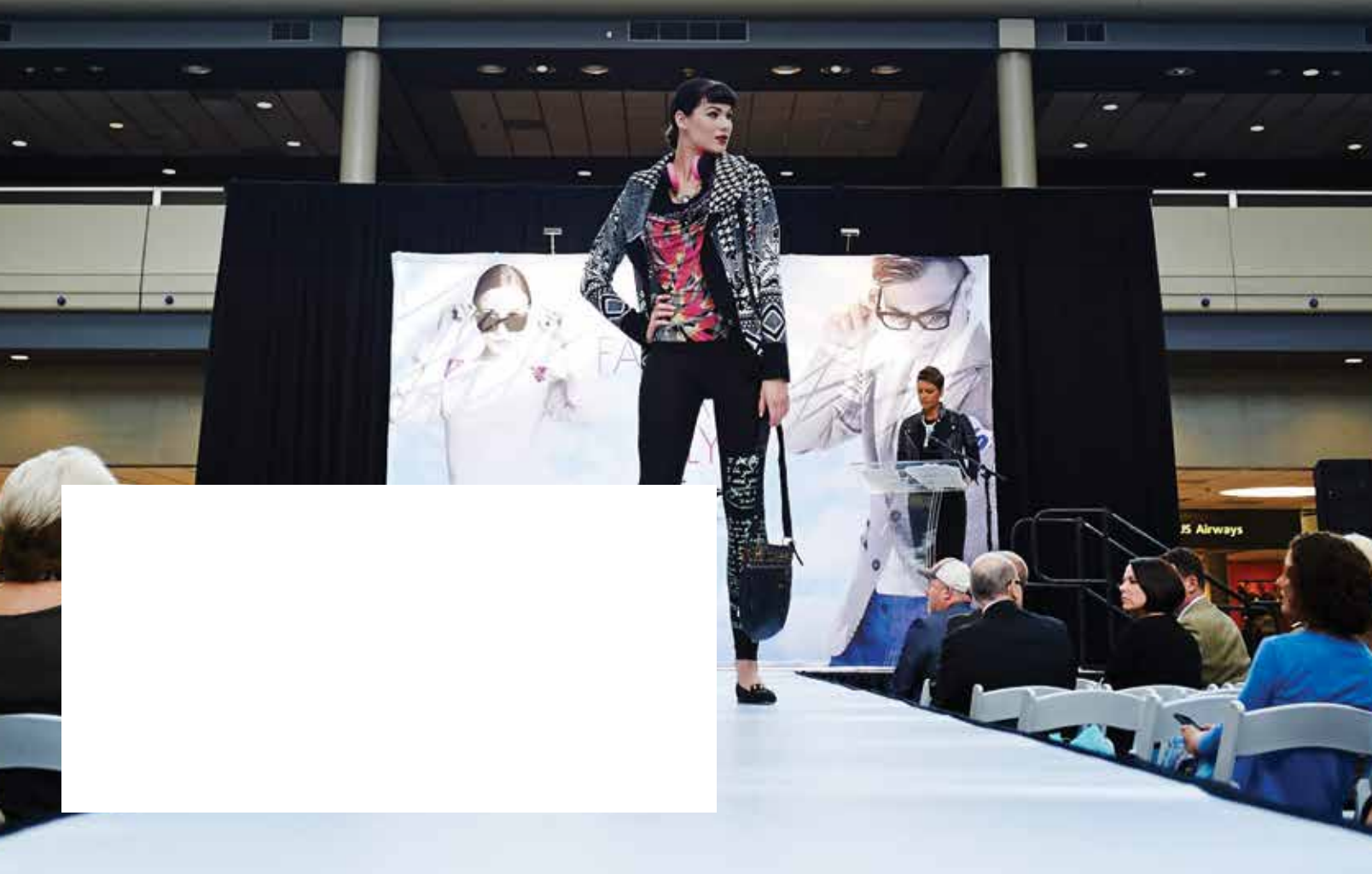


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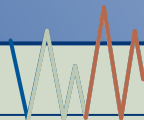
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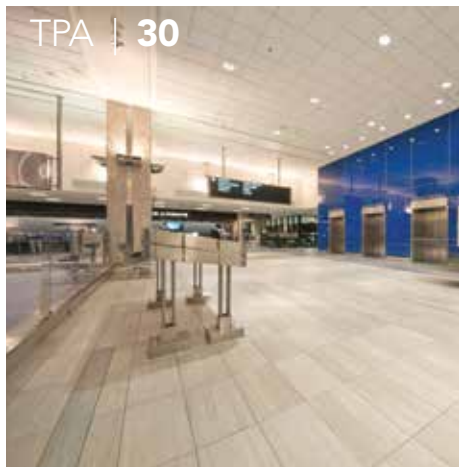


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What's Good for the Goose ...

It's a New Year. We have the same party in both houses of Congress, Moody's has changed its outlook for the U.S. airport industry to positive from stable, and both enplanement growth and the U.S. economy are expected to be robust in 2015.

But despite these positive indicators, the stage is still not properly set for airports to move ahead.

What's the problem? Money. (No surprise here!) More specifically, the problem is the money that airlines are raking in with ancillary fees vs. the purchasing power airports are losing in PFCs. The airlines are opposed to any increases in passenger fees except those they impose themselves.

To review, airlines collected about \$3.5 billion in bag fees and \$2.9 billion in change fees last year. Because this revenue isn't taxed like fares deposited into the Airport and Airway Trust Fund, airports lose out. I'm sure some ancillary revenue is used for investment, but plenty becomes dividends for airline shareholders.

Now let's look at airports. PFCs have been capped at \$4.50 since 2000. Unlike airline profits, virtually all PFC money is meant to be reinvested in airport facilities. And the total

dollars available to airports is woefully inadequate. Increasing PFCs to \$8.50 would amount to a mere fraction of what airlines collected in bag fees last year.

To be fair, baggage and change fees are not the only sources of airline revenue. Similarly, PFCs are not airports' only source of revenue.

What's my point? The airlines argument that higher PFCs will harm the industry does not hold water. Increased ancillary fees have not reduced passenger traffic. Rather, they've led to record airline profits and an opportunity to invest in their product. They're a success!

What I'm suggesting is that airports also need to invest in their product to grow and better serve the public. PFCs are an efficient, much-needed source of funds for airports. Opposing them is selfish and without merit.

Cheers,

Paul



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Meridian & Hattiesburg-Laurel Regional Partner

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Project: Securing New Airline Service

Location: Meridian (MS) Regional Airport; Hattiesburg-Laurel Regional Airport (Moselle, MS)

Carrier: ExpressJet, operating under Skywest for American Airlines

Supporting Mechanism: Essential Air Service Contract

Air Service Consultant: Sixel Consulting Services

Carry-on Carts: Adaptive Engineering

Potable Water Cart: Davco

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Strategy: Market the combined passenger potential of 2 nearby communities when appealing to carriers for new service



After losing their respective carriers and being declared “dead” by one consultant’s study, two southern Mississippi airports have joined forces and secured shared service with the help of a new consultant and an essential air service contract.

In early November, Meridian Regional Airport (MEI) and Hattiesburg-Laurel Regional Airport (PIB) both celebrated the beginning of new service to Dallas/Fort Worth International (DFW) on ExpressJet, operating under Skywest for American Airlines. After picking up passengers at PIB, 50-seat regional jets continue to MEI, just

60 miles north, to pick up additional passengers before heading to DFW.

“Do you know how much fun it was to announce we had jet service with American?” asks Tom Williams, president and chief executive officer of the Meridian Airport Authority.

Pride notwithstanding, Williams stresses that he doesn’t take the new service for granted and MEI will do everything it can to ensure its success. To help seal the deal, the airport is taking counter and ground



Tom Williams



Meridian Regional is pulling out all the stops to support its new regional jet service.



to Attract & Grow Air Service

By Jodi Richards

handling services into its own hands to support the new flights.

Similar Service Struggles

Williams explains that when he started at MEI in 1986, the airport served about 30,000 passengers per year on three airlines. American Airlines was the first to leave MEI, after closing its Nashville hub in 1990. Then Northwest Airlines ended service in 2002, leaving only Atlantic Southeast Airlines, code-sharing with Delta Air Lines, until October 2012.

When jet fuel prices climbed above \$3 per gallon, Delta announced it could no longer serve the market profitably — despite good passenger loads, notes Williams. Being an essential air service carrier, the

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airline gave its withdrawal notice, and then rebid for the service with a subsidy for the 2008-2010 contract and again for the 2010-2012 term. Williams says he was surprised, though, when Delta did not bid for the next two-year term.

Instead, MEI received a single bid from Silver Airways, for service to Hartsfield-Jackson Atlanta International (ATL) on 34-seat Saab 340s. And the airline had “trouble after trouble” that inhibited its ability to be successful at MEI, Williams notes. For example, Silver expected a code-share arrangement with Delta that never occurred; and the airline was initially not listed on any reservations sites, so travelers had to book their ATL flights and then purchase separate tickets to MEI. Additionally, half of MEI’s traffic is military, but the airline was unable to secure Department of Defense approval to carry military personnel.

“Once you got on the airplane, then it was great — good airplane, great on-board customer service,” recalls Williams. “But they left a lot to be desired on the (ground-based) ends of the customer service side.”

Silver Airways’ last flight at MEI was Nov. 5, 2014 — the very day after the airport’s new service with American began.



Tom Heanue

PIB has a similar history, notes Executive Director Tom Heanue. Shortly after Delta Air Lines merged with Northwest Airlines, Delta discontinued its flights between PIB and Memphis International.

After Silver Airways obtained the essential air service contract for PIB, business was initially good but began to falter about eight months later. Passenger volume fell from between 900 and 1,200 per month to a “dismal” 250, reports Heanue. “With EAS (essential air service), there are a lot of hoops to jump,” he reflects. “We were barely jumping one and stumbling badly over the others.”

Neighbors Turned Partners

While experiencing similar struggles, PIB and MEI hired the same firm under separate agreements to assist with air service development. Sixel Consulting Group promptly advised Williams and Heanue to “get in a lifeboat together.”

Mike Mooney, Sixel’s executive director of Air Service Strategy and Development, explains that it was natural to pair the airports to entice a more sizable carrier, because the airports are close geographically and have similar markets and boardings. Combining the two cities allowed the airports to present a more



Mike Mooney



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appealing market to the airline — one capable of supporting regional jet service, Mooney explains.

PIB and MEI then developed joint and individual presentation materials, and visited airlines together. They also hit the streets in their respective communities with data to create excitement about growing air service through a partnership.

“Together, we had enough horsepower to get [Skywest] interested,” Williams relates. “Together, we’re going to make this work.”

Other consultants gave the airports nothing but doom and gloom, Heanue recalls. “But with Sixel, there was hope.”

Had the two airports *not* worked together, Williams believes neither would have been able to attract Skywest to its market.

“Without putting two communities together, I don’t think we would have gotten the quality of the bid in service that we’ve got,” Heanue agrees. “We would have something, but I don’t think it would have been something that has the opportunity. That’s the key to this one: the opportunity to grow; the opportunity to succeed.”

Ultimately, Heanue would like to see both airports become self-sustaining, without the need for essential air service subsidy.



Their current partnership affords both the opportunity to realize that dream, he says.

“In my opinion, they don’t even belong in the EAS program,” Mooney says. “They’re both vibrant, significant communities. Hattiesburg-Laurel and Meridian were an easy sell for me. We just had to package them correctly and get the concept in front of the right people.”

He further predicts that if MEI and PIB maintain their current momentum, they will probably outgrow the need for an essential air service agreement.

“In today’s world, communities need to be regionally minded,” Heanue adds. “A lot of times we can’t attract businesses or airlines ... conventionally. We need to come up with a coalition

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After picking up passengers at Hattiesburg-Laurel Regional, the new service continues on to Meridian Regional before heading to Dallas/Fort Worth Int'l.



and make it feasible for a carrier to come in and bring service to the area.”

In November, Skywest was providing two weekday flights and one weekend flight, all to DFW. According to Williams, American's willingness to be “aggressive on pricing” will help MEI grow its passenger numbers.

MEI's catchment area is a 12-county region with 300,000 residents; and its closest major competitor is Jackson-Medgar Wiley Evers International Airport, about 90 miles away. There, travelers can access flights to six cities on American, Delta and United Airlines. To MEI's benefit, Southwest Airlines left the airport, allowing MEI to be “pretty competitive with Jackson,” says Williams.

PIB's catchment area includes about 130,000 people, but it secures business from just 10% to 12% of that population, reports Heanue. The rest go to airports in Gulfport, Jackson and

New Orleans — all within a couple hours drive of PIB, he notes.

Heanue contends that most local residents want to support PIB, but higher ticket prices and/or unreliable service inspire them to head down the interstate to other airports.

All In

Williams considers MEI's new flights with American the “last chance to keep air service in the community” and feels officials have to do everything in their power to make it work. “Customer service at the counter is a big piece of that in our mind,” he specifies.

Williams recalls Silver experiencing some sort of “operational meltdown” during its final days at the airport. At the peak of Silver's struggles, the airline cancelled 43% of MEI's flights in one month alone. “Whatever the meltdown was, it lasted about two months and just devastated the community's confidence in the carrier,” Williams recalls. “And as an airport, you can't speak up for an airline that does that. When is it going to happen again?”

He cites the airline's practice of staffing its ticket counter for only two hours at flight time as a major service problem.

According to Williams, if passengers are not treated well, they simply don't return to an airport. And he cites his airport's recent statistics as an example: In 2013, MEI boarded 6,981 passengers; from January through October 2014, it boarded 3,226 passengers.

No matter whose employees fail to deliver good service, the airport stands to lose, he reasons. To prevent similar service shortcomings for current and future passengers, MEI bid for and won the contract to provide customer and ground support services for its new carrier.

“We had to have excellent customer service; there's no choice,” Williams emphasizes. “I appreciate that there are people in the business making money doing good ground handling. We just did not have a confidence level that we would get that.”

As a result, MEI now employs four full-time and eight part-time workers to fill those roles.



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"We saw it as a means to survival," he explains. "When you're that close to the edge of losing everything, you just can't put your future in somebody else's hands. You've got to take care of it yourself."

Customer service experience was the first and foremost attribute the airport considered when hiring employees to support the new flight service, Williams notes.

Securing the Business

Williams explains that the airport elected to take a "revenue-neutral position" with its bid to provide ground handling services. Under the resulting two-year contract, MEI covers personnel and ground handling equipment costs, and American Airlines pays for employee training, ticketing equipment and technical support for MEI. "We are yet to know if we made a good deal or not," Williams says. "If we break even, we're real happy. But we hope we're going to make a little bit."

He and other airport officials reason that if MEI's counter and ground handling personnel provide great customer services, passenger numbers will improve; and as that happens, rental car and concessions revenues will also increase.

At one time, MEI had three rental car companies, with revenues totaling \$100,000 per year. Today, the airport has one rental car company with roughly \$20,000 in annual revenue, and Williams says it only stayed because the airport reduced its rent and concession fees as traffic declined.

Bringing ground handling services in-house is also eliminating some costs. Security services previously provided by an outside contractor are now handled by airport employees, Williams explains. Ground handlers may also begin to perform custodial work inside the terminal building between flights. "So we're seeing more revenue in some areas; less cost in others," he relates. "We think bidding in a revenue-neutral way should be an overall win for us. It's just more efficient that way."


Because the airport has operated the field's fixed-base operation since 2004, it already had much of the ground handling equipment needed to service regional jets. It did, however, invest \$75,000 in additional equipment, including a used potable water cart, used belt loader, two new bag carts and new a valet cart. The airport's most expensive new piece of equipment is a \$50,000 deicer purchased by the FAA.

The Meridian Airport Authority also invested about \$50,000 in terminal improvements to prepare for the new service. "It's our last chance to get it right," Williams explains. "And to the extent that any of these things can help

us, we just don't have a choice but to do everything in our power to make this work."

Increasing enplanements will not only increase airport revenue, it will also yield more federal support in entitlement money, Williams points out. The last two years, MEI has fallen below the 10,000 passengers per year threshold, thus reducing its entitlements from \$1 million to \$150,000. "To the extent that customer service can make the difference, there's \$850,000 in grant money on the line; there's more parking, rental car and vending revenue on the line. And we hope we can grow some other areas of revenue in the terminal as we develop this," he explains.

Continuing its strategy of pulling out all the stops to support its new service, MEI contracted a public relations firm and earmarked \$200,000 for marketing and advertising.

Naturally, airport officials won't know for some time if their investments will pay dividends; but the mood is optimistic in the meantime. "So far, so good" is how Heanue characterized the new service in mid-November. In 18 flights, American Eagle service from MEI and PIB to DFW yielded the same amount of business PIB logged during the last few months of Silver flights. Monthly passenger totals on Silver ranged from 200 to 250; and PIB had already served 250 passengers during its first half-month with American. 

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Bar Harbor Airport Makes the Most of its Terminal Improvement Budget

By Victoria Soukup

factsfigures

- Project:** Terminal Expansion/Renovation
- Location:** Hancock County-Bar Harbor (ME) Airport
- Owner:** Hancock County
- Primary Elements:** Terminal addition; upgraded security area; new post-security restrooms & amenities
- Original Cost Estimates:** \$3.1 million
- Actual Final Cost:** \$2.5 million
- Funding:** Airport Improvement Program (90%); Maine Dept. of Transportation (5%); airport (5%)
- Prime Consulting Engineer:** Hoyle, Tanner & Associates
- Airport, Structural & Site Civil Design:** Hoyle, Tanner & Associates
- Mechanical/Electrical Engineer:** Lanpher Associates
- Architect:** Lewis + Malm Architecture
- Contractor:** Nickerson & O'Day
- Seating:** Arconas
- Surveys:** Delta Construction Services
- Flooring/Mats:** Paul G. White Tile Co.
- Signage:** Bangor Neon
- Electrical:** Fortier Electric Co.
- Sprinkler System:** Maine Fire Protection Systems
- Key Benefits:** More space; increased customer comfort; updated security checkpoint



Hancock County-Bar Harbor Airport (BHB) overcame significant financial challenges to remodel its facilities.

And in the end, the small Maine airport doubled the size of its terminal, upgraded its security area, added new customer conveniences and generally made the building more aesthetically pleasing and energy efficient.

The \$2.5 million facelift, completed late last year, increased BHB's terminal from 5,000 to 10,000 square feet. It also created separate arrival and departure areas — a critical upgrade for small airports, due to post-9/11 security requirements. (BHB logs about 34,000 total operations annually.)

But the project required intense number crunching to keep it within budget. A collaborative effort by airport officials, the contractor, design team and engineering consultant cut nearly 20% from the original \$3.1 million cost estimate.

"I commend the efforts of the entire team," says Airport Manager Bradley Madeira. "The \$600,000 we trimmed was a large percentage of the original bid. From the contractor to the designers and the consultant, they all worked with us to get the numbers to where we could afford it. And despite some frustrations along the way, everybody really did a great job."



Bradley Madeira

Architect Rick Malm, of Lewis + Malm Architecture, agrees: "In the end, we got as good a building as we originally proposed through working hard with the owner and the contractor." Looking back, Malm is proudest of providing the airport with almost everything it originally wanted, despite subsequent budget cuts.



Rick Malm

Designers stretched the airport's budget by using carpet tiles in most of the terminal.



FAA Airport Improvement Program funds financed 90% of the project, and the Maine Department of Transportation and airport each paid 5%.

Years of Prep

Planning for the remodel started more than eight years ago, when airport officials realized they needed to consider expanding BHB's terminal to accommodate more passengers. They also wanted to improve TSA screening, which was previously confined to an inefficient and uncomfortable 240-square-foot glassed-in area where passengers waited after clearing security without access to restrooms or concessions.

"The original building was designed in a pre-TSA era," explains Madeira. "There were really no provisions in the building for a proper TSA screening point. People were essentially funneled through a very small checkpoint and quarantined into a very small glass box. It was like a fishbowl."

Heavier traffic during summers exacerbated the problem, and the post-security room was often too small to fit everyone scheduled for a specific flight. "It sometimes took two or three screenings to fill the airplane," he recalls. "Our passengers just didn't have enough room on the secure side."

Unfortunately, budget restrictions became very apparent when BHB secured a cost estimate for improvements. "When we got the numbers back,

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Meeting TSA's needs was an important part of recent renovations.



Before



we learned it was way more money than we could spend," Madeira recalls. "We needed to 'value-engineer' a lot of the items out of the project."

Lanpher Associates, the project's mechanical/electrical engineering designer, had a clear view of how the team reduced original cost projections. Lanpher's Dennis Riley, PE, chronicles the primary cuts:

- reducing most of the renovation work in the existing terminal;
- changing the curved roof to a shed roof on the expanded section;
- cutting exterior lighting by half;
- eliminating custom curved air slot diffusers; and
- reconfiguring some ductwork

The process of deciding what to cut and what to keep pushed the project's schedule back, notes Madeira; but it wasn't the only factor that added drag. A delayed grant offer



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from the FAA and weather-related shutdown stalled the project. "Building in Maine is not the easiest thing, especially as winter is approaching," he relates. "You have mile markers you have to get through, or you have to wait until spring. Nothing happened as quickly as we all thought it would happen."

Construction of BHB's 5,000-square-foot addition began in September 2013. Work crews adding the extra space did not cause any operational disruptions, because the northeast end of the existing building acted as a dividing wall that separated the construction zone from the original building, explains Madeira.

These days, the new addition houses the arrival and departure areas, complete with restrooms and vending machines in the post-security portion. Ticketing and rental car operations remain in the original part of the terminal, and were upgraded with new counters, cabinets, flooring and lighting, Malm notes.

Officials originally wanted tile flooring throughout the building, but budget constraints limited the use of tile to the main rotunda. Carpet tile was consequently used everywhere else.

Specific TSA Needs

One of the biggest challenges for the architects was ensuring that TSA's needs were met. "There are a lot of very unique design criteria for small airports because they don't have the staff a bigger airport has," Malm relates. "That was a big part of the design – understanding the differences."

Large airports often handle arrivals and departures at the same post-security gates; but small airports like BHB, which has just a handful of daily flights to/from Boston, require a different configuration. Malm explains that separate areas need to be created, because small airports don't qualify for the additional TSA personnel needed to ensure that security isn't breached while arriving and departing passengers use the same gate.

"We designed the facility so the arrival area is on the other side of security from the departure area, so there wouldn't have to be a TSA employee there to monitor a secure exit point where people are coming off the plane," he elaborates.

Another challenge was ensuring that there was enough seating for all passengers in both the pre- and post-security areas. "We had to have the same amount of waiting area on the one side of security as the other because all the people move at once," he explains, noting

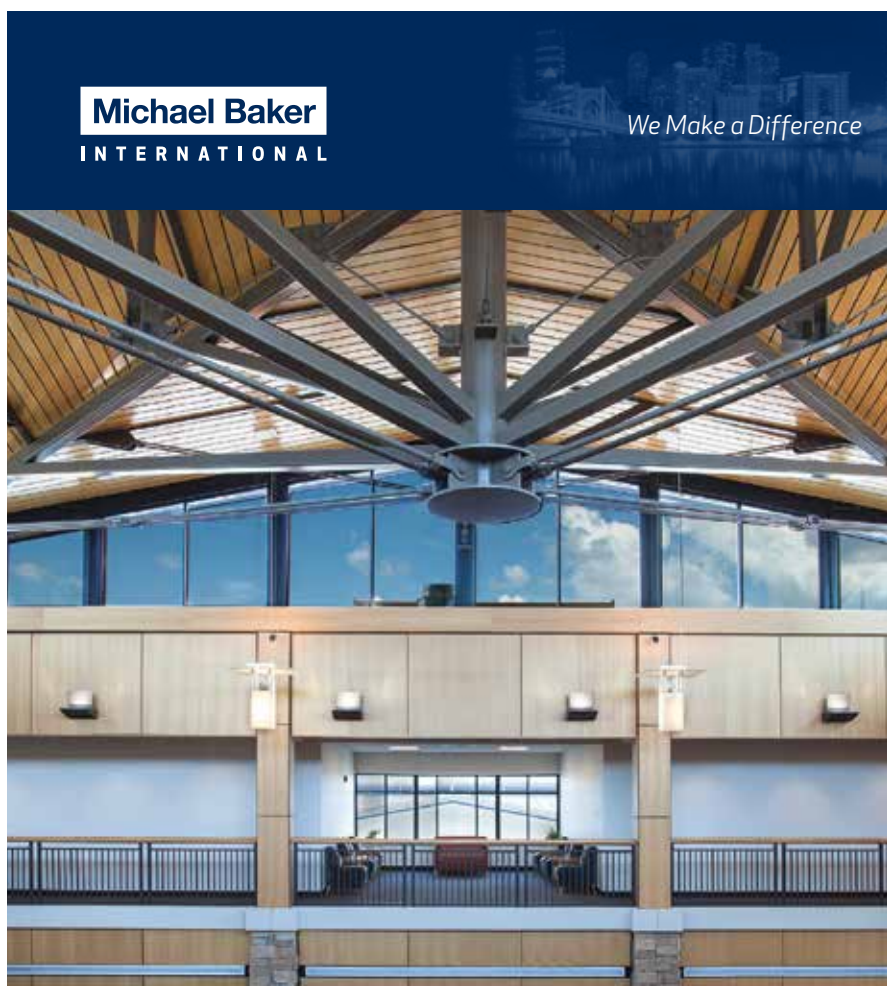
that TSA employees manually inspect all baggage. "They don't matriculate through TSA all day long like they do in a larger airport."

Hoyle, Tanner & Associates, BHB's prime consulting firm, performed a balancing act to meet TSA space requirements and ensure that terminal upgrades met FAA funding requirements.

"Certain activities are considered eligible for Airport Improvement Program funding, and many are not," notes Karen J. Frink, PE, the company's project manager. "It was a challenge



Karen J. Frink



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that required constant contact with the users and collaboration on solutions. We worked closely with the contractor to mutually identify areas of the design that could be modified to reduce the scope while not sacrificing practicality.”

Other upgrades included energy-efficient elements in the original building and addition. LED lighting was installed throughout the

facility, and landside airlock vestibules were constructed to keep the building warmer in winter and cooler in summer.

Crews also installed new siding on most of the building’s exterior. “We really wanted the building to have a seamless look, so it didn’t look so obvious that we had one new section and one old section,” Madeira says.

NEW

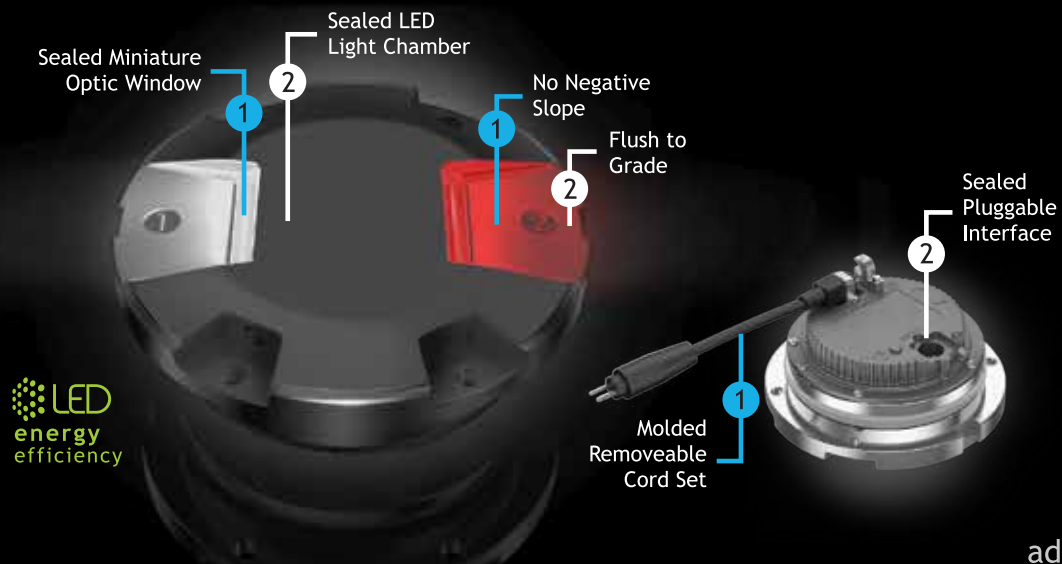
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Designers added a large window in the departure area to offer passengers views of nearby Acadia National Park and Jordan River, and raised the terminal's roof to distinguish it from the neighboring airport rescue and firefighting facility, which was constructed in 2009. Apparently, it wasn't unusual for passengers to knock on the fire station door looking for their departure gates.

"The older terminal didn't look like a terminal," Malm explains. "So when we designed the terminal addition, we made a high roof and light it up at night so people could clearly see the terminal building."

Friends & Flexibility


Frink advises other airports considering similar renovation or expansion projects to cultivate and maintain close working relationships with the FAA and TSA. "We suggest you keep multiple federal agencies coordinated and get to know each local and regional station manager in order to keep the project 'local' in their perspective and keep them invested in the project."

She also stresses the need for flexibility in floor plans: "Space requirements for TSA, airlines and vendors change as technology and rules and regulations change. I have been designing airport

improvement projects for over 30 years, and the only thing that hasn't changed is change itself."

Riley notes the importance of familiarizing all parties with the change order process to eliminate unexpected additional costs. He also advocates hiring an independent estimator/accountant to provide regular construction cost estimates to ensure budgets are in line.

He also believes that consensus is vital when it comes to finish materials for ceilings, walls and lighting. "The owner must be on board with these features, or they will probably get cut at some point in the process," he notes.

With BHB's many project decisions made and executed, Madeira says that the new terminal is a much-needed improvement for Hancock County. "The passenger experience going through here is now more similar to what they get at other airports, with the exception that we have a higher level of customer service," he comments. "We can offer that because we have a smaller number of people to cater to, and because we have a very dedicated group of airline, TSA and rental car agency staff who are very good at what they do." 

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Oakland Int'l Gains New Public Transportation Link

By Kristin Vanderhey Shaw



Getting to and from Oakland International Airport (OAK) is drastically easier for many passengers since the new connection opened in November between the airport and California's Bay Area Rapid Transit District (BART) train system.

OAK's financial share of the project was \$45 million — just less than 10% of the total cost. "It's important that we invest in transportation infrastructure that serves today as well as into the future," explains Deborah Ale-Flint, Director of Aviation for the Port of Oakland.



Deborah Ale-Flint

The airport partially funded its slice of the public transit project through passenger facility charges. "The airlines understood that there would be great value," says Ale-Flint. "The way we put this project together, we have more capital to deploy to continue to modernize our facility and improve the passenger experience."

BART officials predict that most days, the new 3.2-mile line connecting its Coliseum Station and OAK will carry between 2,000 and 3,000 passengers. Trains run 8 a.m. to 8 p.m. every day at five-minute intervals during peak travel times and 10 and 20 minutes apart during off-peak hours. Travelers taking BART to the airport will get off their BART train at the Coliseum Station, and use escalators, stairs

or elevators to reach a bank of fare gates and waiting areas to ride the new connecting line to the OAK Station. They arrive at the airport just across from Terminal 1 and a short walk to Terminal 2.

Previously, riders had to haul their luggage up a flight of stairs at the Coliseum Station and catch an AirBART shuttle bus, which sometimes ran late because of road congestion. Needless to say, the train-stairs-bus-plane sequence was unappealing for business travelers accustomed to smoother transition in other cities.

Interestingly, the new BART connection may affect the dynamic between OAK and San Francisco International Airport (SFO). East Bay residents who used to fly from SFO because it had an easier transit option may now go to OAK, because it's closer, explains BART spokeswoman Alicia Trost. "Now, both OAK and SFO have quick connections to the airport," she comments.

Let's Ride

The mood was festive at the November grand opening of the new connector, with riders raving about the scenic views from the elevated tracks. Expansive glass windows on the train's cars provide 360-degree vistas of the airport, golf courses, business parks and freeway crossings during the eight-minute ride between the Coliseum and OAK stations.

OAKLAND INTERNATIONAL AIRPORT **I**  **OAK**

factsfigures

Project: Public Transit Connector

Location: Oakland (CA) Int'l Airport

Transit Provider: Bay Area Rapid Transit District

Distance: 3.2 miles

Design & Construction: Flatiron-Parsons Joint Venture

Equipment: Doppelmayr Cable Car

Approx. Budget: \$484 million (in 2009 dollars)

Cost to Airport: \$45 million

Collaborative Partners: Alameda Co. Congestion Management Agency; Alameda Co. Transportation Improvement Authority; CA Dept. of Transportation; CA Transportation Commission; Federal Transit Administration; Metropolitan Transportation Commission

Expected Riders: 2,000-3,000/day

Fee: \$6

Key Benefits: Simplifies transit to/from the airport; relieves road & parking congestion; offers "greener" transit option

“The people riding on opening day were glued to the window looking at the surrounding areas and commenting on the potential of economic development,” reports Trost. “This connector could reignite the area.”



F. Trip Belote

The convenience it is already providing to OAK’s arriving and departing passengers is copious — and valued. Executives from Doppelmayr Cable Car, the Austrian firm that supplied the trains and control systems, stress the importance of connecting airports to large public transportation networks. Doppelmayr Vice President F. Trip Belote refers to such connections as “the lifeblood of expansion” for some airports.

Belote considers OAK’s recently added transit service a great opportunity due to the proximity of the BART system and the multi-modal links the new connector provides. “I think the growth of the airport will be sustained and enhanced through this project,” says Belote. “An airport is like a city, and these feeder systems allow the economic growth of the airport.”

The new transit connection is particularly valuable, given the upsurge in traffic at OAK during recent years and projections for continued growth. It not only allows more riders to get to and



from the airport more easily, it will also help alleviate associated roadway congestion and parking challenges.

“With the airport in Oakland seeing so much capacity potential, it’s great to look at what the options were before the new service and after,” elaborates Trost. “The AirBART bus could serve 700,000 riders per year. (The new train connection) can serve 3 million comfortably; and we can expand.”

The driverless format of Doppelmayr’s cable-propelled system will likely have many of those riders scratching their heads. Trains travel on elevated tracks to the wheelhouse, where they

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automatically switch to a different cable that pulls them along a track to the airport, explain company personnel.

Realizing that a driverless train may initially seem unusual to some riders, Trost emphasizes that the system operates under a watchful eye at all times. “The wheelhouse that runs the train is staffed 24 hours a day,” she explains. “There are real-time cameras in the cars, and someone is always there, watching. There will be an employee on the platforms and traveling the trains, and there is always staff watching the video feeds.”

Decades in the Making

OAK’s new transit link dates back to the 1970s, when the Port of Oakland and BART realized they needed a better connection to the airport. As years passed, ideas were considered and proposals generated, but the necessary parties could not reach an agreement; and the public balked at the idea of funding it.

“This project has had its share of ups and downs,” relates Ale-Flint.

In 2009, the initiative gained traction, and a team was assembled. A joint venture of Colorado-based Flatiron and California-based Parsons Corp. was selected to design and construct the project. That’s also when Doppelmayr Cable Car was selected to provide the trains and control systems.

“Together with Parsons, our goal was to provide a solution that met the challenge and was also economical,” says Richard Grabinski, senior vice president of Flatiron’s Western Division. “Some systems were not economically viable, such as heavy self-propelled cars. Those created the need for a substantial guideway with large concrete foundations, columns, rails, etc. We recognized that the Doppelmayr cars, which are much lighter, could be streamlined and much more efficient.”

The Flatiron-Parsons joint venture team thoroughly investigated Doppelmayr’s technology and methods, recalls Grabinski. Cable-propelled peoplemovers were touted as less costly to build, operate, and maintain over a traditional self-propelled system, and less visually obtrusive. Given the existing environment — a thriving airport in a busy California area — the system seemed like a good fit, he recalls. But it would undoubtedly be something different for the U.S. market.



Richard Grabinski

“Parsons is a very conservative company, and we did our due diligence to see if cable-propelled cars were something with which we wanted to be associated,” recalls Parsons Vice President Dave Benjamin.

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“We needed to confirm that the system could be made to meet the same high levels of safety as conventional automated people movers. The conclusion we reached was that European companies have very developed standards, and we were satisfied that the technology was right for the project.”

Doppelmayr also brought worldwide transit experience to the project, including the marquee train system at Pearson International Airport in Toronto.

The company’s cable-propelled system could easily be built in and around the existing airport space, and the open steel truss guideway structure would be more aesthetically pleasing than the concrete guideways of more traditional systems, explains Belote. Additionally, the system’s streamlined high-capacity cars would mean less congestion and traffic at the airport.

Doppelmayr’s systems are built on ideas that have been used for more than 100 years, most recognizably on cable cars and ski lift systems, notes Belote.

In 2010, the Flatiron/Parsons/Doppelmayr firm was officially announced as the system provider for the automated guideway transit system. The team decided to start with four three-car trains, powered by a central station, with a cable providing tractive force.

“It’s simple, proven base technology,” says Belote. “The vehicles don’t have complex on-board assemblies, such as drive motors, gearboxes or brakes; there are a lot of benefits to that in terms of maintenance.”

For more information about the development of project, see the January/February 2011 issue of *Airport Improvement*.

Money Matters

With operating costs estimated at \$4.9 million for the first year and expectations for inflationary increases to follow, BART directors set the fare for the connector at \$6. And the Port of Oakland and BART assembled a patchwork quilt of county and state funds to make the project work.

OAK lined up finances for its \$45 million portion, using passenger facility charges to cover some of the costs. “Ultimately, this is a partnership between BART and the airport,” says Ale-Flint. “It makes a lot of sense that the regional transport system realizes the airports are important to the Bay Area.”

The joint venture participants could also foresee the project’s potential benefits. “With any airport, it’s hard to justify high-capacity transit service, because at the end of the day airports are not huge passenger generators,” says Benjamin. “However, half the people coming into any airport are visitors, and they are looking for local transportation. A rapid transit connection is a huge attraction. Look around the world and you’ll see that most major airports have convenient rapid transit access. It’s an important element for an airport to remain competitive.”

With the players and funding in place, construction began in 2011. BART and the project team established weekly taskforce meetings to solve the many detailed

A new rapid transit station is making it much easier for many passengers to get to and from Oakland Int'l.



challenges that occur on a complex project in an urban area. In addition to the project team, meetings included representatives from major stakeholders such as OAK, the city of Oakland and major utilities. The California Department of Transportation was also included, because the guideway would be built over Interstate Highway 880.

“Co-location was a real key to our success,” Benjamin comments. “All of the partners co-located in one office to improve communication. We were able to get all of the benefits of working in the same office and resolve problems as they came up.”

OAK was an important stakeholder in the project, he adds. “We had to work carefully with them to ensure that our construction had the least possible impact on airport passengers and employees. We listened to their input and worked hard to satisfy their concerns. In the end, we delivered a major project on the airport with minimal impact to ongoing airport operations.”

Because the track for the connection runs above the parking area in front of OAK’s terminal, planners had to work carefully with parking lot operations to ensure that there was enough parking for passengers throughout the project.

Grabinski advises other airports considering similar public transit projects to include the airport right away. “Ultimately, they will benefit from it, even though it competes with their parking,” he explains. “Allowing them a seat at the table at the right level was very important. They have been excellent partners along the way, and their input was invaluable because we could really cut to the chase and react quickly.” ✈️

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Automated Self-Serve Bag Drop Saves Travelers Time & Increases Airline Efficiency at Halifax Int'l

By Robert Nordstrom

factsfigures

Project: Automated Self-Service Bag Drop & New Baggage Handling System

Location: Halifax (Nova Scotia) Stanfield Int'l Airport

Approx. Cost: \$17 million (Canadian)

Associated Terminal Improvements: \$45 million (Canadian)

Screening/Sorting System Installation: 13-14 months

System Changeover: Dec. 2013

Kiosk Installation/Check-In Hall Construction: 5-6 months

System Debut: June 2014

Consultant: MMM Group

Architect: McMillan Associates Architects

Construction Manager: PCL Constructors Canada

Baggage Handling Design & Manufacturing: Beumer Group

Conveyors: Glidepath New Zealand

Baggage Handling System Controls: Cofely Services


Baggage Image & Weight Info System Software: Trihedral Engineering

Bag Drop Devices: IBM

Common-Use Bag Drop Application: Brock Solutions

Honors: 2014 Ingenious Award from Information Technology Association of Canada

Of Note: First fully automated self-service bag drop in North America; transition from 5-level to 3-level baggage handling system; addition of explosives detection equipment

 Recent enhancements to baggage handling at Halifax Stanfield International Airport (YHZ) are setting new precedents for efficiency in the front of the house and behind the scenes. A fully automated self-service baggage drop is the first of its kind in North America; and associated backroom systems have more than tripled the Nova Scotia airport's overall handling capacity.

Airport authority officials estimate costs for the improvements at \$17 million (Canadian).

"Increased operational efficiency was our primary goal," says Michael Healy, vice president of Infrastructure and Commercial Development.



Michael Healy

Previously, YHZ's peak baggage handling capacity was about 600 bags per hour. Now, it can handle up to 2,000 bags per hour, with complete redundancy at 1,000 bags per hour. Installation of a third piece of screening equipment (a contingency built into the design) would increase the system's capacity to 3,000 bags per hour, notes Healy.

Given the system's inherent new efficiencies, the Canadian Air Transport Security Authority (CATSA) has been able to

reduce the staff needed to recheck images and perform manual searches at YHZ — a change that lowers operating costs.

Two-Step Walk-Thru Process

YHZ's new check-in hall features a row of 31 self-service check-in kiosks that runs the entire length of the facility and 16 self-service bag drops, positioned along the rear wall of the hall. The fully automated system that went online in June 2014 allows travelers to obtain their boarding passes and check bags in a fully automated two-step process. Passengers begin by entering their flight information into a check-in kiosk, which provides them with boarding passes and baggage tags. Next, they walk directly ahead to the bag drops, where they scan their boarding passes and place their luggage on a conveyor.

Although one-step systems that combine boarding pass/bag tag printing and bag drop at a single location are available, YHZ officials chose a two-step system for its speed, size and cost.

"(With the one-step system,) the transaction takes longer," Healy explains. "While travelers are entering information at the bag drop, the equipment is tied up and lines get longer." Bag drops for one-step systems are also more expensive and take up more real estate,

The new check-in hall features 31 self-service kiosks and 16 self-service bag drops.



he adds. "With the two-step system, we can put in numerous kiosks and process passengers more quickly and efficiently. With the number of check-in kiosks and bag drops we've deployed, passengers rarely need to wait in line for a free device."

Under the airport's old system, check-in typically took about 10 minutes; now it can be completed comfortably in less than two minutes and queues have been virtually eliminated, he reports.

Healy cites check-in for West Jet, one of YHZ's major airlines, as an example. Previously, queues began forming at 5:30 a.m. With the self-serve system in place, passenger wait times are minimal even during peak hours, he notes.

"The airlines love the new system," he adds. "By making the process more automated, the airlines are able to deploy their resources more efficiently and redistribute their people to more proactive roles and tasks. The passengers' experience has been made much smoother, as they are able to do baggage check by themselves with airline reps available if needed."

The Information Technology Association of Canada recently recognized YHZ's new baggage drop as one the nation's most innovative technology achievements of 2014. In particular, the association highlighted the system's use of information technology to improve internal efficiencies and upgrade travellers' experience.

The airport's domestic/international system, which has a capacity of 2,000 bags per hour, went live in December 2013; the U.S. Transborder system, which can accommodate up to 1,000 bags per hour, debuted in June 2014.

The backroom bag sorter systems run on two LS-4000econ sorters, manufactured by Crisplant, a subsidiary of Beumer Group. Both systems are fully compliant with new CATSA standards requiring three-level security screening operations with high-speed explosives detection systems (EDS).

Saving Time & Space

CATSA's move to align with U.S. screening procedures required YHZ to replace its previous five-level screening systems, which included X-ray and CT scanners, two baggage makeup carousels and a straight conveyor belt located behind the ticket counters.

The new system uses a tilt-tray conveyor above the hall's ceiling to transport bags from the self-service bag drops to the screening area, which now includes high-speed EDS. After

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screening, bags are delivered to make-up carousels in the baggage hall for transport to aircraft.

The U.S. Transborder area, where passengers clear U.S. Customs and Border Protection (CBP) before departing, was also improved. In the old system, travelers waited while their bags underwent security screening before proceeding to the U.S. CBP inspection line. Under the new system, passengers leave their bags at a bag drop and head to processing stations, while the conveyor takes their baggage to the sortation system in the baggage hall to be screened by new CTX screening equipment. An automatic inline system collects baggage image and weight information and transmits it for U.S. CBP agents to review when passengers present themselves for processing.

Removing its old conveyor and screening equipment allowed the airport to regain 9 meters of premium space at the back of its domestic/international check-in hall. Given the long, narrow configuration of the old check-in hall, the additional real estate was a welcome benefit, notes Healy.



Anthony Williams

Anthony Williams, sales and project manager for Beumer Group, describes the thought process during the planning stage: “The airport didn’t want to expand the building and wanted the baggage system to stay within the constraints of the terminal. This concept allowed for that, which translated into massive savings because they did not have to extend the terminal. It also gave them the opportunity to concentrate on the front of the house and passenger processing.”

Overnight Switch

The airport’s new screening and sorting system was constructed in the back of the house, beyond the view of the travelling public, over a 13- to 14-month period. When installation was completed in December 2013, the team executed a hard cutover to the new system during the middle of the night.

Williams compares constructing YHZ’s new baggage system while keeping its existing one running to performing open-heart surgery on a conscious patient. “You have to work with all your partners to figure out how to keep passenger traffic flowing as the work proceeds,” he explains.

Construction in the public areas of the check-in hall was divided into four blocks and spanned January to June (2014) — ending, as scheduled, in time for YHZ’s peak travel season in July. After the new check-in kiosks and self-service bag drops were installed, the airport opened them up for use one airline at a time.

“It took a lot of cooperation and coordination with the airlines and baggage handlers,” Healy recalls. “We had to develop hardware and software solutions by leveraging internal expertise and engaging outside solution providers.”

Creating the right messaging system was a particular challenge. It not only had to meet new industry standards for passenger processing, but also be “sophisticated and large enough to handle bi-directional interactions with every airline to make sure the new technology actually improved efficiency,” he explains.

TSA Tests Baggage System That Uses Totes

The new baggage system that recently allowed Nova Scotia’s Halifax Stanfield International Airport (YHZ) to increase its peak handling capacity from 600 to 2,000 bags per hour is currently being evaluated at TSA’s full-scale testing center at Ronald Reagan Washington National Airport.

With preliminary test results indicating “no known deficiencies,” Beumer Group officials are optimistic about receiving continued favorable reports and subsequent approval for installation of the CrisBag® system at U.S. airports.

While familiar to overseas operators, the approach taken by Buemer subsidiary Crisplant will be new for U.S. airports. Its system corals each piece of baggage in its own tote during the journey from check-in and early baggage storage through screening and transportation to discharge. Because bags remain inside individually controlled totes throughout the entire handling process (even screening), CrisBag can provide 100% tracking and traceability at every stage, explain Beumer marketing personnel.

The company credits an adaptive tilt mechanism and a gearless drive for the system’s efficiency and reduced energy requirements, and claims the lowest operating expenses in the market.

Using the new tote-based system, YHZ’s current peak handling capacity is 2,000 bags per hour, with complete redundancy at 1,000 bags per hour; but the addition of a third piece of screening equipment would bring the airport up to the system’s overall capacity of 3,000 bags per hour. Installing CrisBag at YHZ was significant for Beumer because it was the company’s first North American placement.

TSA is currently testing the system’s effectiveness in a variety of real-life conditions and situations at its two-story, 128,000-square-foot Transportation Systems Integration Facility near Washington, D.C. Elements being assessed include tracking, throughput, imaging, sorting and the detection of missing, unknown and oversized bags. Testers are also evaluating how fast the system associates specific bags with their individual totes.

For more information about TSA’s testing center, see the July/August 2009 issue of *Airport Improvement*. Visit YouTube for a video of the CrisBag system operating at Helsinki Airport in Finland. ✈️

From an aesthetic standpoint, the project included \$45 million (Canadian) of terminal improvements to create a brighter, more modern check-in hall. Designers raised the roof of the front hall to create a two-story space and added a full-length glass curtain wall and updated finish materials.

“We have renovated almost the entire terminal,” notes Healy, referring to the series of projects the Halifax International Airport Authority has undertaken since it assumed management of YHZ from Transport Canada in 2000.

To date, the authority has spent approximately \$500 million upgrading infrastructure, expanding airside capacity, and expanding and renovating YHZ’s facilities. Key improvements include a new 2,300-space parking facility, updated U.S. pre-clearance facility, new information technology backbone to support a common-use terminal environment — and, now, a self-serve bag drop and three-level handling system. ✈️



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MADE DIFFERENT



Tampa Int'l Accomplishes Major Updates on a Minor Budget

By Jennifer Bradley



factsfigures

Project: Main Terminal Modernization
Location: Tampa (FL) Int'l Airport
Owner: Hillsborough County Aviation Authority
Cost: \$23 million
Process: Design/build
Main Contractor: DPR Construction
Design & Engineering: Gresham, Smith & Partners
Restrooms Rebuilt: 31 (including 11 family rooms on all 3 levels)
LCD Flight Information Displays: 22
LCD Video Walls: 16
LCD Signs & Advertising Screens: 45
LED Signs: Gable Signs
Seating: Agati; Coalesse; Teknion

From new restrooms and giant video walls to updated architectural finishes, Tampa International Airport (TPA) has undergone a gradual yet comprehensive transformation during the last four years. Now that its \$23 million Main Terminal Modernization Project is complete, it may be more accurate to refer to the Florida airport as “43 years young” rather than 43 years old.

The project was already included in TPA's 20-year capital program when Joe Lopano arrived in 2011, but the airport's new chief executive officer helped bring the project to the next level, says Jeff Siddle, assistant vice-president of Planning and Development for the Hillsborough County Aviation Authority. (The authority owns and operates four airports, including TPA.)



Jeff Siddle

“He wanted it to be a real stand-out for our airport,” says Siddle.

With big aspirations and a tight construction schedule butting against the Republican National Convention set for August 2012 in Tampa, the airport implemented a design/build approach and hired the firms of Gresham, Smith and Partners (GS&P) and DPR Construction to see the project through. Crews began work in December 2011.

4-in-1

Four separate projects were completed in three phases, as laid out by GS&P:

- complete renovation and modernization of 31 restrooms
- new tile flooring in Ticketing
- main terminal refurbishment (new seating, technology, finishes, etc.)
- new digital signage throughout three levels of the main terminal



New finish materials were a primary element of the modernization project.



Before

Siddle notes that the bathrooms were one of the largest pieces of the project — and in general, are elements that have a

strong influence on passengers' overall impression of an airport. "It's important for us to put a lot of quality into the restrooms with regard to materials and finishes — which all still fall under the umbrella of affordability; and to have the restrooms be a true impression of our community, which has always been rated as one of the best in the world," he says.

Crews completely reconstructed 10 restrooms from early April to August 2012, finishing just in time for the Republican National Convention. Siddle considers overhauling so many restrooms in such little time one of the biggest accomplishments of the overall project. "The team went through a massive work effort to rebuild those, and it was pretty incredible," he explains.

Visitor Information Centers and video walls were also added in Baggage Claim to serve the convention traffic. Later, crews installed new furniture with power outlets and work surfaces.

On all three levels of the terminal, TPA replaced 22 flight information boards with flat-screen, LED displays on suspended stainless steel housings. It also installed 16 large LCD video walls, new LED signs at escalators and shuttle lobbies and 45 LCD signs and screens that show paid advertisements and area tourism videos.

Previously, TPA had not done much in terms of advertising; but the new video walls have been a boost to the bottom line, reports Siddle. Old static displays in Baggage Claim were swapped out for new, more modern styles that provide an updated look and feel, he explains.

Finish materials were another emphasis of the modernization project. Tile flooring replaced carpeting in the ticketing area; and the elevator cores on all three levels received new red and blue



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glass cladding to cover the 1971 vintage glazed brick walls. The glass railings that replaced the stone guardrails near the escalators drastically improved the look of the building, as did the new flooring and wall panels in the ticketing area, says Siddle.

Updating so many finishes in busy passenger areas was disruptive — especially removing the brick guardrails, he acknowledges. But he's also confident the renovation process worked well because of teamwork and advance planning.

Design-Build Devotees

Brian Robbins, project manager at DPR, was involved in all phases of TPA's multi-year modernization efforts and was one of two on-site project managers. Robbins attributes the success of the project to two main factors: the design team looking for existing components that could remain in place or be incorporated into the new design; and the DPR team being active in the design process, providing feedback on construction and costs before plans were finalized.

Siddle agrees with his observation. "The only way we could have done this successfully is under the design-build delivery mechanism," he notes. "It's been quite a success story for us from a financial perspective and scheduled delivery; and it was generally a small budget."

Involving the contractor from "day one" guided the project toward affordability, but also ensured that it was constructed and phased properly, he elaborates. "That, in itself, was one of



In total, the airport completely renovated 31 restrooms.



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A new gallery showcases airport models as well as art exhibits and the Tony Jannus Trophy.

the major takeaways from this for us,” Siddle reflects. “It actually validated our delivery method.”

Although countless problems can arise during a construction project, Robbins says that the best tool for dealing with them is a design-build team of architects, engineers and builders working together to resolve and minimize issues.



Grant Clifford

Grant Clifford, principal-in-charge at GS&P, concurs with his team members. “To be able to do this work as fast as we did, it really had to be through a design-build process,” he says. “The airport, contractor and designer have to work hand-in-hand.”

The TPA team discussed phasing and scheduling extensively, much to the benefit of the bottom line, he adds. “Having a team that knows how to do that is vital, because 1) you need to have a plan to keep the airport opened normally and 2) if you don’t have a plan, how do you bid the work and get a fair price? You have to create a fair environment for the sub-contractors,” Clifford emphasizes.

Savings derived from using the design-build process was used to fund a new art gallery located in a long, linear space that connects TPA’s main terminal and the adjoining Marriott Hotel. The idea for the new feature began when Chris Minner, the airport’s



vice president of marketing, asked GS&P to create a space to showcase the Tony Jannus Trophy and travelling art exhibits.

The Jannus Award commemorates the first commercial flight in the United States, piloted by Tony Jannus in 1914 between St. Petersburg and Tampa, FL, explains Clifford. TPA’s new gallery allowed it to commemorate the flight’s 100th anniversary last year with a lasting tribute.

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New USO Lounge Gives Military Travelers a Warm Tampa Welcome

Adding a United Service Organization (USO) Welcome Center at Tampa International (TPA) was important to Chief Executive Officer Joe Lopano from the very beginning of the airport's terminal modernization program. And with help from its main contractor, DPR Construction, TPA was able to renovate a former airline ticketing office into a new lounge for active and retired military travelers and their families.

"Our board was behind it 100 percent," recalls Jeff Siddle, assistant vice-president of Planning and Development with the Hillsborough County Aviation Authority. "It was very exciting. Our community rallied behind this; we just provided the space and constructed it for them at no cost."

DPR, in turn, donated \$13,000 from funds raised at its annual charity golf tournament. "We at DPR view USO as an integral part of the community," explains Brian Robbins, project manager with the firm.

As home to MacDill Air Force Base, Tampa has a strong military presence and spirit, notes Grant Clifford, principal-in-charge at Gresham, Smith and Partners. While the new USO center will serve military travelers for years to come, it's especially important now, because MacDill has served as the command center for the wars in the Middle East, notes Clifford.

TPA's new USO lounge provides a private place for military personnel and their families to relax when traveling through the airport. Its amenities include free Internet, television, a reading room, and complimentary food and drinks. ✈



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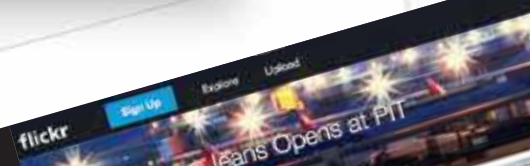
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GO WITH CHANGE

Change was in the air in January 2013 when AIRMALL launched the first phase of a significant overhaul of the retail program at PIT.

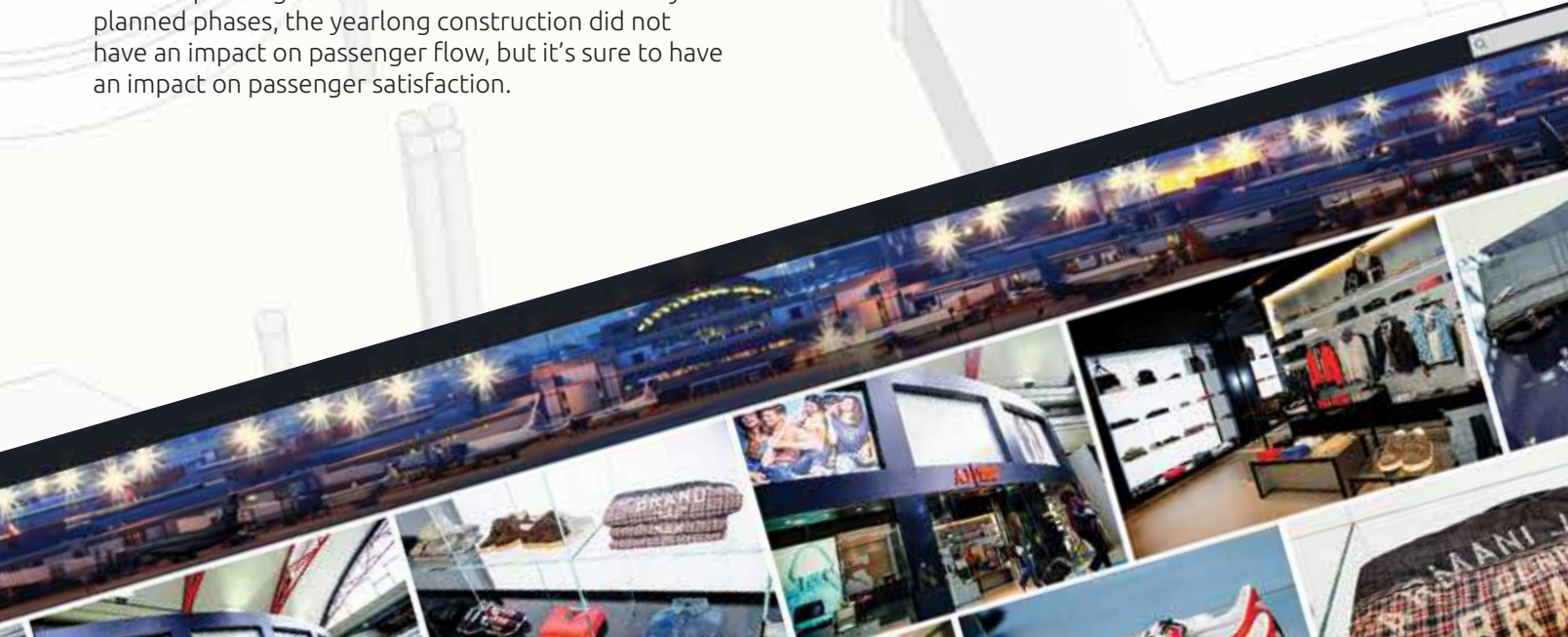
The \$10-million renovation added nine new retail units at the Center Core of AIRMALL between concourses A and B and included a complete renovation to the retail corridor.

While the overall plan added nine units for a total of 77 shops, restaurants, bars and other retail establishments throughout the airport, what it didn't add was passenger inconvenience. Built in carefully planned phases, the yearlong construction did not have an impact on passenger flow, but it's sure to have an impact on passenger satisfaction.

GO WITH CHOICE

AIRMALL has introduced a mix of high-quality national and international brands that people recognize and trust, and high-quality regional/local brands that inject local flavor – providing an opportunity for regional business owners and passengers to discover one another in a mutually beneficial way.

By including these locally owned businesses, AIRMALL hopes to be a catalyst for economic growth and development in the region. AIRMALL encourages local entrepreneurs to take full advantage of the opportunities at the airport and build a business for themselves.



GO WITH DESIGN

Far from cookie-cutter, predictable retail design, the AIRMALL is known for its curb appeal and cutting-edge design. Employing the latest materials and concepts, AIRMALL creates a sense of place.

In conjunction with AIRMALL's Center Core redevelopment, the Allegheny County Airport Authority (ACAA) is including a redesign of its tile floor, which will be installed in phases over the next 14 to 18 months.

GO WITH ART

In a first-of-its-kind collaboration between a local artist and the airport, the Allegheny County Airport Authority will install a new terrazzo floor in the Airside Terminal Center Core.

Allegheny County Airport Authority commissioned artist Clayton Merrell, who has numerous accolades and is an art professor at Carnegie Mellon University, to design the floor.

The central element of Merrell's design, which occupies a space that is approximately 69,000 square feet, or 1.5 acres, is a vast blue sky with clouds, contrails and inlaid silhouettes of aircraft.

He also designed large silhouettes representing five iconic views of Pittsburgh neighborhoods and recognizable landmarks, including Heinz Field and PNC Park, the Smithfield Street Bridge, Monongahela Incline, Cathedral of Learning and historic Carrie Furnace.

GO WITH QUALITY

While AIRMALL enjoys celebrating its infrastructure victories, its most lasting wins come from customer satisfaction, which led to the institution of Quality Service Monitors (QSMs).

AIRMALL was the first airport developer to utilize the QSM program on airport property by conducting in-person intercept surveys with airline passengers who had visited and also made purchases at the AIRMALL. The QSM program is now used at all AIRMALL USA airports and has greatly enhanced customer service.

GO WITH BRANDS

By introducing a host of new specialty brands, the AIRMALL has continued to set the bar for high-end retail in the airport.

AIRMALL values fulfilling the needs of passengers by providing specialty retail concepts and offering a unique experience not seen at retail outlets.

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AIRMALL as seen in Times Square.

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San Francisco Int'l Installs Runway Safety Areas With More Than a Year Left on the Congressional Clock

By Jodi Richards

factsfigures

Project: Runway Safety Area Improvements

Location: San Francisco Int'l Airport

Budget: \$226 million

Anticipated Cost: \$223 million

Funding: Federal grants; airport general revenue bonds

Runways 10L-28R & 10R-28L: Length extensions

Completed: June 2013

Runways 1R-19L & 1L-19R: Engineered Material Arresting Systems

Completed: August 2014

Construction Joint Venture: Golden Gate Constructors (Graniterock Construction & DeSilva Gates Construction)

Construction Manager: Parsons Brinckerhoff

Engineered Material Arresting System: Zodiac Aerospace

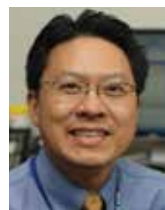
Runway Lighting: Eaton/Crouse-Hinds

Primary Benefit: Enhancing safety by reducing personal injury & aircraft damage during runway overruns, undershoots & veer-offs



San Francisco International Airport (SFO) completed a two-phase runway safety area (RSA) project in early August (2014) — beating its own schedule by one month and finishing more than a year ahead of the congressionally mandated Dec. 31, 2015, deadline for all federally obligated and Part 139 airports.

The new safety features, estimated to cost about \$223 million, are designed to significantly reduce personal injury and aircraft damage in the event of runway overruns, undershoots and veer-offs, per FAA Advisory Circular 150/5300-13.



Jim Chiu

Jim Chiu, project manager at SFO, attributes the timely completion of the program to careful planning and a cooperative partnership among the Federal Aviation Administration (FAA), airport and its project partners. The airport's high traffic volume (41+ million

annual passengers) and unique geographic constraints made planning the project an especially challenging feat.

Because SFO is essentially landlocked, construction options were limited, Chiu explains. The airport's four intersecting runways are sandwiched between the San Francisco Bay on the right and Highway 101 on the left. "There's not a whole lot of real estate to make the safety area improvements the FAA required," he says.

After considering multiple strategies, SFO employed two different methods to comply with the federal mandate. Extensions sufficed for the airport's two longest runways, known as the 10-28s. But improving its North-South runways, 1R-19L and 1L-19R, was not as straightforward. Because they are shorter and primarily used for departures, the airport did not have the luxury of simply adding length, explains Chiu.

Instead, SFO installed an Engineered Material Arresting System (EMAS) from

New runway safety areas required lighting and signage updates.



Zodiac Aerospace on both ends of both runways. Each is a bed of crushable concrete material similar to those used for runaway truck ramps on highways.



Doug Yakel

Phasing was critical for both portions of the RSA project, Chiu notes. Crews were able to complete most of Phase I, which

focused on the 10-28s, during night-time shifts and a series of brief closures that lasted a couple of days, reports SFO Public Information Officer Doug Yakel.

Phase II was a different story, because there simply wasn't an easy way to install the EMAS beds, Yakel relates. Planners conducted "extensive" delay analysis and considered the impact of various options on the airport, airlines and surrounding communities, he recalls. Ultimately, they determined that simultaneously closing the 1-19 runways was the most expedient to accomplish the work.

Simultaneous closures, however, required SFO to operate solely on the 10-28s throughout the summer. Fortunately, the strategy was not new to the airport, Yakel stresses. "It's a configuration we sometimes go to based on wind conditions," he explains. As such, air traffic controllers at SFO are very familiar with the associated procedures, and the

airport felt good about the plan from a safety perspective, Yakel notes.

Preparing for Delays

Planners scheduled the EMAS installations on runways 1L and 1R to begin in mid-May (2014), because much of the work required dry weather; and San Francisco typically receives the least rain during summer. Although the associated runway closures were at odds with airlines' peak travel times, scheduled closures were deemed more desirable than less predictable weather- and construction-driven delays.

As it turns out, delays during construction closures "matched very closely" with the planners' predictions, reports Yakel. Computer models indicated that the airport could expect average delays of 15 to 20 minutes in good weather and up to 30 minutes in bad weather. Actual delays during good weather averaged about 15 minutes during peak traffic, and Yakel reports that delays in less-than-optimal weather were actually the same as if the airport had all four runways operational. (That said, the Bay Area airport is notoriously plagued by weather-related delays.)

To help manage congestion and delays during construction, SFO implemented departure metering, a procedure that has been successful

at New York's John F. Kennedy Airport. Armed with specific individual pushback times, pilots knew that when they got to the end of the runway, they wouldn't sit there for 45 minutes burning fuel; they would be slotted for takeoff promptly, Yakel explains.



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Workers logged 150,000 hours making safety improvements on SFO's North-South runways.



The airport also used FAA's Closely Spaced Parallel Runway procedure to enhance operational efficiency. And SFO airlines made voluntary adjustments to their summer flight schedules.

Advance planning to anticipate and minimize the impact of delays, along with the departure metering system and a quality construction team, combined to make the project a success, Chiu reflects.

To ease the inherent disruptions of construction during the EMAS installation, SFO captured both ends of the two runways and fenced off the construction site so workers inside the fenced area would not require aircraft operating area (AOA) badging. "That was one way of protecting the workers as well as the airfield," Chiu explains.

"Safety and security are our top priority," he continues. "By differentiating the construction site from the AOA, we were able to expedite the work with minimal impact to operations."

In addition, the project's schedule included cushion for "unknowns," adds Yakel. For example, time was budgeted to allow for precipitation, but it didn't prove to be a hindrance. Similarly, there was time built in for crews to deal with airfield surprises such as unmarked utilities; but few materialized. "(There were) no show-stoppers during either portion of the project," he recalls.

Chiu also highlights SFO's process of pre-qualifying bidders and attracting expert contractors by offering incentive bonuses. Both strategies

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helped the airport meet the FAA guidelines within a tight timeframe and under budget. Originally budgeted at \$226 million, the RSA project is anticipated to come in at \$223 million.

Parsons Brinckerhoff provided construction management support to the airport staff during both phases of the runway safety improvement project. Alfred Baniowski, the firm's project manager, reports that crews completed roughly \$1 million worth of civil work each day during the closure of the 1-19 runways. "That's amazing," he reflects. "I still can't believe we did it."

Baniowski attributes the project's success to the partnerships SFO built with all of its team members.

While SFO did not lengthen runways 1L and 1R, it did reconfigure them and relocate their landing lights, navigation systems and other equipment accordingly. Eaton, the airport's power management company, provided LED runway centerlines, holdbars and touchdown zones. It also supplied new runway edge lights and taxiway fixtures.

Robert Scariano, the western region sales manager for Eaton's Crouse-Hinds airport lighting division, says the PROAPF products installed at SFO can use up to 53% less power than other lights, and they will be easier for airfield technicians to maintain.

Crews also constructed a new taxiway leading to the two reconfigured runways.

Community Outreach


Yakel and his team worked to inform as many people as possible about the runway project and its impacts — especially passengers traveling through SFO during runway closures and the communities that surround the airport.



Robert Scariano

In addition to making presentations at city council meetings and holding an airport noise abatement roundtable, SFO personnel spent about six months working with nearby cities that would experience increased air traffic during the temporary runway closures. Printed information was sent to about 12,000 residents who would be most directly affected.

"It's always important to remember neighbors," Yakel notes.

SFO also teamed with FAA personnel to host media days before and after the project. "I think it was very important to be transparent throughout this process," Yakel reflects. 

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Des Moines Int'l & Fort Smith Regional Privatize Aircraft Rescue & Firefighting Services

By Thomas J. Smith

factsfigures



Location: Des Moines (IA) Int'l Airport

AARF Provider: Pro-Tec Fire Services

Terms: 2-year contract with multiple extensions

Year 1 Fee: \$925,000

Staffing: 1 chief, 9 firefighters

Recently Acquired Equipment: New 3,000-gallon Oshkosh Striker; refurbished 1,500-gallon Striker



Location: Fort Smith (AR) Regional Airport

AARF Provider: Pro-Tec Fire Services

Terms: 2-year contract with multiple extensions

Year 1 Fee: \$250,000

Staffing: 1 chief, 4 firefighters

Anticipated Purchases: New truck, 2015; new fire station, 2017.

As the Pentagon converts two Midwestern Air National Guard units from flight training to drone operation regiments, the airports that hosted the units lost their aircraft rescue and firefighting services (ARFF) in the process. Acting separately, both airports turned to the private sector to fill that gap.

On Oct. 1, Iowa's Des Moines International Airport (DSM) and Fort Smith Regional Airport (FSM) in Arkansas turned over their ARFF operations to Pro-Tec Fire Services, the largest private provider of ARFF services in the industry.

While both DSM and FSM received advance notice that their ARFF services would be leaving with their respective guard units, the airport's individual situations differed — and so did their reactions to the news.

Decisions in Des Moines

The Iowa Air National Guard first notified DSM officials in June 2012 that it was considering pulling its F-16 training flights from the airfield. And if the planes went, so would the airport's state-funded ARFF team. One year later,

the final word came that the guard would discontinue its flights at DSM on March 31, 2014, and end its long-standing ARFF arrangement.

Since 1999, the airport had supplied the fire station and one fire truck, and the guard had provided all personnel and remaining firefighting vehicles.

"We were given nine months notice," recalls Kevin Foley, executive director of the Des Moines Airport Authority. "That is when we started looking and planning for our own ARFF."



Kevin Foley

With their previous ARFF agreement officially terminated, airport personnel worked until December trying to establish a service agreement that would leave some guard firefighters in place after the unit left the airfield. Previously, the guard had seven to 10 firefighters on duty each shift, even though FAA rules required only two firefighters for DSM's civilian traffic, Foley notes.



Ultimately, the guard “could not make it work” because of national implications on relationships between other guard units and their host airports, Foley reports.

The airport authority subsequently considered three alternatives: forming its own ARFF unit, contracting with the city of Des Moines Fire Department or outsourcing the unit to a private firm. Just days after the airport issued a request for proposals (RFP) for each option, the guard agreed to continue providing ARFF coverage until Sept. 30.

Given its looming deadline, DSM officials didn’t feel there was enough time to purchase another fire truck and recruit and train firefighters in order to establish its own department. Retraining some of the guard’s firefighters would have saved time, but hiring them would have been costly, Foley explains, because the airport would have had to pay into Iowa’s public employees retirement program — a much more expensive option than most 401(k) retirement plans.

Contracting with the city proved similarly unviable. Although the city fire department provided ambulance and fire coverage for the airport’s terminal and other structures, it was not interested in providing ARFF service under the staffing levels outlined in the airport’s RFP.

Hiring a private provider was DSM’s only realistic option; and Pro-Tec was the only firm that submitted a valid and timely response to its RFP, reports Foley. After the deadline, a group of guard firefighters submitted their own plan to provide ARFF services that was more expensive than Pro-Tec’s proposal.

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Pro-Tec hired most of the new firefighters at Des Moines Int'l from local and regional volunteer departments.



The two-year contract the airport ultimately signed with Pro-Tec includes a fixed fee of \$925,000 for the first year, and three options for one-year extensions. Under the contract, the private firm must provide a department of 10 — one full-time fire chief working traditional weekday hours and nine firefighters who work rotating shifts of 24 hours on and 48 hours off to ensure three on duty each shift.

The drop in staffing levels from between seven and 10 firefighters per shift to three initially elicited public opposition. But airport authority officials put most concerns to rest by explaining that the guard previously maintained higher ARFF staffing levels for the F-16 activities it supported. Officials further explained that the airport would still be staffed beyond FAA requirements with three firefighters per shift. The Pro-Tec contract was subsequently approved in February, and opposition has since “fallen by the wayside,” Foley reports.

Some of the initial pushback stemmed from concerns about timely response to medical emergencies at the terminal. At the city’s request, the airport increased its contract requirements from EMT (emergency medical technician) level to paramedic level.

The higher certification provides more comprehensive first-response capabilities, explains Alan H. Graff, DSM’s chief of operations. A Pro-Tec paramedic will tend to medical emergencies inside the terminal until a city ambulance team arrives.



Carl Thiem

Carl Thiem, Pro-Tec’s general manager, notes that the contractual obligation to provide one paramedic per shift makes DSM unique. Other airports only require FAA-defined advanced first-aid skills, explains Thiem.

Pro-Tec hired firefighters for DSM in June and July, drawing mostly from local and regional volunteer departments. Some veterans it hired came with military ARFF backgrounds.

“We can pay market wages, but our benefits program cannot compare to what municipalities or the state offer their firefighters,” Thiem notes. “We need to be able to attract and retain people. You don’t do that by paying people poorly.”

After training in August, the new unit completed 40 hours of FAA-required ARFF training and a live burn.

Per FAA regulations, DSM is required to have two trucks with a total capacity of 3,000 gallons on hand. To supplement its 1,500-gallon 2006 Oshkosh Striker the guard previously operated, DSM used revenue from passenger facility charges to purchase

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a new 3,000-gallon Oshkosh Striker at a cost of more than \$1 million. In addition, officials spent about \$250,000 of airport funds to purchase a refurbished 1,500-gallon Striker for backup.

By mid-November, the new Pro-Tec team had responded to 11 incidents at DSM since it assumed ARFF duties on Oct. 1.

“The transition has gone well,” Foley reports. “They are professionals, and the company knows what they are doing. They are also very understanding that this is a service agreement and they are here to provide a service. They have a very strong customer service orientation.”

In 2013, DSM logged roughly 85,000 operations — about 2,500 of which were military — and serviced 2.2 million commercial passengers. Currently, the airport is served by four major carriers — American Airlines, Delta Air Lines, Southwest Airlines and United Airlines — and their regional code share partners. It also offers service from two low-cost carriers: Frontier Airlines and Allegiant Air. Annual cargo operations of 63,700 metric tons include a steady stream of Boeing 757 and 767 flights for UPS.

Faster Changes in Fort Smith

FSM faced an entirely different set of challenges when the Arkansas Air National Guard stopped using its airfield to train A-10 Warthog pilots. At FSM, the guard not only provided firefighters, it also owned the fire station and all the firefighting equipment.

Officials at the Fort Smith airport also had considerably less time than their counterparts in Des Moines to develop an alternate plan. The airport and community were aware for about a year that the Pentagon was considering changing its local guard unit’s mission from flying A-10s to operating remote drones. But official word did not come until June that Sept. 30, 2014, would be the last day the guard would provide ARFF services.



John Parker

Given the short lead-time, it would have been impossible for FSM to purchase its own vehicles and establish a separate fire station at the airfield, notes Airport Director John Parker.

So the airport took a two-track approach, working on an agreement with the guard to use its ARFF station and vehicles while simultaneously seeking proposals from private vendors that could provide vehicles and personnel. Three firms submitted bids, and Pro-Tec’s proposal was deemed the best qualified, Parker reports.

FSM awarded Pro-Tec a two-year contract with three single-year renewals. The first year’s fee is \$250,000.

Based on the nature and volume of its traffic, FSM is required to have one firefighter on duty with a 1,500-gallon ARFF truck. In 2013, the airport served 90,000 passengers — most via American Airlines’ four daily flights to Dallas/Fort Worth International and Delta Air Lines’ three daily flights to Hartsfield-Jackson Atlanta International. Similar to the unit in Des Moines, the guard at FSM utilized eight to 10 firefighters per shift because of the increased requirements associated with its military aircraft.

EXCEEDING CLIENT EXPECTATIONS

Planning, design and construction



TOP: Denver International Airport, Hotel and Transit Center — Program Management (Rendering courtesy of Gensler)
ABOVE: Los Angeles International Airport, Tom Bradley International Terminal — Design | RIGHT: Tampa International Airport — Master Plan

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Why Privatize ARFF?

While most airports maintain their own aircraft rescue and firefighting (ARFF) services or rely on local departments for FAA-required coverage, some hire private firms to provide and manage ARFF services for them.

With 20 U.S. and Canadian airport clients, Pro-Tec Fire Services is the largest private provider of ARFF services in the industry. According to Carl Thiem, Pro-Tec's operations chief, three major reasons inspire airports to contract out its ARFF services:

Control — Some airport directors don't want to cede the management of a critical airport resource to a fire chief downtown. When city and county departments treat airport ARFF units like any other station in their system, they often experience high turnover, Thiem notes.

Costs — Slow traffic growth and rising costs put many airports under serious financial pressure. "We can provide a rather significant costs savings," Thiem says.

Flexibility — Private contractors can also provide services other than ARFF coverage. Pro-Tec often offers fire marshal expertise, fuel farm inspections and CPR training for airport tenants at no extra charge, notes Thiem "The only two caveats are to be safe and not degrade our ability to maintain the FAA index," he notes.


At the Ardmore Industrial Airpark in Ardmore, OK, Pro-Tec also responds to building, wild-land and vehicular fires throughout the county. At Mid-America Airport near Belleville, IL, operations and security are the company's primary missions; ARFF services are secondary.

Fully three-fourths of Pro-Tec's clients are Part 139 airports, and all choose to exceed minimum FAA staffing levels — some by a significant margin, Thiem reports. "It depends on what the airport can afford and what they feel is safe. It is always the airport that decides the minimum staffing, and it is always set by contract."

Twice in seven years, client airports have reduced staffing levels — both times dropping the contractual level by one, but still staying above FAA minimums, he notes.

In addition to Des Moines International (DSM) and Fort Smith Regional (FSM), three other airports began contracting with Pro-Tec last year: Chicago Rockford International Airport, La Crosse (WI) Regional Airport and Wabush Airport in Newfoundland, Canada.

Pro-Tec began providing ARFF services in 1974 for its hometown airport, Austin Straubel International, in Green Bay, WI. Other long-time clients include Kalamazoo/Battle Creek International Airport, Rogue Valley International-Medford Airport and Burbank Bob Hope Airport. Its largest client is Will Rogers World Airport in Oklahoma City.

Two other companies also offer private ARFF services. Rural/Metro, based in Arizona, primarily provides residential fire and ambulance services, but it also has contracts with six airports. Port Columbus International Airport is its largest client. G4S Government Solutions provides firefighting services for the military, NASA and several commercial airports. 

In August, FSM learned that the guard would transfer its two fire trucks to the state; and the state, in turn, would transfer the vehicles to the airport. In addition, the guard is allowing the airport to use its fire station until 2017.

Because one of the guard's trucks was a 2001 vintage, the FAA authorized FSM to use Airport Improvement Program funds to purchase a new truck in fiscal 2015. The airport also applied for a 2017 grant to build a new fire station, adds Parker.

Per its contract, Pro-Tec hired four firefighters and will provide ARFF service 18 hours per day, with one firefighter per shift. Filling its ranks with existing guard firefighters eliminated the need for additional certifications, because the firefighters had already been trained and would be operating the same equipment from the same fire station. However, FSM did ask the FAA to perform an informal inspection prior to Oct. 1, which went well, Parker reports. FAA personnel will also return to review operations prior to FSM's annual certification inspection.

Between its new ARFF costs and the revenue lost from fees the guard paid for use of the airfield, Parker estimates that the guard's departure will cost FSM \$450,000 per year — enough to put the airport in the red. To help plug that gap, the FAA is requiring the guard to pay market rate rent for the 142 acres it will continue to use. It also set an October 2016 deadline for the guard and airport to reach an agreement about future arrangements. ✈️



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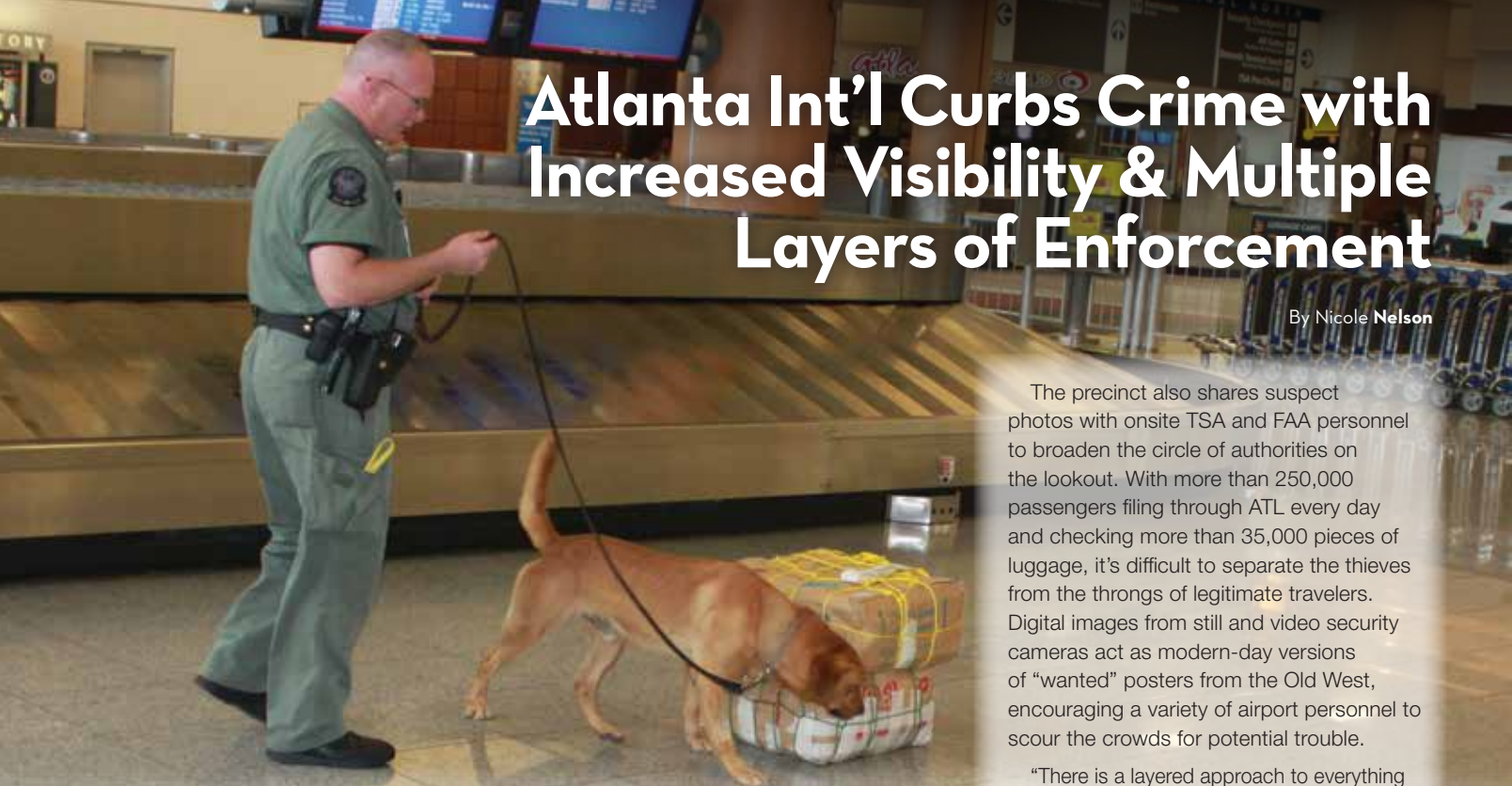
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Atlanta Int'l Curbs Crime with Increased Visibility & Multiple Layers of Enforcement

By Nicole Nelson



The precinct also shares suspect photos with onsite TSA and FAA personnel to broaden the circle of authorities on the lookout. With more than 250,000 passengers filing through ATL every day and checking more than 35,000 pieces of luggage, it's difficult to separate the thieves from the throngs of legitimate travelers. Digital images from still and video security cameras act as modern-day versions of "wanted" posters from the Old West, encouraging a variety of airport personnel to scour the crowds for potential trouble.

"There is a layered approach to everything with airport security and policing, and baggage is no exception," Hagin explains. "We have been able to achieve reductions in overall crime with a lot of visibility."

Equipment & Support

T3 Patrollers are one of the tools that help boost visibility. The electric standup vehicles literally elevate ATL's police presence above the crowds.

When passengers exit the secure area of the airport, they see uniformed police and TSA officers; when they enter the baggage claim area, more uniformed officers are on hand — some atop the eye-catching vehicles.

"(The T3) allows the officers to see over the crowd, and also allows the crowd to see the police officers," explains Hagin. "It is a really good tool for visibility."

ATL's previous fleet of two-wheeled Segways was recently phased out in favor of three-wheeled T3s, which are designed specifically for public safety agencies.

With nearly 7 million square feet of space to cover in the terminal complex alone, the vehicles also facilitate patrolling efforts. "This airport is so big and so busy; the T3s are a good way to get around," he notes.

The precinct also takes a more manual approach to patrolling ATL's two terminals and seven concourses, with a fleet of 40 bicycles. "People notice things that are uncommon, and a bicycle in an airport, or a T3, or a person with a dog are certainly, to a lot of people, unusual," Hagin reasons.

Crime is down at the world's busiest passenger airport, and its "top cop" credits increased visibility of enforcement methods for much of the positive change. Specifically, Hartsfield-Jackson Atlanta International Airport (ATL) experienced about 12% less crime last year vs. 2013. Larceny, in particular, dropped 34%.

Maj. Lane A. Hagin, commanding officer of the Atlanta Police Department Airport Precinct, attributes improvement in both areas to a more conspicuous policing presence throughout the facility.



Maj. Lane A. Hagin

"For an airport to be as busy as we are and only have an average of six or seven crimes a week — it is all about visibility," says Hagin. "It really is."

At ATL, "visibility" translates into hundreds of police officers and 1,300+ security cameras (most in plain sight). Hagin also considers the FAA, TSA, Atlanta Department of Aviation and airlines important partners in the precinct's prevention and enforcement efforts. Although they have different primary missions than the police department, their personnel and equipment add to the overall safety and security of the airport, he explains.

Grab & Go

Like many of its Category X counterparts, ATL has been targeted by both organized and unorganized luggage thieves. To help stem the tide, photos of anticipated repeat offenders are posted on the precinct walls to imprint suspects' faces in the minds of frontline forces. When a new incident of larceny occurs, the suspect's photo is placed directly on the briefing podium and is highlighted at roll call.

"These pictures of baggage thieves are something the officers see every day," says Hagin. "Cameras are a tremendous tool. If we can't catch the person stealing the baggage at the scene, or if we can't prevent it, then we can go back and at least get a picture of the person we suspect has taken the bag ... We will know them when they come in the next time."



factsfigures

Project: Preventing Baggage Theft & Other Airport Crime

Location: Hartsfield-Jackson Atlanta Int'l Airport

Owner: City of Atlanta

Operator: Atlanta Dept. of Aviation

Enforcement Unit: Atlanta Police Dept. Airport Precinct

Methods Used: Uniformed & undercover officers; security cameras; K-9 units; T3 fleets; bicycle patrols; etc.

Philosophies Emphasize: Increased visibility of deterrence & enforcement measures; multiple layers of security

Noteworthy Results: Crime at ATL dropped 12%, larceny 34%, last year vs. 2013

The dogs he refers to are 20 specially trained airport-certified canine teams. Typically, they're deployed during particularly busy periods to augment ATL's standard coverage.

"Although the canines are not looking for explosives, everyone seems to notice a police officer with a dog, so they (also) serve as a great visibility tool," Hagin relates.

Laying Low

While Hagin is highly committed to using conspicuous deterrence and enforcement methods for airport environments, he also appreciates the effectiveness of inconspicuous measures such as undercover personnel, hidden cameras and sting operations.

Passengers exiting ATL, for instance, will regularly notice uniformed police outside working the curb. "What passengers might not see are officers that are not in uniform," says Hagin. "They are in plain clothes, observing people and their behavior."

TSA employs a similarly covert method to help boost the overall veracity of baggage operations at ATL and other U.S. airports. The method, known as "integrity testing," sends plainclothes personnel through airports with high-value items such as cash, iPads and laptops in their checked and carry-on baggage to test whether TSA employees will take them.

In 2013, TSA conducted more than 3,600 integrity tests conducted at 159 different U.S. airports and caught 13 employees stealing planted items. That's a 99.6% pass rate, emphasizes TSA spokesman Mark Howell, noting that the 13 employees who were caught stealing were immediately removed from their posts.

Although TSA's primary focus is on security, the equipment and personnel it provides help prevent baggage theft and a variety of other airport crime, adds Howell.

"(Integrity testing) is just one of those things that we are doing to make sure our employees are doing the right things," he explains.



Initiatives undertaken by TSA and other partner agencies are welcome additions to mainline efforts by the Atlanta Police Department Airport Precinct, notes Hagin. "It is a layered approach," he stresses.

Whether passengers are in a secure or unsecure area, inside or outside the terminal, there is a pervasive police presence at ATL — it's just not always evident. ✈️

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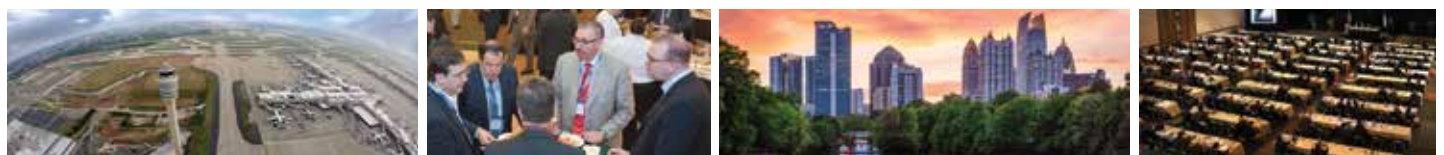
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Anchorage Int'l Airport Serves as Pit Stop for Global Cargo Carriers

By Ken Wysocky

factsfigures

Project: Cargo Operations

Location: Ted Stevens Anchorage Int'l Airport

Owner/Operator: Alaska Dept. of Transportation & Public Facilities

Primary Services: Refueling & ground handling for int'l cargo carriers

Rankings: World's 6th largest airport by cargo throughput; 2nd largest U.S. airport by landed weight of cargo aircraft

Runways: 3 (all more than 10,600 ft. long)

Fuel Storage Capacity: 36 million gallons

Approx. Daily Fuel Usage: 2 million gal.

Traffic: 500 wide-body arrivals/week

Approx. Passenger Enplanements: 2.5 million

Competitive Advantages: Located within a 9½-hour flight from 90% of the industrialized world; exempt from Jones Act cargo transfer restrictions



As in real estate, "location, location, location" can be crucial for airports. It's especially true for Ted Stevens Anchorage International (ANC) in Alaska. The state-owned airport has parlayed its geographic quirk into a competitive advantage. With three runways (all longer than 10,600 feet), special ramp facilities and procedures, and a little help from the federal government, ANC has molded itself into a critical refueling stop for cargo carriers flying the skies between Asia and North America.

"We are the busiest airport in the world that nothing comes from or goes to," quips John Parrott, ANC's manager. "We handle 500 wide-body cargo plane landings per week, mostly 747s. We're the sixth-



John Parrott

largest airport in the world in terms of cargo throughput and the second-largest in North America in terms of landed cargo weight."

The bulk of ANC's traffic is generated by pure geography. Nestled on the south-central coast of Alaska, Anchorage is roughly equidistant from Tokyo and New York City alike. That puts ANC within a 9½-hour flight from 90% of the industrialized world. As such, roughly 80% of all air cargo traffic between Asia and North America passes through ANC, Parrott reports.

The basic financial calculus of air cargo also plays to ANC's advantage. Most international cargo carriers have two choices: carry more fuel and less cargo, which increases range but reduces per flight revenue; or carry more cargo and less fuel, which reduces flying range but boosts revenue. A stop at ANC allows many carriers to have it both ways, Parrott notes.

Anchorage Int'l pumps nearly two million gallons of jet fuel per day.

"Fortunately for us, (carriers) can carry an extra 100,000 pounds of cargo just by making a fuel stop in Anchorage, which in many cases is only 100 miles off the direct route," he explains. "At a conservative estimate of \$1 in revenue per pound, five flights a day, six days a week and 52 weeks a year, that's more than \$150 million in added revenue."

Parrott estimates that expenses incurred during stops amount to less than 10% of the additional revenue carriers can earn. "That's a pretty good business model – and the reason why almost every carrier that serves trade routes between Asia and North America stops in Anchorage," he notes.

ANC's market is so unique, airport officials don't consider it to be in competition with other major cargo hubs in Memphis, Chicago and Louisville. ANC actually helps facilitate their business, notes Parrott: "We enable economic activity to occur at a higher level at those origin and destination airports because of the efficiency we bring to the air cargo supply chain. Our existence makes the whole system work more efficiently."

From Passengers to Payloads

Decades ago, ANC was much more of an international passenger airport than a cargo hub. "There was a time when our airport was known as the crossroads of the world," Parrott recalls.

Two primary factors contributed to that. Back then, commercial airlines didn't have the range to fly non-stop from Asia to North America. Moreover, the Soviet Union's airspace restrictions translated into longer routes. The airspace opened up, however, after the fall of the Berlin Wall in 1989 and the collapse of the Soviet Union. Aircraft flight ranges also increased, and it no longer made sense for passenger airliners to stop at ANC, Parrott explains.

"International passenger traffic disappeared almost overnight after the Berlin Wall came down," he recalls. At its peak, the airport handled 104,000 international passengers in 1990; by 1994, that number dipped by more than half, to around 50,000 passengers. Today, passenger volume has declined to the point that ANC no longer offers year-round international passenger service, Parrott reports.

The airport's economic salvation arrived with the emergence of Asia (especially China) as an economic powerhouse, supplying goods to North America, the world's largest consumer market. The rise of FedEx and UPS air cargo services also strongly contributed to ANC's resurrection, Parrott relates.

To accommodate the increase in cargo traffic, the airport added more pull-through cargo parking spots, expanded and upgraded its runways, and improved its underground refueling system. Airport tenants also built additional cargo parking spots.



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About 80% of all air cargo traffic flying between Asia and North America stops at Anchorage Int'l.



ANC still handles passenger flights. Alaska's largest business airport logged about 2.3 million enplanements in 2013 and handled more than 50,000 passenger aircraft landings. "The only reason we have even that level of passenger traffic is there's no other way to get out of the state in a reasonable amount of time," Parrott explains, pointing out that Alaska is larger than California, Montana and Texas combined. "It can take anywhere from three to five days of driving to leave the state ... and more than 80% of communities in Alaska aren't accessible by road."

"Alaskans fly eight times more than the average American," he continues. "Even high school basketball teams fly to their games in other towns. Aviation here is sacred – it's how we get around."

As such, ANC maintains a traditional passenger terminal (built in phases in 2004 and 2009) with two modern concourses and about 23 gates for commercial passenger jets.

Unconventional Ops

All similarities to traditional airports end at the terminal. Unlike other cargo hubs that handle similar annual tonnage, ANC has no vast complexes of cargo warehouses and support facilities, railroad lines or even special roads for transport trucks. It simply doesn't need them. "By and large, most of our business is done on the ramps," Parrott explains.

Most cargo planes spend about two hours on an ANC ramp. Some, however, pay more for what Parrott calls the "Indy 500 pit stop treatment." In those cases, independent ground handlers (including Swissport International, Pegasus Aviation Services and FEAM Ground Services) allocate more resources to get an aircraft rolling in a little less than an hour. Just like an Indy pit crew, multiple ramp workers simultaneously perform numerous services, including refueling, lavatory cleaning, catering and general maintenance.

"We don't provide any of those services," Parrott clarifies. "We just own the infrastructure. A good analogy is that we own the shopping mall, but none of the shops. We just keep the lights on and make sure the sidewalks are shoveled."

Much of the action occurs on a large cargo ramp near the center of the airport, at 11 parking spots for wide-body aircraft. The ramp's central location makes it easy for cargo planes to clear a landing runway, taxi to the parking spots, receive service from ground handlers, and then depart.

"It takes a cargo plane as little as two minutes to get from those central parking spots to a departure runway," Parrott specifies.

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Delivery giants FedEx and UPS lease and run their own cargo facilities on the north side of the airport.

Faster Fueling

ANC pumps nearly 2 million gallons of jet fuel per day via an underground hydrant system. Fuel is stored above ground, in nine 4 million-gallon tanks, for a total storage capacity of 36 million gallons. A consortium of 19 airlines owns and operates the fueling system.

According to Parrott, the vast majority of the airport's fuel comes from Alaska or is shipped via barges from the West Coast to Anchorage's port facilities; about 20% is transported from Asia via tanker ships.

Unlike many airports, where trucks carry fuel to airplanes on the ramps, ANC relies on an underground pipe system. One hose runs from an in-ground connection to a "connecting truck," and another hose connects the truck to the aircraft's gas tank. The connecting truck then uses a pump to move the fuel from the pipeline system into the aircraft.

"This system enables much faster refueling," Parrott relates. "A typical fuel truck can't fill up a 747 in one trip. (Workers) have to drive a truck up, connect it, empty it, disconnect it, go back and refill it. All that time really adds up. With our system, we can pump fuel from both sides of an aircraft at the same time for maximum efficiency."

Federal Exemption

Under most circumstances, American cargo carriers are not allowed to offload cargo onto foreign carriers' planes for delivery to cities in the United States. The Merchant Marine Act of 1920 (which also applies to aviation) prohibits foreign airlines from flying cargo from one United States city to another. The rule, also known as the Jones Act, was passed to protect American interests — both economic and those related to national security. Violations of the act are known as "cabotage."

The law's restrictions, however, don't apply to ANC. In an effort to stimulate economic growth and make national cargo shipping more efficient and economical, the U.S. Department of Transportation granted the airport an exemption from the Jones Act in the late 1990s.


Parrott uses a hypothetical example of a Chinese airline and an American airline carrying goods from Asia to cities like Chicago and Atlanta to illustrate how the exemption increases efficiency: Individually, the two airlines may not service those two cities often enough to satisfy customers. But between the two, they might be able to offer comprehensive service — if they could transfer their cargo to each other's planes at ANC.

"The piece that's unique to Anchorage is that an American carrier can take cargo off and put it on a foreign carrier for transport to another city," Parrott explains. "Say an American carrier leaves Shanghai and a Chinese carrier leaves Taipei, and they both meet in Anchorage. Each can take its cargo and transfer it to the other carrier, then one maybe goes to Chicago and the other to Atlanta. Then it works in reverse, too."

ANC's transfer capability is so unique, some carriers question whether it is legal, Parrott reports.

Looking ahead, the airport is working with the Anchorage Economic Development Corp. to explore what kind of value-added services it could offer to attract more customers. Like most airports, ANC is an economic driver of the area's economy; so its continued growth and viability are important.

Currently, the airport employs 380 people; and one out of every 10 jobs in Anchorage is dependent on ANC.

"We're a significant economic engine that enables a lot of other engines to run smoothly," Parrott says. "So we're trying to determine who we should be talking to in order to do more business at the airport — to be more than just a technical stop for getting gas and moving cargo between aircraft. Are there industries for which we could provide storage or value-added services? That's our next avenue to explore." 

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Florida Airports Council Launches Leadership Development Program

By Dan Vnuk



factsfigures

Project: Leadership Training Course

Sponsor: Florida Airports Council

Funding Partners: Florida Dept. of Transportation; Center for Urban Transportation Research, Univ. of South Florida

Course Duration: 3 days

Cost: \$200/student

Location: Univ. of South Florida

Available To: Employees of Florida Airports Council Members

Curriculum Topics: Self-management; strategic thinking; culture transformation; change management; communication; building relationships

Presented By: Direct Effect Solutions

Associated Credential: Certificate of Completion from Univ. of South Florida

Inaugural Class: 2013

Graduates: 97 employees from 35 Florida airports (thru Nov. 2014)

Every day, 10,000 Americans turn 60 and begin counting down to retirement. Many will vacate management positions, leaving behind voids of leadership and industry knowledge. This Baby Boomer exodus could be particularly problematic for airports, which tend to have a limited supply of candidates to fill upper-level positions. The Florida Airports Council is working to help its members stay ahead of the retirement curve with a three-day program to identify, train and educate emerging managers so they're ready to take the reigns as Baby Boom leaders leave.

With funding from the Florida Department of Transportation and University of South Florida's Center for Urban Transportation Research, the leadership development course costs \$200 per student. One of the council's primary goals was to make the course affordable for all sizes of member airports throughout the state.

Inspired by Research

The impetus for the council's new leadership program came from the Airport Cooperative Research Program (ACRP), an industry-driven, applied-research program sponsored by the FAA and managed by the Transportation Research Board of the National Academies. In addition to documenting the need for programs to develop future airport leaders, an ACRP study found that the current gap in leadership development is partially based on affordability and availability of pertinent courses. Its findings also indicate that the

leadership skills needed at airports are the same as in other industries, but the circumstances in which airport leaders apply the skills are unique.

"According to the research, most airport leaders receive some supervisory training to meet mandatory technical requirements. But after that, there may be limited or even no additional leadership-specific courses," says Bill Johnson, executive director of the Florida Airports Council. "Further, the report found that existing and emerging leaders aren't learning the skills needed to lead an organization as complex as an airport."



Bill Johnson

After personally attending the program's inaugural course in early 2013 and reviewing results of subsequent classes, Johnson considers the new leadership course "one of the greatest programs our council has ever offered."

Course Curriculum

Content for the three-day program focuses on strategy execution and the six attributes/skills ACRP identified as key for airport (and other) leaders: self-management, strategic thinking, culture transformation, change management, communication and relationship-building.

Course facilitators Michael Audino and Mindy Price use interactive scenario discussions to address the topics.

Graduates of the Florida Airports Council leadership development program come from airports of various sizes throughout the state.



Michael Audino

"Participants work in groups to discuss and resolve airport-specific scenarios that describe circumstances in which the leadership skills would be applied," explains Audino, a senior researcher and educator at the University of South Florida who guided the ACRP leadership development project.



Mindy Price

Mindy Price, owner and principal consultant with Direct Effect Solutions, emphasizes the importance of the 360-degree assessments that participants must complete before they arrive at the University of South Florida for their on-site coursework. To complete the assessments, students must solicit input from three to five organizational subordinates, peers and superiors, for a total of about one dozen

documents. Price considers the assessments a participant's "ticket for admission" to the program.

"The leadership insights afforded by the 360-degree self-assessment helps participants focus on specific leadership topics during the subsequent three days of training," explains Price, who also consulted on the ACRP study. "The expected results of the course include increasing the self-awareness of

each participant and an increased understanding of how they are perceived as a leader."

The first full day of training focuses on self-management. Participants learn about, and begin to develop, their own "personal leadership brands" by discussing various leadership styles, their individual leadership journeys, leadership passages and "followership" — a new concept for many.

During the second day, participants examine leadership fundamentals. Topics include communication styles, conflict resolution, critical thinking, decision-making, building a business case and negotiating skills.

On the final day, participants concentrate on executing leadership techniques, with an emphasis on strategic planning, developing culture, relationship building, strategy execution and change management.

"Throughout the three days, participants have an opportunity to apply what they have learned through assessment centers," Price notes. The centers allow class facilitators to observe whether participants can demonstrate a command of specific topics — building a business case, communication/conflict resolution, negotiation skills — as well as overall course content.

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Each participant learns how to develop a “personal leadership brand.”

At the end of the course, participants create and present action plans to facilitate the immediate application of what they learned back at their home airports.

In late November, five sessions of the program had yielded 97 graduates from 35 Florida airports; 12 airports had sent three or more participants. When contacted for feedback, all airports reported a positive change in their attendees. Additionally, two graduates have since been promoted and one team went on to win an award for strategic planning.

Return on Investment

Michael Stewart, director of external affairs for the Jacksonville Aviation Authority and current president of the Florida Airports Council, describes the course as “extremely well-tailored to the needs of today’s airports.”


Stewart especially appreciated learning from the experiences shared by fellow peers/



Michael Stewart

participants. “Soon after completing the course, I found myself using techniques that I learned over the three days in my daily routine as an administrator,” he recalls.

After experiencing the benefits of the classes first-hand, Stewart is determined to make the leadership program sustainable on a long-term basis during his council presidency. “It can have such an impact on developing future leadership,” he explains. “There is a lot of good young talent out there, but they need opportunities presented to them that will help them reach the next step on their career ladder. This course focuses on helping them define a direction instead of just grabbing the next job that may come along.”

Based on the program’s success, the Florida Dept. of Transportation approved funding for an advanced-level course titled *Airport Situational Leadership*. It is scheduled to occur in early 2015. 

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2015 Events on Approach



Event	Destination	Date
AirCargo Conference	New Orleans, LA	March 1 – 3
ACI-NA/AAAE Washington Legislative Conference	Washington, D.C.	March 3 – 4
Business Information Technology Conference	Vancouver, BC	March 22 – 25
Environmental Affairs Conference	Vancouver, BC	March 22 – 25
Public Safety & Security Spring Conference	Vancouver, BC	March 22 – 25
Operations & Technical Affairs Conference	Vancouver, BC	March 22 – 25
Airports Canada Conference & Exhibition	Vancouver, BC	March 25 – 27
ACI-NA/AAAE Airport Board and Commissioners Conference	New Orleans, LA	April 12 – 14
Legal Affairs Spring Conference	New Orleans, LA	April 15 – 18
Business of Airports	Phoenix, AZ	April 20 – 22

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Valet Parking Boosts Revenue at Tulsa Int'l

By Mike Schwanz

 Airport managers wanting to maximize revenue while offering passengers an upgraded landside service option may want to take a page from the playbook at Tulsa International Airport (TUL). Its curbside valet service is proving to be a popular choice with customers, and has delivered double-digit growth every year since the Oklahoma airport introduced the service in 2009.

In 2010, the service grossed \$76,000; by 2013, annual revenues had jumped to \$219,000, reports Jeff Mulder, airport director for TUL and its reliever, R.L. Jones, Jr. Airport. In all, approximately 13,000 customers used the airport's valet parking service in 2013.

Customers pay \$16 per day for TUL's valet parking, compared to \$10 per day for traditional self-parking. Not surprisingly, business travelers on expense accounts and passengers running late who are willing to spend a little extra money for expedited service are the program's mainstay customers.

Why It Works

Mulder attributes some of the program's success to the convenience it offers. TUL's valet parking service is centrally located in the middle of its main departures terminal to provide passengers with easy access to several major

airlines. Customer response to the location, and covered valet booth, has been very positive, he notes.

The service is also very user-friendly, adds Mulder. When customers arrive at the valet station outside the main terminal, they simply leave their names, phone numbers and flight information with an attendant before proceeding to the airline ticketing and check-in area, just inside the terminal. Attendants drive customer vehicles to a former cargo building at the edge of the airport, where they are parked until their owners return.

Because the terminal's main entrance road has four lanes, departing passengers using the valet service do not slow down other arriving traffic, Mulder specifies.

When valet customers return to TUL, their vehicles are waiting for them at the curb, right outside the terminal door. Although attendants have customers' flight information as a reference, they monitor flight arrivals for delays to ensure that they don't bring vehicles to the terminal until the passengers' planes have actually landed.

American Parking System, the airport's general parking vendor, also runs its valet



Jeff Mulder



factsfigures

Project: Curbside Valet Parking

Location: Tulsa (OK) Int'l Airport

Vendor: American Parking System

Service Debut: 2009

Valet Rate: \$16/day

Self-Park Rate: \$10/day

Staffing: 4 part-time vendor employees

2013 Valet Revenue: \$219,000

2013 Customers: 13,000

service. Four part-time employees staff the valet drop-off booth, working from the first flight out in the morning until the last arrival in the evening. Attendants ride a shuttle back to the airport after dropping customer vehicles at the storage warehouse, and vice versa.

Meeting Demand

Keeping pace with the steady increase in demand for valet parking has been a challenge, Mulder acknowledges. But relief is already in sight. An expansion of the airport's main parking garage, scheduled for completion this year, will add about 500 new spaces; and a portion of the new capacity will be dedicated for valet parking.

"We do need space," Mulder relates. "We are running out of room; so we may eventually need to build a new storage facility. Customers do expect covered parking one way or another."

Given the popularity of its valet service so far, TUL has not had to spend much money on marketing. "We do advertise this service somewhat, and mention it in our website," says Mulder. "But most of our increase in customers has simply been through word of mouth."

Based on recent performance, Mulder anticipates demand for valet parking to continue to grow in 2015. "Once we have more storage room, we will probably market the service even more," he concludes. ✈️

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Dual Options at Charlotte-Douglas Int'l

North Carolina's Charlotte-Douglas International Airport (CLT) offers customers two valet parking options at two different price points, depending on the level of convenience they prefer.

Departing passengers who use CLT's Business Valet service drive to a separate building near the main terminal to check their vehicles with attendants, and then ride designated shuttle buses to the terminal. Drivers offer assistance with luggage.

With a rate of \$14 per day, CLT's remote valet service is the more popular of its two options.

The other, more premium choice — curbside valet — is located at the main terminal, near the end of the departures level. With this service, passengers leave their vehicles at the valet booth and simply walk into the main terminal.

The basic cost for Curbside Valet at CLT is \$28 per day. Additional services, such as car washes and state vehicle inspections, are available for additional fees. ✈️

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Airport Robots Are Already a Reality

When I asked Professor Kostas Daniilidis about the future of robotics at airports, he smiled and responded, “Well, what would you want?”. As former head of the General Robotics, Automation, Sensing & Perception Laboratory at the University of Pennsylvania, Daniilidis has a unique view of the research and development occurring in academic and commercial settings alike.

A number of robotic systems are already being used in airports:

- The TaxiBot is a large, semi-robotic electric-powered tug developed by Israel Aerospace Industries and TDL Group that was recently certified for towing Boeing 737s in Europe. After the vehicle docks with an aircraft, the pilot inside the plane controls it. Lufthansa is currently testing the TaxiBot at Frankfurt Airport.
 - Roving automated “greeter” devices assist passengers with wayfinding and other routine terminal information at numerous airports. These robotic service reps feature mobility, wireless navigation, spatial awareness and are even “sociable.” The unit at Indianapolis International, by Double Robotics, is essentially a webcam on wheels that connects airport visitors to a human who offers real-time responses via video link. The rolling BlueBotics system at Geneva Airport invites passengers to touch its interactive menu for further details about their questions and can escort them to their destinations. More evolved versions include stylized telepresence robots (VGo and Anybots) and a humanoid greeter (REEM) previewed at Passenger Terminal Expo 2014.
 - Valet car parking bots at Dusseldorf Airport use sensors and a mobile mini-forklift to measure, pick up and move autos into reserved parking spots. The system, from Serva Transport, is connected to the airport’s flight data system, so it knows when customers will return for their vehicles.
 - Passengers at Amsterdam Airport Schiphol line up around viewing windows to watch a robot-based system that loads checked bags into carts for transport to aircraft. Implemented by Vanderlande Industries, the Grenzebach Automation system handles the physically demanding aspects of outbound baggage while maintaining human elements for control and supervision.
- And we have only scratched the surface. Here are a few *potential* applications:
- Advanced driver assistance and collision avoidance systems could be added to existing shuttles and trams that service remote parking lots, car rental centers and nearby hotels. In addition, driverless systems are a legitimate possibility, given the relatively limited scale of airport environments. Issues such as reliability in inclement weather, however, still need to be resolved.
 - Remotely controlled unmanned aerial vehicles, also known as UAVs and drones, will soon be used to measure and video-document the progress of construction projects. Specialized low-flying drones could provide real-time traffic surveillance and assist first responders during emergencies.
 - Swarm technology (coordinated groups of small robotic devices) may be ideal for cleaning terminal floors and windows; landside, it could be deployed for street and landscaping maintenance.
 - A new generation of robotic wheelchairs by ATRS and intelligent mini-transport systems could potentially help deliver elderly travelers or passengers with disabilities to their gates, Baggage Claim, etc. Socially interactive automated escorts and roving alternative information devices might assist customers with sensory impairments.
 - Further improvements for robotic surveillance, explosives countermeasures and fire detection systems are a given. New devices will be able to sniff out and locate chemical, biological, radioactive and explosive threats.
 - As Web technology evolves, security and maintenance personnel will go beyond using the Internet to autonomously evaluate situations; robotic systems with advanced artificial intelligence will take action as needed from safe distances.
- Are these advances are just speculation? I, for one, do not believe so. Even as we tend to overestimate current technology and underestimate future technology, the vast potential for using robots in airports is all too real and presents tremendous untapped opportunity. To quote from Abraham Lincoln: “The best way to predict your future is to create it.” 



Cedric Curtis

Cedric Curtis, AIA, is a registered architect with more than 27 years of management and hands-on experience in planning the design and construction of airport buildings. He has served as a technical presenter on airport terminal design issues at numerous airport industry conferences including AAAE, ACI, ACC, AMAC and Passenger Terminal World.

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