience for passengers, he explains. “It didn’t take them long to buy into the

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fact that we needed a new terminal,” Olson remarks. “Plus, it was so congested in that old terminal. We simply outgrew [it].”

Regional, Sustainable, Modern

Crews had to demolish an administration building to make room for GRI’s new 34,000-square-foot terminal. But even though the new facility is located just 200 feet south of the old, construction did not impact flight operations.

The project was *not* a “field of dreams” project, Olson stresses. “This was demand-driven, and the FAA agreed,” he relates, noting that the new terminal is designed to accommodate 120,000 annual passengers.

“It’s an elegant design that is completely driven by performance and regional aesthetics,” Dubbe adds. “It will wear well long into the future and be flexible enough to handle the nature of aviation.”

The holdroom, for instance, can be expanded to accommodate more passengers as traffic grows.

Mead & Hunt designed the terminal with open sightlines to allow travelers a visual connection with all aspects of the airport experience: ticketing, security checkpoint, restrooms, baggage claim and exit lanes. Many of the interior walls are glass. “It’s all about opening up sightlines and blurring the barriers between these spaces,” Dubbe explains.



Designers added a river-like pattern to the terrazzo flooring to help guide visitors through the terminal.



Mead & Hunt congratulates Central Nebraska Regional Airport on its commitment to improvements to better serve its community.



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The building's saw-tooth roof is designed to maximize natural light in the terminal while minimizing heat gain.

In addition to meeting the practical needs of GRI's growing volume, Olson had other goals in mind for the new facility: sustainability, regional character and modern conveniences.

Although the airport did not pursue Leadership in Energy and Environmental Design (LEED) certification from the U.S. Green Building Council, sustainability was a key goal in the design, says Olson.

The exterior envelope is super-insulated for maximum energy efficiency, with thermal materials on all sides, including the floor, notes Dubbe. Designers also positioned energy-efficient skylights on the north-facing roof to capitalize on natural light during the day. "The way the daylight tracks there is beautiful," he comments. "Largely during the day, they don't need artificial illumination."

The building's saw-tooth roof allows natural light to stream in, but minimizes heat gain, Olson adds.

The terminal was designed to accommodate the future installation of solar panels on the south-facing portion of the roof. If GRI executes such a



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project, Dubbe estimates that the airport could reduce its electrical load by 25%.

High-performance glazing on the exterior glass and advanced mechanical systems are key sustainability features already in place. A geo-thermal heating system in the floor and LED lighting inside and outside the terminal were specified to further reduce energy consumption.

A central building core houses a tornado shelter and restrooms with 14 new handwashing stations that eliminate the problem of wet hands dripping across bathroom floors. Mechanical systems are housed above, on a second-story mezzanine.

Durable finishes like terrazzo flooring and porcelain wall tiles were selected to keep maintenance costs low and increase the sustainability of the project.

The terrazzo flooring also communicates GRI's regional characteristics and serves as an intuitive wayfinding tool. Designed to resemble the local Platte River, the flooring pattern helps guide departing passengers from the entrance vestibule to the ticketing counters, through the security checkpoint and out to the gates. Another river-like flooring pattern leads arriving passengers to the baggage claim, car rental counters and out the exit door. "It's a really unique design," comments Olson.

"We took a sharp look at the context and the sense of place and tried to reflect that in the design," Dubbe adds.

Artwork and gallery wraps throughout the terminal illustrate some of Nebraska's notable features. A 20-foot mural in the exit vestibule depicts sandhill cranes and a sunset over the Platte River. Along the TSA checkpoint, a 32-foot mural showcases some of the state's agricultural crops, such as corn and soybeans.

Airport officials insisted on providing plenty of power outlets in the gate area, and charging stations were integrated into more than 40 of the 220 seats. "[Now], there's more than ample phone charging in the terminal," Olson relates.

Beyond Economic Impact

According to a 2003 economic impact study, GRI contributed \$21 million annually to the region. Since then, however, GRI has substantially increased air service and added more tenants to its industrial park. In 2009, the Nebraska Army Air National Guard established a base there, with \$45 million of capital investments.

To update its economic impact figure and express the growth that has occurred during



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GRI's first boarding bridge is a welcome addition for passengers—especially during inclement weather.

the last decade, GRI hired consultant David Byers of Quadrex Aviation.

Byers conducted an airport regional value study, which he says provides a better description of GRI and its local contributions than an economic impact study. A regional value study goes beyond job creation and the payroll an airport brings to the region and illustrates the true value of the asset, explains Byers. "It's not just the jobs," Olson agrees. "The airport brings a lot to the community."

Taking a more detailed look at the value of the assets on and around the airport—and evaluating GRI's strengths, weaknesses, opportunities and threats—helps officials and community members see the airport as an investment that needs to be protected and improved, says Byers.

After reviewing various metrics, Byers develops a numeric score for each airport he studies. In GRI's case, it was 33.75 out of 40 points. The score can be an important tool for officials to use when telling an airport's story because it quantifies the value of the facility and investments the community has made, he explains. It also identifies specific areas where there is room to improve.

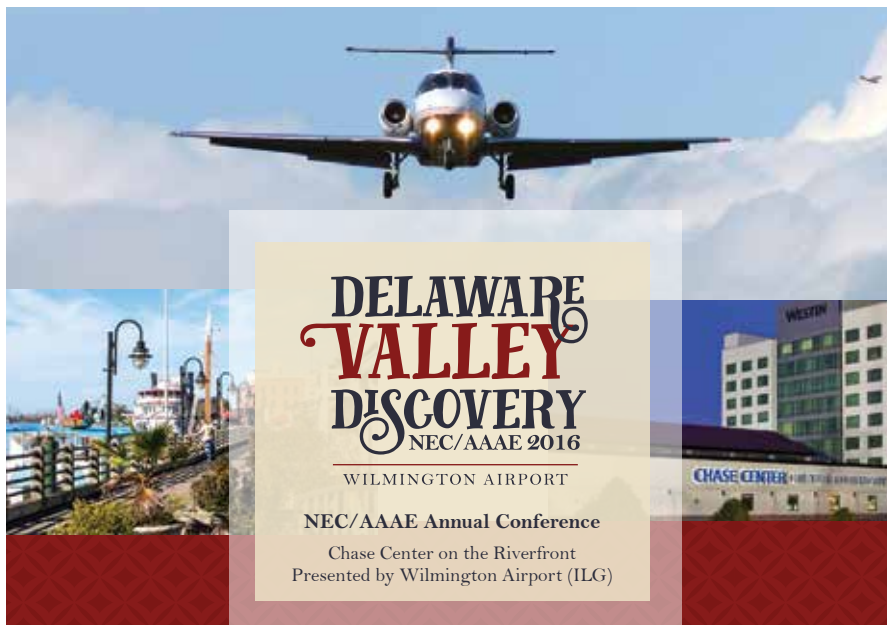
Olson describes the results of GRI's regional value study as staggering. "When you go from \$21 million per year economic impact on the region to \$158 million per year, that means you've done some good things at the airport. And we certainly have," he notes.

For Olson, the regional value study set a new standard for what should be included in an economic impact study. "It's a great marketing tool," he remarks. "Airports don't market enough. Airports are huge economic generating engines, and airport directors don't promote the economic impact enough."

"It shows that we're doing our job at the airport," he reflects. "We're developing, and we're helping Grand Island develop at the same time."

Favorable Conditions

GRI's catchment area has grown substantially in recent years, Olson reports. "People will drive great distances—especially here in Nebraska—to fly on affordable airlines," he explains. A quick survey of vehicles in GRI's parking lot reveals that passengers come from northern Kansas and southern South Dakota, as well as Lincoln and Omaha.



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Allegiant's nonstop service to places like Las Vegas, Phoenix and Orlando certainly helps, quips Olson. American's DFW flights also set GRI apart from its regional competition—Lincoln Airport and Kearney Regional. "They didn't have service to the south," he details.

A largely agricultural economy helped insulate GRI from the 2008 recession, notes Olson. "I think the highest I ever saw unemployment was 5.5%," he reflects. "Today, it's pushing 2.4%."

Local tourism received a boost in 2010, when the Nebraska State Fair moved from Lincoln to Grand Island. The city is also the site of numerous animal shows throughout the year, and the Platte River is the world's largest stopping ground on the sandhill crane migration route.

Given the variety of events attracting visitors to the region, Olson sees unmet travel demand and predicts that airlines will grow their current service and add new routes. "The community is telling me they need daily service going east," he reports.

Looking Ahead

Because FAA's forecasts are more conservative than the expansion GRI is experiencing, Olson foresees the airport outgrowing its current terminal sooner than expected: "We figured in 2025 we would have to do an expansion; I'm thinking it's going to be 2020."


"That's good news/bad news," he adds. "The good news is we're growing that much. The bad news is we're growing that much."

Currently, American Airlines receives about \$25 per passenger from the Essential Air Service program—the second lowest amount in the system. "That's good," notes Olson. "This is truly a success story. I hope we can get out of the program. And once we do, we'll potentially be eyed by more airlines and more air service."

Last year, the airport requested and received \$250,000 in taxpayer funds to use for airline incentives.

As of mid-May, the airport board had not determined what will become of GRI's old terminal, but Olson expected a decision within a few months. Likely options include leveling it to make room for airport administration offices or additional parking. A previous assessment determined that it didn't make economic sense to renovate the facility for other uses. Located right next to the new terminal, the old structure occupies valuable land—"Miami beachfront property" as Olson puts it.

Since Allegiant added service, GRI has added 520 new parking stalls, bringing its total to 840. Historically, parking has been free, but Olson expects that to change later this year or in early 2017. "We're leaving a lot of money on the table," he notes. "But we had free parking forever here because of the competition at Lincoln, Omaha and Kearney."

Another previous project, self-funded by the airport, was a new terminal for GRI's fixed base operator, Trego-Dugan Aviation, which provides ground handling and passenger services for Allegiant and American flights. 



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Nashville Int'l Establishes New 7-Year Airline Agreement, Fosters Facility Expansion to Meet Growing Demand

BY JENNIFER BRADLEY

FACTS&FIGURES

Project: New Operating Agreement

Location: Nashville Int'l Airport

Owner/Operator: Metropolitan Nashville Airport Authority

Agreement Term: 7 yrs

Notable Provision: Fixed terminal rental rates

Previous Agreement: 28 yrs of financial control by airlines

Agreement Development: 2 yrs

Negotiations with Airlines: 9 months

2015 Volume: 11.6 million passengers

Est. FY 2016 Volume: 12.1 million passengers

Service: 10 airlines, with 390 flights arriving/departing daily; non-stop service to 50+ markets



Nashville may be best known as the home of country music, but years of notable commercial growth are helping it earn some new distinctions. In 2015, for instance, *Forbes* ranked Nashville as the 4th best city for white-collar jobs, and *Business Facilities* magazine named it the U.S. city with the best potential for economic growth.

Such business accolades have been great news for the Metropolitan Nashville Airport Authority, which owns and operates Nashville International Airport (BNA) and John C. Tune Airport, the city's general aviation facility. Last year, BNA set a new record by serving 11.6 million passengers, and the airport is on pace to shatter that record this year.

Rapid commercial expansion, the addition of the Music City Convention Center (which has attracted 1.8 million guests in just three years) and a generally booming economic foundation inspired the airport authority to reconsider its operating agreement with tenant airlines at BNA. After two years in development, a new seven-year agreement is now in place, following 28 years of financial control by the airlines.

Challenging Situation

Rob Wigington, president and chief executive officer for the airport authority, notes that shorter-term agreements are now an industry trend. The new agreements enhance an



ROB WIGINGTON

airport's ability to manage its facilities and balance the entrance of different airlines—a change from the previous norm, which often resulted in “fortress hubs,” he explains.

Michael Garnier, Southwest Airlines' manager of Network Planning, led efforts for BNA tenant airlines as chair of the Nashville Airline Affairs Committee. (Southwest accounts for roughly 54% of BNA's traffic.) Garnier says Southwest knew that the airport had an extensive

capital improvement plan in mind to revitalize the existing terminal, but also that it lacked the necessary funding mechanism to execute it. “What I really got out of this process is that BNA wanted to make it work and made sure to meet each carrier's needs throughout the entire deal,” Garnier reflects.

The new agreement was reached two years before a 30-year restrictive use and lease agreement with American Airlines and other carriers serving BNA would have expired. Such agreements, which were common back in the 1980s, gave the signatory airlines majority-in-interest approval over BNA's full operating budget and any maintenance or capital improvement projects.

When BNA was an American Airlines hub, the carriers signatory to the agreement were obligated to pay for airfield and terminal facilities. But the airlines' obligation continued even after the airport was “dehubbed” in 1996. “With the change in circumstances, the 30-year agreement had outlived its usefulness,” comments Wigington.

Even though other airlines and concession operators were renting some of American's vacant space at the airport, there was still a lot of square footage American didn't use or need. In addition, Southwest had become the main carrier at BNA.

Under the previous agreement, airlines would cover funding shortfalls, but the airport was unable to pursue improvement programs at will because the airlines ultimately had veto power over projects and budgets, Wigington explains. Over the years, enhancement projects, major capital improvements and facility maintenance got deferred, he adds.

Why change with two years left on the previous arrangement? In a word, growth. Wigington points back to the enormous expansion Nashville has experienced in the last five years. “We knew we couldn't wait, from the standpoint of how we needed to serve this community,” he remarks. “We can now move forward on many of these projects and take care of the demand that's on us immediately, as well as the passenger traffic coming in the near future.”

Benefits for All

Michael Lee, chief commercial officer for the airport authority, notes that many other U.S. airports have already shifted to what he considers modern use and lease provisions. Such conditions include minimum requirements for flight activity at gates, which allows the airport to take back under-utilized facilities, he explains.



MICHAEL LEE

“We were late coming into that with the old agreement we had,” Lee acknowledges. “The one unique item we did incorporate into our new agreement is a fixed square-foot rental rate for the terminals for the entire seven-year term.”

The new arrangement provides airlines with stable rates and affords all parties a level of certainty for nearly a decade of operations, says Wigington. The partnership is mutually beneficial, he adds: The airport is better able to execute needed projects cost-effectively, and airlines are able to come to BNA and grow.

Garnier agrees, noting that predictability is welcome from all perspectives. “The airport gets to do a lot of capital improvements, which benefits our passengers, our customers,” he says. “And our rates continue to be stable. We're all getting brand-new jet bridges and some refurbishment in the terminal. It is truly a win/win.”

Although fixed rates are something airports don't typically offer, BNA is very comfortable with the arrangement, Lee notes.

In contrast to the terminal provisions, the new agreement's airfield terms are more traditional. “We did give them (the airlines) the ability to approve capital projects for the airfield, as they are paying the full cost,” says Lee.

Another noteworthy change in the operating agreement is that BNA's airlines are no longer responsible for shortfalls in capital project expenses. The airport authority is.

Although the airlines no longer have ultimate control over terminal projects

and other initiatives outside the airfield, the airport authority still plans to consult with them and consider their input. "They are our partners and their opinion is important, especially on terminal impacts," Lee remarks. "We want to make sure what we are doing works for them. We know airports, they know airlines; and we've got to make sure we balance those needs effectively."

Protracted Process

Nine months of the airport authority's two-year development period were spent in direct discussion with the airlines. "I think we did partner with them very well," says Lee. "They were with us lock-step and were engaged, which was nice."

The first crucial step was getting everyone to agree that negotiations should begin before American's 30-year agreement ended. As is often the case, the first step was a bit of a doozy, recall authority personnel.

Both Wigington and Lee credit Southwest Airlines for stepping in to lead the carriers throughout the process. "They were critical to coordinating and getting the other airlines to the table, and working through the issues," says Lee. "Without their leadership, we wouldn't have gotten this done."

Garnier is similarly complimentary about the authority execs: "There were times we had differences on business deals and language, but they were always open to understand our needs. They made as many concessions as they could to make it work for us and still work for them."

While Southwest provides more than half of BNA's passenger volume, American, Delta and United are also key carriers. JetBlue flew its first BNA flight in May, and Alaska Airlines began service there last September. WestJet is scheduled to begin flights in a few months. [Note: WestJet began service this week.]

Given the spate of added flight activity, BNA's ability to provide new carriers with space seems to be benefiting everyone. By 2023, the airport is expected to serve 18 million passengers per year.

"Nashville is booming and BNA is one of the fastest growing airports in North America, for certain, and the real key for us was getting ahead of the demand curve with a new agreement so we can move ahead on these projects," Wigington adds.

Moving Forward, Together

Speaking on behalf of the airlines, Garnier notes that everyone involved with negotiations at BNA strived to move the process



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forward and make the agreement work on a positive level for all involved. "Nashville's always been a great partner to us," he reflects.

The intense negotiations required everyone involved to continue talking and listening, despite intermediate ups and downs, he adds. "I truly believe that our success came in the constant communication we had, and that is what made this deal move forward."

He further contends that relationships built during negotiations added a crucial human factor that allowed opposing factions to work through differences of opinion by seeing and respecting other points of view. "That only strengthened the relationship," Garnier comments. "This had to be a unanimous decision in order to end the other deal early."

With the new agreement in place, BNA executives are eager to begin working on several projects in the airport's latest master plan. Wigington reports that the airfield is in great shape, with plenty of runways and taxiways because it was built for hub operations; but the terminal, parking areas and roadways all need work and expansion.

He considers short-term parking an immediate need, as congestion is growing on airport roads, at the curb and inside the terminal, especially in the ticketing lobby and baggage claim areas. A second cellphone parking lot is already in the works, and other projects such as ticketing lobby renovations are in the planning stages. "These areas were not built for the kind of airport we've become and for the type of services we have," Wigington explains.

"We really went into this new agreement negotiation with the notion that we needed a better partnership, and the airlines recognized that, too," he adds. "They also knew that at some point, this 30-year-old agreement was going to come to an end, we'd all sit down and discuss how we're going to operate this airport."

In the spirit of partnership, everyone celebrated together when the final agreement was signed and sealed. "We have a lot to celebrate, and that was a big one," muses Wigington.

Announcement of the new agreement coincided with Southwest's 30-year anniversary at BNA, which the airline commemorated by unveiling a 737 painted like the Tennessee flag. "This is working out great for us and the other carriers," Garnier concludes. "It was a good year for us in Nashville." ✈️

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Virginia Commissions Statewide Airfield Assessments

BY THOMAS J. SMITH



FACTS&FIGURES

Project: Statewide Pavement & Airfield Markings Study

Location: Virginia

Scope: 62 Airports
(6 Commercial; 56 General Aviation)

Cost: \$625,000

Primary Contractor/Pavement Study:
All About Pavements

Subcontractor/Markings Study: Sightline

Of Note: First statewide airfield pavement & markings assessment in the U.S.



Armed with magnifying glasses and kneepads, crews spent the fall of 2014 examining the pavement and paint on every airfield at every public airport in Virginia. In total, they surveyed 62 commercial and general aviation facilities. As a result, airport operators and state officials now have a concrete plan to improve the safety and longevity of their runways, taxiways and aprons.

The Virginia Department of Aviation, which sponsored the study, learned that collectively, it will cost nearly \$252 million to maintain the state's airfields during the next seven years. In comparison, the estimated price tag for markings maintenance over the same period was pegged at \$4.4 million, but it only covers the 56 general aviation airports that were surveyed.

Total cost for the assessments and improvement/maintenance plans they inspired was \$625,000. According to Virginia aviation officials, the project was a nationwide first. No

other state aviation agency has surveyed the condition of pavement and markings at all of its public airfields.

All About Pavement, from Mahomet, IL, was the primary contractor for the study and performed the pavement analysis. Virginia-based Sightline analyzed airfield markings as a subcontractor.

While pavement assessments have been part of previous surveys, an assessment of airfield markings had never been undertaken on a systematic, statewide basis anywhere in the United States, according to state and industry sources. In general, markings have received more attention since 2008, when the FAA published a handbook addressing the topic. Sightline President Donna Speidel served as the principal investigator on the team that developed the handbook. Since then, Sightline has



DONNA SPEIDEL



assessed and designed markings programs at four of the top five U.S. airports. In some cases, the airports acted proactively; in others, they responded to FAA orders.

Regardless of the catalyst, Sightline focuses on evaluating the effectiveness of an airport's current markings, and then determines when markings need to be maintained and how they should be refreshed. Speidel's rule of thumb: Paint less, clean more.

The state included Virginia's 56 general aviation facilities in the markings survey to improve each airport's safety and operations capability, notes Randall Burdette, executive director of the Virginia Department of Aviation. Survey results presented to the agency last

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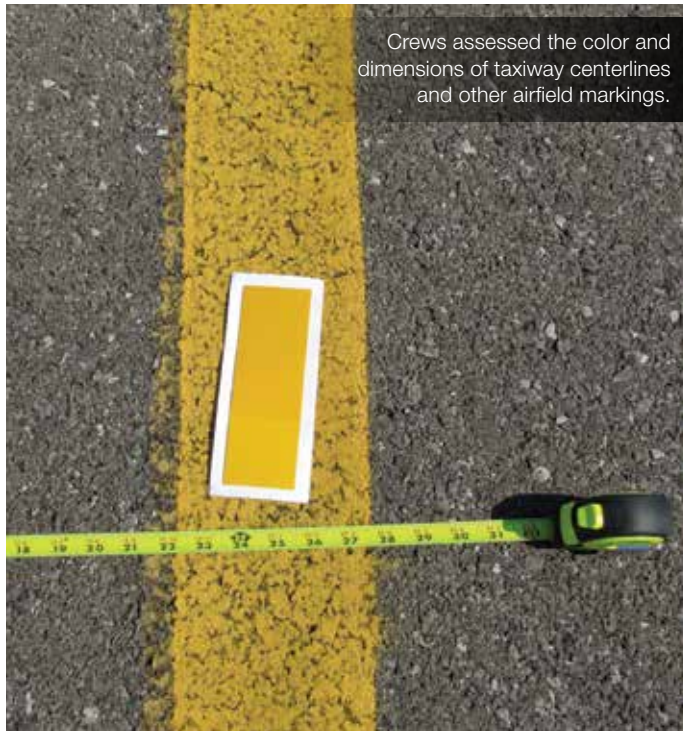
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Crews assessed the color and dimensions of taxiway centerlines and other airfield markings.

fall indicate that the state's general aviation airports are generally in the "low good range" with a composite score in the low 50s on a 100-point scale.



RANDALL BURDETTE

"The markings results were enlightening," Burdette observes. "We found [that] several general aviation airports were in good condition, with many only requiring cleaning due to the growth of fungus. We did find a few where new markings would enhance the pilot's ability to see the runway in low lights conditions."

In addition to assessing current conditions and providing cost estimates for ongoing maintenance, the report recommended coordinating certain projects—for instance, to ensure that fresh markings are not applied before new overlays are installed. In some cases, asphalt concrete preservation was recommended to repair airfield surfaces while the pavement is still in good condition, thereby extending the airfield asset's lifecycle. Based on the condition of markings, airport engineers will decide if preservation treatment should be applied around markings, or markings should also be repaired while the treatment is applied.

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The aviation department plans to use survey results to help each airport update its seven-year plan for maintaining pavement and airfield markings, says Burdette. The report will also be used to request state and federal funding.

General aviation airports will need to fund 20% of their marking improvement projects, Speidel notes. The state provides the rest of the funds.

Study Prelude

State aviation officials weren't enthusiastic when Sightline approached them in 2009 about a statewide airfield assessment. In fact, their initial reaction was "Why?"

The department had not heard from facility operators about problems with markings, and officials were hesitant to spend the money, explains Speidel. They did, however, test the concept and process by funding 80% of a markings study at Manassas Regional Airport (HEF), the state's third-busiest general aviation airport.

The findings were eye-opening, recalls HEF Operations Officer Richard Allabaugh. "We had not looked at markings that way before," he comments. "We are trained to look at various areas of the airfield and only on some aspects of airfield markings. We got

an education to look at reflectivity as well as the durability of our markings."

Last year, HEF logged nearly 79,000 operations and was home to more than 400 based aircraft. Because the airport is located in a flood plain, the high water table deteriorates its markings, explains Allabaugh. Some had even seeped into the asphalt. Snowplowing also reduces the longevity of HEF's markings, he adds.



RICHARD ALLABAUGH

Using new product specifications, Sightline recommended a thicker Type 3 paint that includes rust and algae inhibitors and is designed to last longer than previous formulas.

Crews applied the new paint in 2011, and three years later, the condition of all markings at HEF had improved. Airport officials were so pleased with the results that they expanded the scope of a runway expansion project during the second year of the markings study and restriped the whole runway with Type 3 paint.

Improvements at HEF convinced state officials about the potential value for other airports, and the Department of Aviation incorporated markings evaluation into its statewide assessment

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program. Federal funds paid for 90% of the pavement testing and state funds covered 100% of the cost for markings evaluations.

Marked Differences

To assess the condition of existing markings, Sightline crews measured nine different attributes at various points on each runway, taxiway and apron. At times, they crawled on their hands and knees, using magnifying glasses to inspect tiny glass beads.

The scoring system includes numeric ratings of 0 to 100, with corresponding descriptions of poor, fair, good and excellent. Ratings express performance in three keys areas: durability/paint adherence; visibility, which includes reflectivity and color; and compliance with FAA requirement for dimensions and alignment. Information is aggregated, but separate scores are developed for each runway, taxiway and apron.

Many airport operators simply don't think about airfield markings, Speidel remarks. Most treat airfield markings as if they are highway striping. "This is how it's always been done," she laments. "For the last 15 years, we have been working to change the culture and mindset to understand what fits highways doesn't fit airports."

If paint is applied correctly, markings that are properly cleaned with low-pressure power washers can last five to seven years, says Speidel. Putting new paint on top of peeling paint is a "waste of time" because the new paint new will also peel, she emphasizes.

While centerlines typically represent just 10% of an airfield's markings, it is common for airports to repaint all markings when repainting the centerlines. "Everything does not need to be painted as frequently," Speidel advises.

Airfield markings are especially critical at general aviation airports without lights, she adds. Although most of Virginia's general aviation airports have runway lights on both sides of the runways, high-visibility markings are still important for safe nighttime navigation. Given the limited lighting at many general aviation airports, Speidel notes that they can often benefit more from higher quality materials than commercial airports. ✈️

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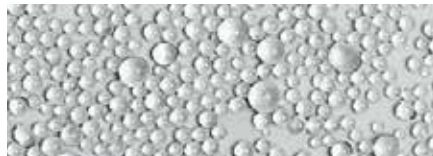
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Fort Lauderdale-Hollywood Int'l Regains Lost Parking Revenue

FACTS&FIGURES

Project: Improving Parking Operations

Location: Fort Lauderdale-Hollywood Int'l Airport

Parking Capacity: 15,400 spaces, including 7,800 in garages & 3,750 in remote economy lot

Find Your Car Kiosks: 6 in terminals; 12 in garages

Parking Management Company: SP+

Valet Parking System & Reservations Vendor: AVPM

Software Provider: HUB Parking Technology

Automated Parking Guidance System: Park Assist

Mobile App Development: Phunware

Market Research: Mars Research

Customer Assistance Features: Smartphone app that details parking availability to visitors before they arrive at airport; automated guidance to available spaces; kiosks & app feature to help customers locate lost vehicles

Key Benefits: Improved customer service; recapturing business previously lost to off-site parking competitors



In 2009, parking operations at Fort Lauderdale-Hollywood International Airport (FLL) were basically on life support. With volume and revenue sliding at alarming rates, the executive team drafted Doug Wolfe, FLL's chief financial officer, to revive the ailing profit center.

"Our customers were abandoning us and we were losing parking revenue," recalls Wolfe. "The off-airport parking businesses grew from 2% to 12% of market share. Something had to be done."

Wolfe consequently assembled a team and launched a multi-disciplined plan to fix the problems. He describes the approach as "Business 101."



DOUG WOLFE

With new equipment and service policies in place, parking revenues at the southeastern Florida airport now exceed previous levels—and additional programs such as tiered pricing and new loyalty incentives are still to come.

3 Major Challenges

The team began by engaging Mars Research to determine what was alienating passengers flying out of FLL. Results highlighted three main issues: the physical condition of facilities, customer service and technology.

FLL's physical shortcomings were evident to researchers. Signage, for instance, was confusing and made it difficult for customers to find the proper garage and navigate through it. Often, they would get lost trying to exit, Wolfe relates.



BY KRISTIN VANDERHEY SHAW



“Without a guidance system, our customers circled around and were spending so much time trying to find a space that they were missing flights,” he recalls. “That is a huge failing on our part, because the last thing passengers want to do is spend their time looking for a place to park. You can imagine what it’s like to be a passenger in a huge garage when you can’t find a spot; it’s stressful.”

Guests also expressed safety concerns about dim lighting. “Security was one of the attributes that came through loud and clear,” Wolfe remarks. “Security is a high priority for our customers.”

Walk-through inspections identified green mold growing on sidewalks, broken delineators and insufficient maintenance in FLL parking garages and surface lot.

“It was no wonder our customers didn’t have a good impression,” reflects Wolfe. “If you go to a restaurant and it’s dirty, you don’t want to eat there. It was the same idea with our parking situation.”

Inspired by customer feedback and market research, FLL literally cleaned up its act. Wolfe and his team took a hard look at the parking facilities and issued work orders for pressure washing, cleaning, painting and a variety of general repairs.

With the physical condition of parking facilities improving quickly, the team turned its attention to the second issue that the research firm identified: customer service.

“We had become complacent about customer service,” Wolfe acknowledges. “We changed the parking management company and put an emphasis on taking care of our customers. Our customers deserved more than we were providing.”

The new parking management company, SP+, devotes significant resources to customer service training, analyzing and responding to customer feedback, and monitoring customer service satisfaction levels, he reports.

Early meetings with the new management company were undoubtedly interesting, as FLL’s customer service representatives were averaging 11 calls per day from customers who couldn’t find their cars. That added up to about 4,000 calls annually, which tied up significant amounts of time and resources that could have been spent handling other issues.

Lastly, FLL updated the technology in its parking facilities. During a due diligence review, Information Systems Manager Angela Scott carefully considered the options that would work best for the airport.

“It is important to show that we are up to speed regarding current technology,” says Scott. “Tech is a huge part of parking, and not just the gates and ticket spitters. There is a huge component of tech that our customers want and need.”



ANGELA SCOTT

Implementing Change

According to Wolfe, it became apparent that FLL needed a guidance system. Previously, the airport was known as an easy-in, easy-out facility. But its strong reputation came under duress during a period of major passenger growth. Last year, the airport handled a record 26.9 million passengers.

After 1½ years of in-depth conversation and research, FLL chose Park Assist to provide it with automated equipment to help guide customers to parking spots. The New York-based company designed and installed its camera-based system, with LED lights, cameras and digital signage in each aisle on every floor of FLL’s two main garages.

“We have garages that range from four to nine levels, and on any given floor we might have 1,000 spaces,” says Wolfe. “Passengers are anxious, and all they want to do is park and get to their gate. This seems intuitive, but it had escaped us. The guidance system solves that issue.”

Now, passengers can see at a glance what is available to them—starting with digital signage before they arrive at the airport and the airport’s new smartphone app that displays the number of parking spaces available on each floor in every garage.

“Passengers can identify which garage they want to park in before they even get to the airport,” says Park Assist Chief Executive Officer Gary Neff. “That allows the customer to decide where they want to park or verify availability near their terminal.”



GARY NEFF



Customers who forget where they parked can get help from self-service kiosks or the airport's mobile app.

Inside the garages, digital signs indicate how many spaces are open on a given level and the levels above. Along individual aisles, red lights signal occupied spaces; green lights indicate available spaces.

Although Park Assist has implemented camera-based parking systems at airports elsewhere in the world, FLL is its first project at a U.S. airport. The company also conducts significant business with shopping centers, which underscored its emphasis on customer service to Wolfe.

The airport opted for Park Assist's system that uses dual cameras installed above driving lanes for unobstructed views of parked vehicles and the spaces around them. Wolfe's team considers the camera system a key element in the success of the airport's Park Surveillance software extension, which offers expanded security that would otherwise be cost-prohibitive. Information that streams in from the camera-based system allows personnel to review turnover rates, determine the length of time specific vehicles have been parked, and identify vehicles that may be a threat.

According to Park Assist, FLL is the first U.S. airport to use a camera-based parking guidance system. "We use cameras integrated with a power processor as opposed to ultrasonic technology," explains Neff, noting that ultrasonic systems provide a simple yes/no response about whether a spot is occupied. "For the same money, or even less, we install a camera system with a brain over the aisle that can see four spaces and provide considerably more business intelligence than just a space being occupied."

Cameras capture the license plate number of each vehicle that enters a garage and record the location where it parks. If customers forget where they parked, they can enter their partial license plate number or full ticket number into one of the 18 "Find Your Car" kiosk in FLL's terminals and garages. The system locates the lost vehicle and displays a photograph and map that details its exact location. A similar Find Your Car feature is also available on FLL's new app, which the airport created with a national mobile platform developer.

FLL awarded the project to Park Assist last summer, and the new system was implemented by the end of the year. Together, the airport and vendor created a plan to install the new guidance system for 6,000 spaces while keeping the garage fully operational. "We installed the entire system down the center of the aisle while business was running," recalls Neff. "We re-routed traffic but didn't shut anything down."

Currently, Park Assist is integrating its system with a web-based software system from UK-based HUB Parking Technology that controls all the parking services and technologies for managing FLL's parking facilities. Park Assist also provides the airport with real-time analytics and reporting and analyzes operational data.

Beginning in October, FLL's mobile app will allow passengers and other airport visitors to make parking reservations and redeem customer loyalty rewards on their smartphones.

The valet service introduced in November 2015 is already a big hit. "The first three months we offered valet on the curb, we logged 1,200 reservations and we hadn't even advertised the service at that point," reports Wolfe.

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Harnessing the Analytics


With various fixes in place, parking revenue now exceeds previous levels; but Wolfe isn't ready to sit back and relax. "Parking is a consumer product," he emphasizes, noting that passengers can park offsite or arrange Uber or limousine rides instead of parking at the airport. "We need to understand how that's occurring and why," he adds. To do so, the team will initiate another round of market research to collect fresh data, which should provide a better understanding of how the airport is performing and how customers perceive it.

Another project in the works is tiered pricing. FLL plans to integrate Park Assist's Select-Rate software with its existing revenue control system to vary the price of parking rates—charging higher fees for premium spaces closest to the terminals, for instance. Much like the airline seating model, which allows passengers to choose premium seats for an additional cost, FLL's tiered parking will allow customers to select premium parking at a higher price. Data collected from ongoing operations will be used to develop the new system. Wolfe notes that Park Assist's analytics was one of the reasons FLL selected the company.

"We believe garages can provide a higher level of service by enabling customers to purchase parking when and where they want," says Neff. "This functionality will allow airports to charge regular or premium parking dynamically. We really believe in tiered pricing; it's going to catch on, and Fort Lauderdale is one of the first to do it."

"There is a huge appetite for reservations, and in the next 90 days we'll be able to introduce tiered parking and reservations via the website and our app," reports Wolfe. "We'll use the lighting system to identify nested areas available for advanced booking. In Europe, 80% to 90% of the spaces are reserved, and we're looking forward to rolling out that technology here."

FLL also plans to implement a new customer loyalty program with discounts for frequent parkers by October.

"In my opinion, a lot of airports in the U.S. look at their parking as a utility," reflects Wolfe. "If you ignore your parking, it affects the airlines, and that affects air service. Airport management's responsibility is to ensure that air service is at the appropriate level and cost is part of the equation. Airports need to pay attention to parking as a business." 



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New Train Line Opens “Corridor of Opportunity” at Denver Int’l

BY KEN WYSOCKY





From its very inception, Denver International (DEN) has been a noteworthy U.S. airport, but it recently joined the international big leagues with the addition of a rail connection and a striking on-airport hotel/transit center complex.

“All of the world’s better airports offer some kind of mass-transit system,” says Stu Williams, DEN’s senior vice president of special projects. “Along with the hotel, it makes Denver an even more desirable place to fly into as well as a more attractive place to live and work. So it leads to more business, more passengers and more flights.”

Last year, DEN served about 54 million passengers and was ranked the sixth-busiest airport in the United States. The new 23-mile rail connection and associated \$582 million hotel/transit center are expected to boost airport and convention business by making ground transportation and accommodations more convenient for passengers.

Moreover, the new infrastructure is expected to spur millions of dollars in real-estate development along the rail line. And signs of an aerropolis sprouting up around DEN already are emerging.

New Options

DEN passengers can now travel to or from downtown Denver via electric train for \$9 in about 37 minutes. The new public transit option is also a major benefit for many of the 35,000 employees who work at the airport.

The hotel and transit center, which is owned by the airport and operated by Westin, opened last November after about four years of construction. The new rail line, which began service in April, is operated by a public-private partnership between the city’s Regional Transportation District and an investment group called Denver Transit Partners. DEN used General Aviation Fund revenue bonds to build the hotel and transit center, as well as the last 2,000 feet of rail-line infrastructure leading to the hotel complex.

The new airport/downtown rail line represents one leg of the \$2.3 billion FasTracks expansion program that will eventually add 122 miles of lines to Denver’s system. “The rail line provides a real convenience for travelers, who now can get into Denver’s central business district very easily,” says Williams. “It’s important to the airport and to the traveling public, and it’s also the responsible thing to do environmentally...because mass transit reduces the city’s carbon footprint.”

Combining the hotel and transit center into one facility is not only convenient for DEN customers, it is also environmentally strategic, because the integrated building occupies less space than two separate facilities. “It’s a very synergistic situation that benefits everyone,” Williams notes.

The 14-story hotel includes more than 500 soundproof rooms, 37,500 square feet of meeting/conference space and two ballrooms. The structure’s sleek, swooping roofline offers an architectural nod to DEN’s signature billowing tent peaks, and the largely glass-walled edifice provides vast views of the airport, city skyline and Rocky Mountains. Overall, the facility is expected to generate \$1 million to \$2 million per year for DEN the first five years, and possibly more after that.

“Keep in mind that we’re designated as an enterprise agency within the city of Denver, which means the airport doesn’t receive any tax dollars,” Williams informs. “So we operate only on the revenues that we generate ourselves. The more revenue we generate, the more money we have to expand the airport and make it better.”



STU WILLIAMS



FACTS&FIGURES

Project: Hotel/Transit Center; Rail Connection to Downtown

Location: Denver Int’l Airport

HOTEL/TRANSIT CENTER

Cost: \$582 million

Funding: General Aviation Fund revenue bonds

Hotel Owner: Airport

Hotel Operator: Westin

Projected Revenue: \$1 million - \$2 million/year for first 5 yrs

Opened: Nov. 2015

Architect: Gensler

Hotel Details: 519 soundproof guest rooms; 37,500 sq. ft. of meeting/conference space

Site Prep General Contractor: Kiewit Corp.

General Contractor: MHS Tri-Venture (Mortenson Construction; Hunt Construction Group; Saunders Construction)

Project Management: Airport, with support staff from Parsons Transportation Group

Associated Terminal & Roadway Wayfinding/Signage: Gresham, Smith and Partners

Design Details: Airport train station is located 5 minutes from TSA checkpoints & includes bag drop & boarding pass printers for certain airlines; hotel features glass walls for sweeping views of airport, city & nearby mountains

NEW RAIL LINE

Location: Connects airport & downtown Denver

Length: 23 miles

Ride Time: 37 min.

One-Way Fare: \$9

Train Car Manufacturer: Hyundai Rotem

Top Speed: 79 mph

Capacity: 340 passengers (seated & standing) per each 2-car train

Design Detail: Luggage racks near doors for large bags, golf clubs, skis, etc.; level boarding to accommodate passengers with luggage and/or those with physical challenges

Service Began: April 2016

Expected Ridership: 18,600 passenger trips/day

Key Benefits: Faster, more convenient public transport for travelers & employees; economic-development ripple effect along rail-line corridor

The hotel and new rail connection were specifically designed to burnish Denver's standing as a premier destination for conventions, conference and meetings. The city's location—no more than a 3½-hour flight from virtually anywhere in the continental United States—has always been an advantage, notes Williams. "By adding the conference center, it's now more convenient than ever to fly in, hold a meeting, stay overnight in a hotel and fly out," he remarks.

Long-Term Vision

Ever since DEN opened in February 1995, officials had envisioned an airport-based hotel and a commuter rail line that would work

in tandem with the city's other mass transit options, such as buses and light rail. The airport has long been served by buses, but the new rail service is more reliable in bad weather and isn't subject to traffic congestion, comments Tina Jaquez, public relations manager for Denver's Regional Transportation District.



TINA JAQUEZ

Even though voters approved funding for the new rail line in 2004, construction didn't begin until 2010 because it took six years to complete the necessary environmental impact studies. The project was further delayed when revenues collected from

the special sales tax that was implemented to raise funds for the project were lower than expected due to the nationwide economic recession, Jaquez adds.

The new rail service uses 66 Hyundai Rotem cars, each 85 feet long. Powered by over-head catenary electric lines, they run at a top speed of 79 miles per hour and are similar to those used on commuter lines in Los Angeles and San Francisco.

The cars on the new line, known as the new University of Colorado A Line, run in pairs, each with capacity for 91 seated passengers and 79 standing passengers, for a grand total of 340 riders per pair. Trains run every 15 minutes during peak travel times and every 30 minutes from 3 to 5 a.m. and 6:30 p.m. to 1 a.m. Ridership is expected to reach 18,600 passenger trips per day, Jaquez reports.

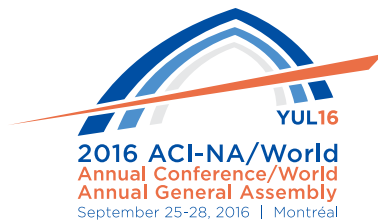
The cars and stations were designed for passenger convenience. All the stations feature level boarding to accommodate travelers with luggage and/or those with physical challenges. Inside the trains, luggage racks are located near doors to make it easier for passengers with large bags, golf clubs, skis, etc.

Convenience Was Key

The transit center's 800-foot-long loading platform is located on the "ground floor" of the complex, under the Westin Hotel. After passengers disembark, they're just a few hundred feet and a five-story escalator ride away from the airport's TSA checkpoint, located in DEN's central Jeppesen Terminal. (Regional Transportation District buses stop at the opposite side of the same platform.)

"The idea was to get the transit center as close as possible to the terminal," Williams explains. "If you get off the train and aren't checking luggage, you can get to the security checkpoint in about five minutes—you're that close to the terminal."

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Taking place September 25 - 28, the 2016 ACI-NA/World Annual General Assembly, Conference and Exhibition will bring all sectors of the global aviation industry together in Montréal. As one of the world's major aerospace centres, there is no better place to discuss the latest trends and strategies aimed at moving the industry forward safely, securely and sustainably.

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There is a checked bag drop location near the loading platform for passengers flying on United Airlines, Delta Air Lines, American Airlines and Southwest Airlines. And six self-service kiosks allow passengers flying on United, Southwest, British Airways, Lufthansa and Icelandair to print their own boarding passes. Travelers can also purchase train tickets on the platform from vending machines that accept cash or credit cards.


DEN hired Gresham, Smith and Partners to help travelers to find the new hotel/transit center, both before and after construction. "Large projects always have a ripple effect on an airport's wayfinding system that extends well beyond their physical footprints, and the new transit center and hotel at DEN is a great example," says Jim Harding, spokesman for the architectural and engineering firm. "The ripple effect of these two projects extended throughout the main terminal. All the wayfinding was upgraded with a new sign overlay to guide customers to the new facilities."

Because the hotel was completed last year, before the transit center opened, wayfinding changes had to be executed in phases. "We intentionally left space open to add messages about the transit center when it opened in 2016," explains Harding.

Early Returns

According to local sources, the hotel and new rail line are already living up to economic expectations. In a move that city officials believe could jumpstart aerotropolis development, Panasonic Enterprise Solutions is currently building a headquarters complex just outside the airport. Located near the first train station stop west of the airport, the facility is expected to generate \$82 million of economic impact within the region and eventually spur the creation of up to 400 jobs.

The new mass transit connection, plus the appeal of building in a very walkable, livable area, helped encourage Panasonic to locate in Denver, says Heath Montgomery, a media relations spokesman for DEN. The company reportedly chose Denver over 22 other major U.S. cities.

"This is a major world player in the technology industry that otherwise might have gone to a city like Dallas, San Francisco or Chicago," Williams notes. "The rail line truly represents a corridor of opportunity." 

More information about DEN's hotel/transit center can be found in our January/February 2016 issue.

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The Importance of Disability Compliance

Q: When it comes to ensuring that facilities accommodate all visitors, what special groups of travelers/guests do airports need to remember?

A: Airports need to consider the needs of individuals with disabilities, senior citizens and all those with mobility and cognitive challenges. Federal statutes and regulations prohibit discrimination against any individual with a disability in connection with the provision of transportation service and require that airport operators ensure that terminal facilities and services be accessible to individuals with disabilities.

Discrimination based on age is also prohibited. All travelers and users of our nation's airports deserve and should expect accessible facilities.

Q: What does the audit process entail?

A: The FAA reviews airport facilities, policies and contracts with airlines, tenants and transit providers. The factors for selecting airports for review include passenger volume, the number of people with disabilities in an airport's immediate metropolitan area, inquiries from the public and others, potential compliance issues and the amount of FAA grants an airport has received.

Following an on-site review, the FAA issues detailed findings, and then enters an agreement with the airport operator for corrective actions. Compliance reviews are supplemented by significant airport training and technical assistance. We also invite airports to participate in conferences and webinars regarding airport access issues.

Q: Why is compliance so important?

A: Airports are often the gateway to cities. Millions of individuals with



MAMIE MALLORY

Mamie Mallory is the FAA's assistant administrator for Civil Rights. As such, she is the principal advisor to the administrator on civil rights, equal employment opportunity, diversity and affirmative action. She also serves as the FAA diversity advocate and leads the agency's efforts to create a positive environment that supports and encourages the contributions of all employees.

disabilities travel through our nation's airports each year. Therefore, it is critical to remove barriers to airport accessibility. Also, studies have shown that even small improvements in airport connectivity can yield large changes in airport use for the nearly 20% of Americans with disabilities.

Additionally, airports are economic engines for many communities—by some measures, accounting for 5% of the overall U.S. economy.

It is important to note that our role regarding full accessibility is not limited to onsite compliance reviews. It also includes review of airport policies and procedures, training, guidance, technical assistance and complaint investigations when necessary.

Q: What are the most common “problem areas” in airports?

A: Proper maintenance is a continuing challenge, including accessible restrooms, providing operational telecommunication devices for hearing impaired guests and enabling closed captioning on televisions in public areas. Other important details include providing an accessible path through the facilities (i.e. clear floor areas and eliminate protruding objects) and ensure that doors don't require an appropriate level of force to push or pull.

Ground transportation issues include providing and maintaining accessible aisles in curbside loading/unloading areas and ensuring that shuttle services meet key requirements for vehicle configurations and service practices.

It is also important to adequately address the needs of persons with disabilities in emergency evacuation plans. This is one area some airports forget, but it is crucial.

Lastly, airport contracts often omit required clauses related to disability law compliance. We are working to increase awareness of this issue.

Q: What are easy ways to improve access and service for all?

A: Airports benefit from clear policies and communication. Effective maintenance policies require regular evaluation of features, including bathrooms, water fountains, door force and vehicle lifts. Secret shopper programs are an effective second-level check, particularly for services such as wheelchair assistance, information desks, wayfinding and inter-terminal shuttles.

Airports are already required to evaluate their facilities and programs for disability law compliance, and they should use the opportunity of an FAA compliance review to identify challenges and solutions. It is also important to make public information easy to understand and provide it in accessible formats. Finally, it is important that airport operators provide recurrent training to staff and tenants that addresses how to properly serve individuals with disabilities. ✈️

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