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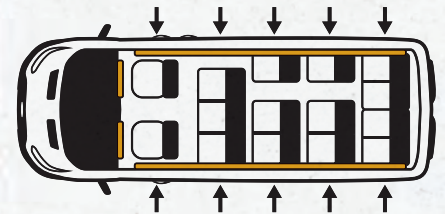
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^{††}Medium roof shown.



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INSIDETHEFENCE

Ronnie L. Garrett
Editor



Insecurity Over Security

Recent audit shows TSA has a 95 percent failure rate in detecting weapons and bombs

As passengers pass through security at most airports, they are greeted with a display of some of the instruments of mayhem confiscated over the TSA's 14-year history.

And if you look at the TSA's 2014 year-end report, you'd think they'd just completed yet another successful year. The report shows they confiscated 2,212 firearms in 2014, many of which were loaded.

These statistics made me feel good. They made me feel like the aggravation of standing in line for what seems like hours, removing ones shoes and suffering through pat-downs were worth it.

Because like most passengers, when I arrive at an airport, I like to think of myself as safe. The alternative, that the evil-doers of the world may be lurking inside and preparing to execute some heinous crime, is something I prefer not to consider. I, like many passengers, prefer to believe there is this organization called the TSA watching for evil-doers and checking them at the door.

Turns out this might be more fantasy than reality.

In a recent internal investigation, airport screeners missed weapons and fake bombs in 67 out of 70 cases—a 95 percent failure rate! Worse yet it turns out this isn't the first time the TSA failed such a test. Department screeners smuggled simulated bombs and weapons past security checkpoints as far back as September 2002. Investigators passed through security checkpoints with components for improvised explosive devices (IED) and an actual IED concealed in carry-on luggage in 2007. And, in 2008, an

audit made 43 recommendations to fix security gaps over a five-year period.

This is just the passengers sneaking things into secure areas. What about employees? Turns out we're not exactly safe there either. The U.S. Inspector General reports that the TSA failed to identify 73 workers with links to terrorism in tests conducted at airport screening checkpoints. They do perform background checks on these workers, right?

That these risks remain alarms more than just me. In recent weeks both the public and U.S. lawmakers have expressed their concerns.

Screening 60 million passengers a year is an enormous task. But it's one most passengers would like the government get right.

So what can be done?

Besides replacing the leadership at the agency, legislators have recommended employing face-recognition software to identify potential terrorists and conducting regular audits to look for weaknesses in the security process. Leaders suggest it's time to invest in advanced technology to replace screening devices that are decades old. Others say the government should nix the TSA altogether and return security responsibilities to the individual airlines.

What would you like to see happen? *Airport Business* is covering this topic in greater depth in its August issue, and would like to know your thoughts. Please email me directly at Ronnie@aviationpros.com. I would love to hear from you.



LAGUARDIA FACELIFT MOVES FORWARD

LaGuardia Airport is consistently ranked among the worst in the United States for cleanliness, design and delays. In 2014, Governor Andrew Cuomo called LaGuardia's ranking a "disgrace" and vowed to redevelop it. Today his vision is moving forward to reality. The Port Authority of New York & New Jersey selected a group led by Swedish construction company Skanska AB and a Vancouver-based airport operator to help finance, build and manage a \$3.6 billion

replacement for LaGuardia Airport's 50-year-old central terminal. The plans for LaGuardia call for a new 35-gate terminal with more restaurants and lounges, stores, bigger gate areas and improved passenger and baggage screening. The Port Authority's board authorized the agency to negotiate the design of the central hall with the Skanska group. The entrance, which will connect terminals B and C, will cost as much as \$400 million, bringing the project's cost to \$4 billion. Construction is projected to start in the first quarter of 2016 and proceed in stages.

Avfuel-branded Jet Center At Santa Fe Brings FBO Monopoly To An End

The Jet Center at Santa Fe is now open, bringing the long-standing FBO monopoly to an end at the Santa Fe Airport. With a unanimous vote by the Santa Fe city council and full support from the mayor's office, the full-service FBO marks an exciting return for a savvy, well-respected group of industry veterans who proudly share more than 75 years of experience. This executive team includes Herb Marchman, Ron Tarrson, John Marchman and Troy Padilla.

The founders bring their legacy of award-winning customer service to the Santa Fe aviation community creating uniquely personal travel experiences through on-point logistical services and high detail-oriented customer attention. JCSF's arrival marks a tremendous boon for the city, providing an impeccable first impression of Santa Fe for business, cultural and political leaders, celebrities and artists the moment they set foot on the tarmac.

JCSF leased approximately 5 acres of vacant land to construct a new terminal, two new heated hangars exceeding 32,000 square feet, a new fuel farm, and full-service maintenance and avionics shop in affiliation with Santa Fe Aero Services. During the construction of its new facilities, the Avfuel-branded FBO will operate out of a temporary, ramp-side terminal, offering an amenities-rich passenger waiting area, a private pilot lounge, briefing rooms, WiFi and plane-side car service.



7-ELEVEN ...

Opens its first airport store at Los Angeles' International Airport.

ADVANTAGE RENT A CAR ...

Has completed its purchase of E-Z Rent-A-Car Group Holding.

AIRPORT CONSULTANTS COUNCIL ...

Selects Francisco International Director John Martin as the recipient of the 2015 ACC Aviation Award of Excellence.

ALASKA AIRLINES ...

Names David Kuhl as vice president of Information Technology Services.

AMERICAN EXPRESS ...

Opens its Centurion Lounge in the North Terminal in Concourse D at Miami International Airport.

BOEING ...

Projects a demand for 38,050 new airplanes valued at \$5.6 trillion over the next 20 years, an increase of 3.5 percent from last year's forecast.

PORT OF WHITMAN BUSINESS AIR CENTER ...

Lands a \$1.9 million grant from the FAA to help reconstruct its runway.

DALLAS-FORT WORTH INTERNATIONAL AIRPORT ...

Moves administrative headquarters to Euless.

DELTA AIR LINES ...

Unveils the completion of a \$229 million, terminal-wide refurbishment, including the airline's first private check-in lounge, Delta ONE, at Los Angeles International Airport.

FEDERAL AVIATION ADMINISTRATION ...

Awards a \$16.8 million grant to Baltimore Washington International Thurgood Marshall Airport to complete the fourth phase of a multi-phase comprehensive taxiway improvement program for Runways 10/28 and 15R/33L.

GERALD R. FORD INTERNATIONAL AIRPORT ...

Begins construction on one of its three runways. The work will not impact operations.

HARTSFIELD-JACKSON INTERNATIONAL AIRPORT ...

Announces plans to screen nearly all employees who enter secured areas by year's end.

HAWAIIAN AIRLINES ...

Announces it plans to maintain capacity for the next two years as it replaces its older planes with new A321neo and A330-800neo aircraft.

INDIANAPOLIS INTERNATIONAL AIRPORT ...

Allows White Lick Beekeepers Association apiary on airport land.

KILFROST ...

Has begun manufacturing its de/anti-icing fluids for aircraft and runways, products in China.

LAGUARDIA AIRPORT ...

Selects team to build new main terminal. The team includes developer Skanska USA Inc., architecture and engineering company HOK and financial firms Morgan Stanley and Citigroup Inc.

West Star Aviation Now Operating New Satellite Facility At Chicago Executive Airport

West Star Aviation recently announced they are operating a satellite facility at Chicago Executive Airport in Chicago, Ill. A Class 4 Repair Station, CRS PAZD068H, West Star will provide maintenance and avionics troubleshooting and repairs, minor inspections, customer assistance, as well as support the AOG and mobile repair activity in the area. The satellite facility is already fully operational and features 12,915 square feet of hangar space as well as 3,208 square feet of shop and office space.

"Our main goal for the satellite facility is to provide support to the Priester Aviation and Net Jets operations at the airport, as well as to any customers located in Chicago or the surrounding areas," says Tom Hilboldt, former supervisor at West Star's East Alton facility who has been promoted to satellite manager.

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METROPOLITAN AIRPORTS COMMISSION ...

Approves raising airport wages to at least \$10 an hour.

OCALA CITY COUNCIL ...

Hires Sheltair Aviation to run Ocala International Airport, tripling the city's lease income and benefiting from millions of dollars' worth of upgrades.

DFW Airport Completes Advanced New Parking Facility for Terminal A Customers

Dallas/Fort Worth International (DFW) Airport has completed the new Terminal A parking structure, giving airport customers more than 7,500 parking spaces and a host of new conveniences wrapped inside a significantly upgraded parking experience. Highlighting the garage features is DFW's Parking Guidance System, which uses overhead lights and electronic signs to guide motorists to open spaces on each level of the five-story structure.

The Parking Guidance System features advanced wayfinding signage and overhead lights over each parking space that glow green when available, blue for spaces for the disabled, white for valet spaces and red over spaces that are filled. The Terminal A parking structure also added covered walkways to the terminal, brighter lighting, elevators and newly designed roads



into and out of the terminal complex that reduce congestion. The new structure now holds 7,576 parking spaces, giving Terminal A parking more capacity than the three parking garages it replaced and bringing the total number of on-airport spaces to 42,000.

The official DFW airport mobile app, along with DFW airport's web site and mobile site all include information and up-to-the-minute space availability reports about the new Terminal A parking structure.

The 2.9 million-square-foot Terminal A parking structure is part of DFW's Terminal Renewal and Improvement Program (TRIP), the seven-year \$2.7 billion program that is renewing DFW's four original terminals. Renovation work on Terminal A should be complete later this year, while work on Terminals B and E should conclude in 2016.

The new Terminal A parking facility is the largest new structure built at DFW since Terminal D and Skylink opened in 2005, and is one of the largest parking facilities in Texas.

Terminal A parking facility amenities include:

- 7,576 parking spaces on five levels covering over 3 million square feet
- Enhanced terminal entries including covered walkways
- DFW's Parking Guidance System to help customers easily find an open space using overhead lights and electronic wayfinding signs
- A more brightly lit parking environment
- Higher clearances to accommodate ADA accessible vehicles
- Vertical accessibility and ADA compliance via new passenger elevators
- Innovative new roadway design which reduces the need for lane changes and separates arrivals traffic from departures traffic
- Spiraled helix roads for easy access to all five parking levels

The council agreed to a 30-year lease with Fort Lauderdale-based Sheltair Aviation,

O'HARE INTERNATIONAL AIRPORT ...

Boosts its on-time arrival and departure rates for two consecutive months.

PHILADELPHIA INTERNATIONAL AIRPORT ...

And the airlines will pay workers \$12 per hour as part of a new lease agreement.

PORT COLUMBUS INTERNATIONAL AIRPORT ...

Installs FuelRod kiosks to provide these grab-and-go portable chargers for its travelers.

PORTLAND INTERNATIONAL AIRPORT ...

Adds eight BorderXpress Automated Passport Control kiosks to reduce waiting times at its International Arrivals Hall.

RICKENBACKER INTERNATIONAL AIRPORT ...

Begins work to construct a new state-of-the-art air traffic control tower to replace the 1950s-era tower currently in operation.

SACRAMENTO INTERNATIONAL AIRPORT ...

Launches a \$5 million-plus "extreme makeover" of the food service and passenger waiting areas on the upper level of Terminal A.

SOUTHWEST AIRLINES ...

Flew one of its passengers home to Denver, Colo., for free after she learned during a recent trip that her son was in a coma.

SPIRIT OF ST. LOUIS AIRPORT ...

Celebrates 50 years with Phillips 66 Aviation and renews its fuel contract.

TSA ...

Reassigns acting administrator, Melvin Carraway, to a different job in the Department of Homeland Security and appoints Acting Deputy Director Mark Hatfield as interim administrator.

UNITED AIRLINES ...

Broke ground on its new Terminal C North concourse at George Bush Intercontinental Airport in Houston.

US AIRWAYS ...

Leaves Piedmont Triad International Airport after decades of service.

INDUSTRY NEWS

U.S. TRAVEL ASSOCIATION ...

Adds new senior director of Government Relations Lorraine Howerton to its public affairs team.

VAN NUYS AIRPORT ...

Launches U.S. Customs and Border Protection (CBP) services for arriving international flights.

WESTIN DENVER INTERNATIONAL AIRPORT ...

Will be open to the public at 3 p.m., November 19

WOMEN IN AVIATION ...

Received a \$10,000 grant from The UPS Foundation, which will be used toward providing teaching materials for Girls in Aviation Day.

YELLOWSTONE AVIATION ...

Selects Avfuel as its branding partner and fuel supplier.

Fuel Watch

The following fuel prices were derived from transactions completed with the AVCARD credit card during May. Not all operations sell both jet-A and Avgas. The figures for jet fuel prices will be more representative than those for Avgas, due to the higher number of transactions recorded. Prices reflect all taxes and discounts. Data is supplied from AVCARD in consolidated format; individual transactions are not disclosed.

West Coast

Jet-A: \$4.95
Avgas: \$5.23

South Central

Jet-A: \$4.65
Avgas: \$5.60

Southeast

Jet-A: \$4.53
Avgas: \$6.12

North Central

Jet-A: \$4.93
Avgas: \$6.05

Northeast

Jet-A: \$5.16
Avgas: \$6.31

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Prepare Today for Climate Changes Tomorrow

Boston Logan International Airport becomes the first airport in the nation to unveil a climate adaptation plan. What airports can learn from this seaside airport's forward thinking climate strategy.

The aviation world is well versed in cleaning up scheduling delays after natural disaster strikes but even so Hurricane Sandy served as a wakeup call for airports across the states. Flooding from this storm closed LaGuardia Airport, JFK International Airport, Newark Liberty International Airport and Teterboro Airport cancelling flights in the tens of thousands. Widespread cancellations also occurred in Washington, D.C., and Boston, which set off a ripple effect of cancellations across the United States.

The aviation world is also adept at uncovering the lessons learned in the aftermath of such situations; and Hurricane Sandy was no exception. The Federal Aviation Administration (FAA) launched a pilot study to help airports learn how climate change can impact operations by increasing the frequency of severe weather events and to aid them in developing climate adaptation plans that mitigate these impacts. Massachusetts Port Authority (Massport) also undertook the Disaster Infrastructure Resiliency Plan (DIRP) study to further study the issue.

Last month, Boston Logan International Airport became the nation's first airport to draft

a climate adaptation plan. The multimillion dollar strategy strives to make the airport, which is almost completely surrounded by water, more environmentally sustainable and resilient in the face of climate change. The document details how the airport can cut carbon emissions, trim energy consumption and protect runways and terminals from rising seas.

"The big trigger for this was Hurricane Sandy," says Tom Glynn, Massport CEO. "We've always been concerned about environmental issues, but I think that Hurricane Sandy drew attention to what our risks really are."

Erica Mattison, legislative director for the

Environmental League of Massachusetts, lauds Massport for being first out of the box with such a plan. She states emergency preparedness is a critical concern for airports. "When an airport shuts down it has huge implications for, not just the immediate city where the airport is located but the entire region that relies on the airport for a variety of things," she says. A natural disaster can significantly impact tourism and business travel and pose hefty financial losses to the community and the surrounding area.

Such plans are becoming increasingly important, she adds. According to a 2014 National Climate Assessment, 13 of the country's 47 largest airports have one or more runways that are vulnerable to moderate or high storm surges. Hotter days, heavier rainfall, increased snow and ice, and more intense storms are some of the direct impacts airports may experience from climate change, reports Airport Climate Adaptation and Resilience: A Synthesis of Airport Practice, a document published in 2012 by the Airport Cooperative Research Program. "Very few airports ... are considering ways to address these effects. Yet 70 percent of airport delays are the result of extreme weather, and such weather events are on the increase. In 2011, the United States witnessed a record 12 weather/climate disasters, each costing \$1 billion or more," states this report.

Mattison says all of these things are among the reasons why airport stakeholders should be asking themselves the following:

- How quickly would the airport be able to bounce back and reopen if disaster strikes? (The

SUSTAINABILITY PLANNING VERSUS CLIMATE ADAPTATION PLANNING

Sustainability Plans. These plans take a close look at the entire organization—people, environment and operations—to improve sustainability. They are based on the EONS acronym developed by Airports Council International—North America where each letter of EONS signifies one of the four elements of sustainability as it relates to airports and the aviation industry:

- ▶ **Economic Viability**
- ▶ **Operational Excellence**
- ▶ **Natural Resource Conservation and Preservation**
- ▶ **Social Responsibility**

Climate Adaptation Plans. These plans are focused on the facility, its long-term longevity, and its functioning.

disaster could be a hurricane, a tornado, a flood or even a winter storm.)

- What can be done now to minimize damage from specific types of natural disasters or other emergencies?

"It's really about safety—the safety of employees and people accessing the facilities," she says. "But it's also about the structural integrity of the facility, and making sure runways, terminals, parking garages, and anything that makes an airport work is back up and functioning as quickly as possible. If they are not functioning for prolonged periods of time it has major implications on the airport's ability to do its job, which is to get people from place to place."

PLAN FOR CLIMATE CHANGE

The FAA has made sustainability strategies a core objective in airport planning since 2010. Boston Logan was one of 44 airports of various types, sizes, geographic distribution and climatological changes to receive grants from the FAA to draft sustainability plans. However, it is among the first to throw resiliency planning into the mix.

It's one of many firsts for the seaside airport. "Massport has been on the cutting edge of sustainability for years," says Carol Lurie, principal at VHB and chair of Airports Consultants Council. "They developed sustainable design guidelines, they did the first LEED terminal at Terminal A [both projects VHB worked on], and Massport integrated resiliency planning into its sustainability plan."

Now they've taken their planning a step farther with a climate adaptation plan.

"We were happy to see that Massport increasingly has a focus on resiliency," says Mattison. "Resiliency, the ability to maintain or quickly restore operations under extreme conditions, is an important aspect of sustainability. In an area like Massachusetts, where the airport is right on the water, we really need to be thinking about sea level rise, increased precipitation, flooding and increased storms. These are very real risks for Boston and the facilities Massport manages."

With that being said, it's still important for all airports to manage their resiliency, Mattison emphasizes. "Climate risk is not just about properties on the water," she says. "It's about all kinds of impacts, heat waves, tornadoes, you name it. How will they handle those sorts of things?"

Mattison outlines several steps to take when addressing risks posed by climate change.



The main purpose of the Consolidated Rental Car facility, known as the "ConRAC", is to consolidate airport-related rental operations and facilities into one integrated facility and to reduce the number of shuttle buses on airport roadways.

- 1) Understand what the risks are. Unless you know what the dangers are, you can't plan strategies for dealing with them.

- 2) Engage in planning to deal with those risks. Part of Massport's planning included creating a task force of partnering agencies; sitting on committees at federal, state and local levels; and preparing for potential threats with key decision makers.

- 3) Engage the stakeholders. Make them aware of the risks and the plans that are being developed. "You can have the best plans in the world but if nobody knows about them, and they don't know what to do when something happens, then a big piece is missing," she says.

- 4) Implement the plan and be ready. Make the airport climate resilient.

GRAY AND GREEN GO TOGETHER

The FAA purposely gave airports leeway to paint resiliency plans with a large brush. Current data on climate-related impacts can be used to evaluate the resilience of airport infrastructure, including the ability to recover quickly from severe weather events and maintain operational efficiency.

"The FAA provides broad guidance on plan content, but airport sponsors are able to identify their own sustainability priorities. Climate resiliency is a common priority," says Marcia Adams, a spokesperson for the FAA.

Mattison recommends airports consider both gray and green resiliency solutions.

The gray piece hardens airport's infrastructure—the bricks and mortar and key components within the facility. "You need to make sure you have electricity to run the facility during a major event, water to operate certain systems, computer and IT technology, and protecting all of that is very important," she says.

But airports also should consider green infrastructure, according to Mattison. "How do we use nature as an ally to achieve certain things?" she asks. Some examples include using natural resources as a buffer. When an airport is on the water, it's important to think about open space and impervious surfaces that can soak up water. "Wetlands are one way to do this; they can guard against flooding," she says. "It's not just about how can we build stuff to keep water out—because in the end Mother Nature will win. The idea is how do we use nature to protect our-

selves and reduce risks, damage, and so forth.”

Massport considered both gray and green approaches in its two-pronged resiliency strategy, which includes:

1) Addressing impacts. This includes hardening critical infrastructure, retrofitting existing facilities, providing redundancy, incorporating resiliency into new projects and cross-training its workforce.

2) Reducing impacts through sustainability. This includes cutting emissions, a sustainability management plan, sustainable design guidelines, MEAP/NEPA compliance and project mitigation, and collaborating with agencies and institutions.

Lurie says the two-pronged approach works because resiliency goes hand in hand with sustainability. “I would say resiliency is an element of sustainability and by the same token sustainability is an element of resiliency. They are very, very connected,” she says.

SET PRIORITIES

“When you consider that in a natural disaster the airport is an important part of the rescue, reopening the airport, or keeping it open, is a pretty high priority,” says Glynn.

Topping Massport’s list of priorities were electronics and key IT infrastructure. The airport reevaluated the location of these systems to ensure they were out of harm’s way. “If there is flooding, but then the flooding recedes, and the electronics or IT systems are damaged, that could put us out of commission for awhile,” Glynn says.

Secondary to that was redundancy. According to Glynn, the airport seeks to add redundant systems and put them in safe locations as well.

Massport’s priority list also calls on the airport to invest in things that harden the facility to higher sea levels and increased storm surges. Sea levels are expected to rise 2 to 6 feet by the end of the century, and as much as 5 feet during heavy storms, so the airport allocated \$9 million for flood doors and barriers, coastal management and portable pumps to keep the airport running after a storm surge.

But the plan also places the airport’s own environmental impacts high on the list and sets efficiency targets for airport operations. The airport strives to reduce energy consumption by 25 percent and greenhouse gas emissions by 40 percent by 2020. It also plans to reduce waste produced by passengers by 2 percent every year through 2030, cut water use by 1 percent a year every year for the next decade, and increase recycling by 60 percent by the end of the next decade.

When it came to reducing emissions, the airport trained its focus on promoting the use of high occupancy vehicles (HOVs) and getting people out of their cars. Boston Logan has one of the largest HOV participation levels in the country and it has a tremendous impact on emissions, says Glynn.

“We also looked at our energy consumption,” says Brenda Enos, assistant director of Capital Programs and Environmental Management

“... resiliency is an element of sustainability and by the same token sustainability is an element of resiliency. They are very, very connected.”

CAROL LURIE, PRINCIPAL, VHB

at Massport. “We use a lot of energy, so we’re looking to upgrade our central heating plant. From a waste management perspective, we’re looking at increasing our recycling. The use of Six Sigma lean processes will help increase our recycling rate.”

The Environmental League of Massachusetts applauds the priorities set by Massport. “The 60 percent recycling rate is commendable; over half of the material they handle would be recycled,” says Mattison. “That is doable and a great thing to strive for.”

Their plans to trim energy consumption and emissions also impressed the environmental organization. “Airports need to consider what systems are running the facilities, and what is being done in terms of education and awareness of employees and passengers,” she says.

“These are all very important to consider for an institution’s carbon footprint. You need to make sure you take advantage of technologies, but also engage your workforce so that you can achieve maximum savings on the carbon and on the dollar side. In this way, airports minimize their contribution to climate change.”

One of the biggest surprises the airport found as it moved through the process was “how simple the solutions were,” says Glynn. Things like moving IT systems from the first floor to the fifth were easy fixes that could keep things up and running no matter what the weather outside. “It’s kind of a daunting topic but when you actually get into the nitty gritty, there are practical things you can do that make a significant difference,” he says.

He adds that a \$9 million figure to make these improvements may seem pricey, but when spread out over five years it’s less than \$2 million a year. Plus there is a return on this investment through reduced energy use and in



SET GOALS MASSPORT

set goals for its resiliency program. The resiliency program strives to:

- ▶ **Improve resiliency** for overall infrastructure and operations;
- ▶ **Restore operations** during and after disruptive events in a safe and economically viable time frame;
- ▶ **Create robust feedback loops** that allow new solutions as conditions change;
- ▶ **Inform operations and policy**, and implement design/build decisions through the application of sound scientific research and principles that consider threats, vulnerabilities and cost-benefit calculations;
- ▶ **Become a knowledge sharing exemplar** of a forward-thinking, resilient port authority; and
- ▶ **Work with key influencers** and decision makers to strengthen the understanding of the human, national and economic security implications of extreme weather, changing climate and man-made threats to Massport’s facilities and the region.

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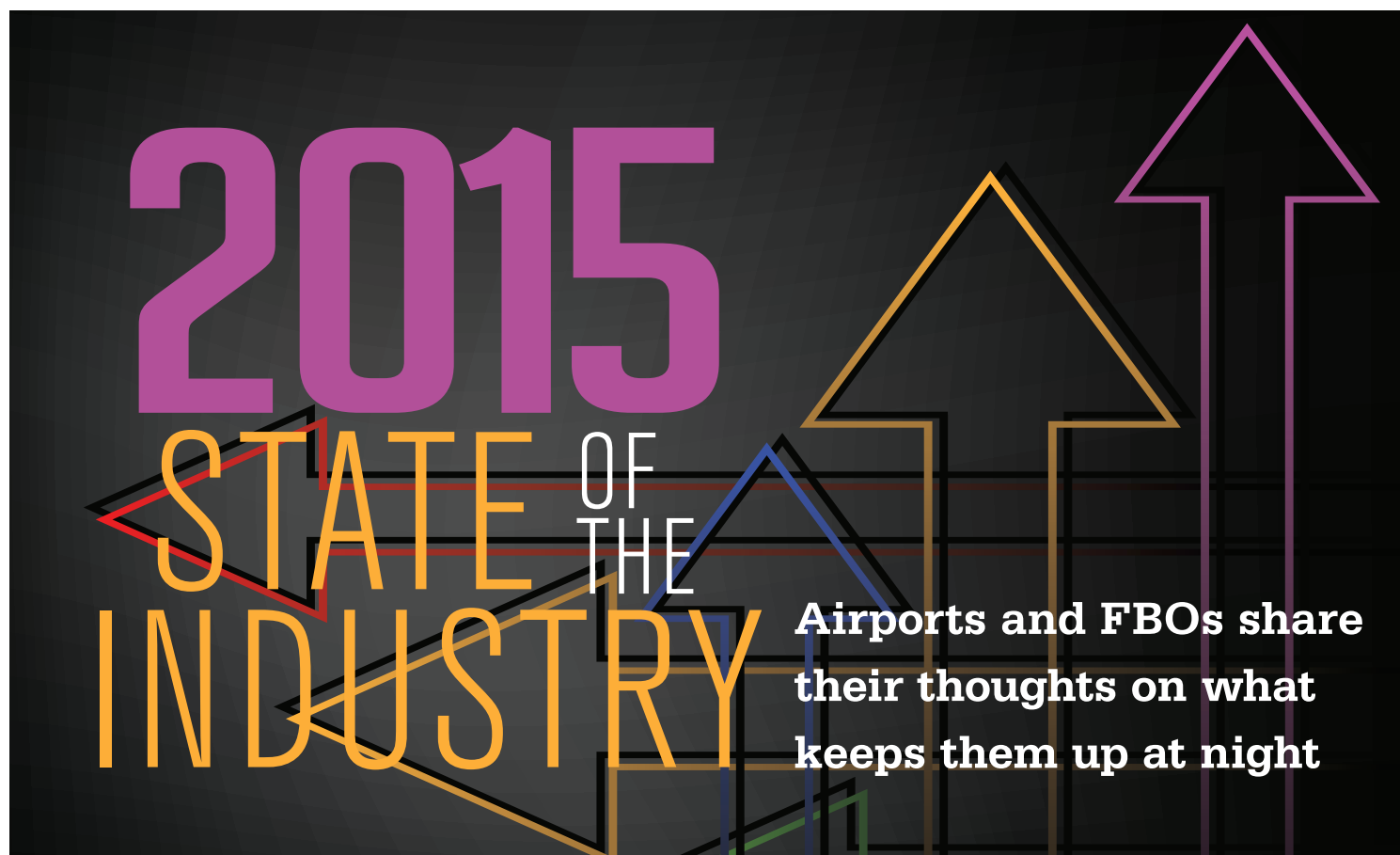
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**Airports and FBOs share
their thoughts on what
keeps them up at night**

Defining whether or not a year has been good or bad is often a matter of one's perspective. A good year for an airport in the South may have been a bad year for one in the Northeast and a truly terrible one for an FBO in the Midwest. The fact is that the needs of airports and FBOs are often a matter of opinion. But by averaging everyone's stories, it's possible to obtain a sense of where an industry is at and where it's headed. Though *Airport Business* didn't go out and talk to every aviation professional from coast to coast to gain insight, we did survey our readers to gather a glimpse of what's on their minds and what keeps them up at night for our 2015 State of the Industry report.

Some topics floated straight to the top in these surveys—and most were not a surprise. Readers say Passenger Facility Charges (PFCs) must increase because aging facilities need renovations and airports need to pay for said renovations somehow. The use of technology continues to explode in the airport space and many hope to jump on the tech bandwagon in the year to come. Refining the passenger experience ranks high as does uncovering new sources of revenue. Transportation Security Administration (TSA) issues and airline mergers continue to impact the way business is being done.

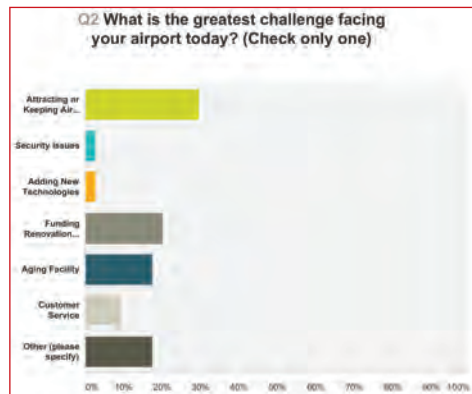
FBOs told us they too are concerned with attracting and keeping air service, renovations and paying for said renovations. And while it wasn't airline mergers that concerned them, they did express concerns about the "Big Three" buying up independent FBOs. Attracting new customers in a shrinking market and adding passenger amenities also keeps them up at night, as does the fact that they have an aging

workforce with few newcomers to replace them. Technology is also changing how FBOs do business and many hope to add more innovations in the year to come. And finally, airport/municipal/FBO relationships run the gamut from the good to the bad to the ugly indeed.

The following is a snapshot of *Airport Business*' findings.

AIRPORTS' GREATEST CHALLENGES

Vice President Joe Biden created a big stir when he likened LaGuardia Airport to a third world country. But the airport, notorious for crowded terminals and other constraints that contribute to horrid flight delays, is moving forward on a \$4 billion overhaul of its Central Terminal



building. Like LaGuardia, airports across the country are seeing an explosion in infrastructure renovations. And it's safe to say that trend will continue. *Airport Capital Development Needs: 2015-2019*, released by Airports Council International-North America (ACI-NA) in April, finds airports need \$75.7 billion to fund projects to handle passenger and cargo growth and rehabilitate existing facilities by 2019.

Trey Bohn, executive director for Travelers' Voice recently said, "We agree with the *New*

York Times that addressing our aging air system should be a top priority. The state of our U.S. airports' infrastructure and our air travel system is in rapid decline and getting worse. Airport modernization lies at the heart of improving the American traveling experience."

The survey findings reflect this sentiment: Improving aging facilities ranks high among aviation's worries, another big worry is how these projects will be funded. At the heart of the matter is PFCs. Airports are allowed to levy a PFC of up to \$4.50 per ticket to help pay for projects like new or expanded terminals and runways that have been approved by the Federal Aviation Administration. However, the fee hasn't kept pace with inflation. The last increase was in 2000—more than 15 years ago!

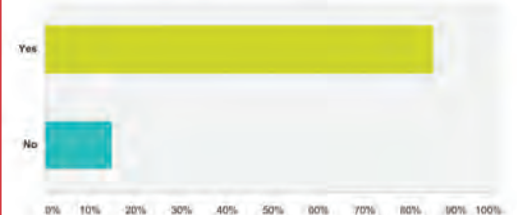
Survey respondents told us they're pleased to see the proposal to raise PFCs to \$8 and say it will go a long way toward funding needed projects. When asked if it should be even higher than the proposed \$8, 77 percent of *Airport Business* readers reported they felt \$8 was high enough.

FBOs also point to a need to improve their facilities to keep pace with customer demand for better services and a high standard of passenger amenities.

SCRUTINY OF SECURITY

News flash: The Transportation Security Administration—the very organization created to keep our airports safe—flunked its own security test recently. It was revealed that auditors from the Homeland Security Department's inspector general were able to sneak mock explosives, weapons and other items through TSA security checkpoints 67 out of 70 tries. Another report released earlier this month disclosed that 73 airport workers with unspecified ties to terrorism were allowed to work in secure

Q10 Recently Congress has blasted the TSA for being inefficient and ineffective in its mission. Do you believe the TSA needs to be changed?



areas. Both reports raised questions about the agency's ability to protect the country's airports and airlines.

This set off a flurry of governmental activity, which to date has included reassigning Acting TSA Administrator Melvin Carraway to a new post and approving Coast Guard Vice Admiral Peter Neffenger for the post.

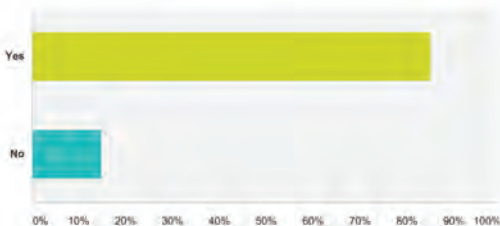
And while the traveling public reports they are quite content with today's airport security—in fact, 88.4 percent indicated they are satisfied with or neutral about today's security measures in a recent survey by Travel Leaders Group, airport leaders do not feel the same way.

On the security front, Hartsfield-Jackson International plans to screen nearly all employees who enter secured areas by the end of this year, and it is building a new three-lane screening checkpoint for employees in the domestic terminal to do this. The move came after a gun smuggling operation involving a baggage handler at Hartsfield-Jackson was uncovered late last year.

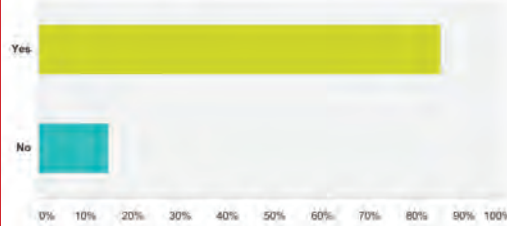
Among the changes announced by Hartsfield-Jackson International:

1. Fingerprint-based criminal history checks every two years for all airport employee SIDA badge holders.
2. Airport and airline employees must be screened.
3. Reduce the number of access points to secured areas to the minimum needed to operate.
4. Increase aviation employee screening including random screening during the work day.
5. Do a new push of the Department of Homeland Security's "If You See Something, Say Something" initiative.

Q5 Will you need to renovate your airport in 10 years?



Q4 Will you need to renovate your FBO in 10 years?



Curiosity got the best of us, and we asked readers whether they were screening badged employees at security checkpoints. We've learned that quite often employees are not receiving additional screening once they obtain a badge that gives them access to secure areas of the facility.

TECH TRENDS

Airports are seeing a growing do-it-yourself movement in passenger processes at airports worldwide, reports the annual SITA/ACI Airport IT Trends Survey. Printing out boarding passes and self-checking bags are just the tip of the ice-

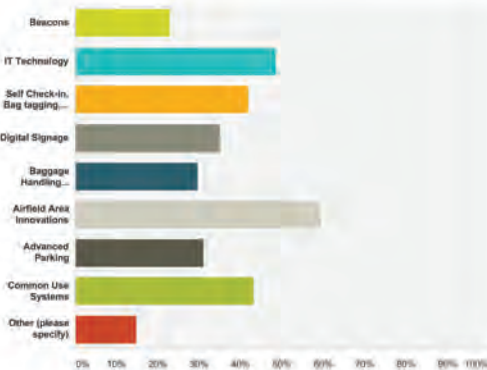
Q11 Are you currently screening badged employees at security checkpoints?



berg when it comes to self-service. Eventually experts predict the process of moving from Point A to Point B within the airport will be largely self service, with a smattering of guidance from airport employees.

With that in mind, *Airport Business* sought to find out just what types of technologies airports sought to add in the near future. We found that airfield area innovations topped the list but was followed closely by IT technology, common use systems, and self-service opportunities. Other technologies on the list included efficient security screening approaches, digital signage and apps.

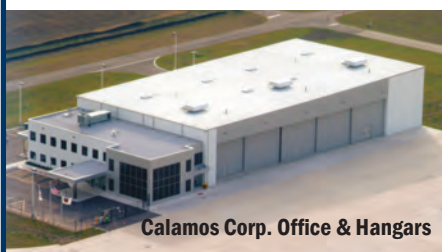
Q6 What technology do you hope to add at your airport in the future? (Check all that apply)



And at the FBO where customer service is the name of the game, leadership is finding that technology is needed here as well. Software/IT technology topped the list of needs with fuel tracking and accounting software making the grade as well as PCI compliant credit card storage, flight planning and weather planning software services.

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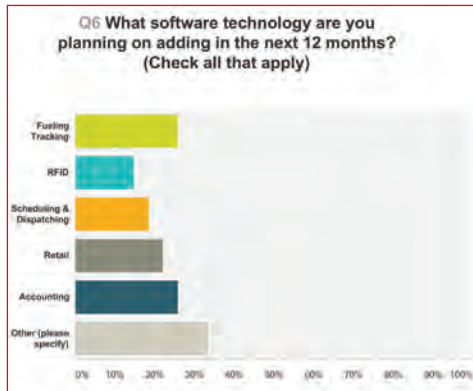
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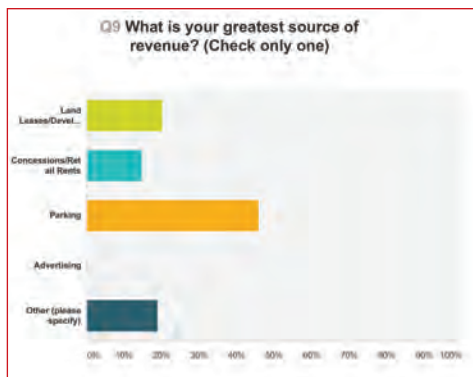
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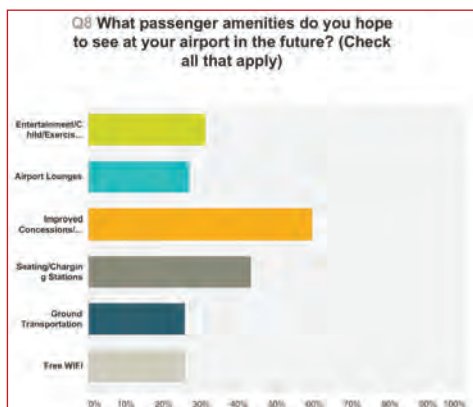


PAX AMENITIES

Airports face very thin margins—and revenue from airlines does not fully cover their operating costs. Generating non-aeronautical revenue has gained momentum, and one way airports are doing this is by improving the passenger experience.



But first it's important to understand exactly where airports currently derive their revenue. Here is what we learned, parking not surprisingly tops the list of revenue generation, but advertising on kiosks, digital signage etc. received



a low ranking (an untapped source of revenue for many perhaps?) Airports are increasingly realizing that passengers have a choice in the airport they fly out, and many are willing to drive a greater distance for a better traveling experience. A variety of passenger amenities are

being added from live entertainment to yoga rooms to pet relief stations and everything in between. Take a look at the passenger amenities our readers hope to see at their airports in the near future.





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AAAE tech whiz Chris Runde restores a home built in the 1890s in his spare time.

Chris Runde:

Helping Technology Take-off

The head of AAAE's Airport Innovation Accelerator talks about his plans to help companies launch new technologies and services in the airport space



The stars aligned when the American Association of Airport Executives (AAAE) tapped Chris Runde to take on the opportunity of a lifetime running its new Airport Innovation Accelerator. The Accelerator strives to drive greater innovation in airports by assisting qualified companies in bringing their technology and services to the airport marketplace.

For a guy focused on technology since he was a little kid, this new role is a dream come true.

"The concept itself—the idea that you can bring innovation to the airport community quickly—is incredibly exciting to me," Runde says. "I see this job as a perfect fit for my interests and my background. It has a perfect mix of technology, airports, start-ups, innovation, and the fact that it's tied to an organization with a tremendous reputation could make this something really incredible."

Runde is no stranger to technological developments. Upon graduating from the systems engineering program at the University of Virginia, he set to work delivering large-scale IT systems for Accenture. He later moved to a role with the Transportation Security Administration (TSA), back in 2002, when the organization was brand new and faced with many challenges, one of which was vetting the backgrounds of 50,000 new employees. In this position, Runde was intricately involved in creating the TSA's personnel security vetting system. "At that time, the administrator of the TSA was trying to figure out how to get through that many background checks in a compressed timeframe," Runde says. "In the meantime, all of these people were out on the front lines working, so there was a mandate to get it done before the end of the fiscal year."

Runde says he must have done something right on this project because by the end of the contract, about two years later, the TSA hired him to manage that system. By the time he left this post, the TSA was vetting around 10 million individuals every year. He was then tapped in 2008 to step-up the biometric credentialing effort for airport employees. "At the time, there were some issues at a major airport," he recalls. "One of their vendors was using old badges for new employees. When new hires started, the manager would point to a box in the corner and say 'Pick out a badge that looks like you and go off and conquer.' That raised concerns when investigators found out about it."

He says that this is often how the security industry works. "When you uncover vulnerabilities, it's important to find solutions that can address them quickly," he says. "That sort of ties us back to the Accelerator, and the need for a system like this."

Airport Business chatted with Runde to learn more about the AAAE Airport Innovation Accelerator and the ways it hopes to bring technology to the airport sector.

WHY IS THE AAAE AIRPORT INNOVATION ACCELERATOR NEEDED?

It is critical for the industry to have the right solutions at their fingertips at the right time. With the speed at which technology moves and changes, if you wait for a standard procurement cycle the technology you developed may be outdated.

I see the Accelerator as an organization trying to identify a product market fit. What do the airports need and how do you fill them? That's one of the disconnects I often see. Companies will go out and build something, and they'll wait for people to come. In contrast it's much more important for companies to actually talk to the airports and figure out what they need and build product to meet those needs. Then they need to come back repeatedly to make sure they are

building what is actually important to airports.

The effectiveness of the Accelerator, its real intent, is to be a hub for airport innovation. I see it as a confluence of airport input directly throughout the process coupled with government initiatives and awareness, and an understanding of what regulators are looking at. These are the three core components that make up the Accelerator.

HOW WILL THE ACCELERATOR BRING AIRPORTS AND TECH COMPANIES TOGETHER?

One of the tenets of the Accelerator is that it serves the airport community. A startup targeting the aviation sector needs to listen to airports. It is key to their success. But another element of success is understanding how airports

ON WHY THE ACCELERATOR IS NECESSARY ...

It is critical for the industry to have the right solutions at their fingertips at the right time. With the speed at which technology moves and changes, if you wait for a standard procurement cycle the technology you developed may be outdated.

ON HOW COMPANIES CAN BE SUCCESSFUL IN THE AIRPORT MARKET ...

A startup targeting the aviation sector needs to listen to airports. ... and understand how airports work—their procurement cycles, their organizational structures and their emerging technological needs.

ON THE ACCELERATOR'S GOALS ...

The broader goal is moving it [technology] toward a commercialized solution; making it readily available and easily accessible for airports. ... We want to get new developments into their hands as quickly as possible, but we also want to make sure it's valuable before it gets there.

VETTING ACCELERATOR COMPANIES

WHEN the American Association of Airport Executives (AAAE) President and CEO Todd Hauptli announced the establishment of the AAAE Airport Innovation Accelerator, he stressed the goal of this division was to help drive greater innovation in the airport industry by helping qualified companies bring new technology and services to the airport marketplace.

"The AAAE team has a demonstrated record in delivering service, innovation and results to airport executives and the aviation industry," Hauptli said. "The Airport Innovation Accelerator builds upon that heritage and represents an important enhancement aimed at serving our members and those who are eager to provide solutions in the airport environment."

The Accelerator will focus on assisting emerging companies as well as established companies. The assistance of the Airport Innovation Accelerator will serve critical needs for interested companies, but also engage AAAE members in providing assistance, guidance and expertise that will in turn lead to better products and services in the airport marketplace, Hauptli stressed.

According to Hauptli, Accelerator partner companies will be evaluated based upon a series of criteria including:

- ▶ **Business Potential.** This includes quality of business strategy, preliminary assessment of technology or product being proposed, clarity of market focus, assessment of competition and other business factors.
- ▶ **Airport Industry Merit and Commercial Viability.** This is based upon company descriptions of airport business merit and likely commercial viability addressing likely airport market opportunities as evaluated by the Accelerator team.
- ▶ **Quality of Management Team.** The business itself and/or technical experience related to the focus of the business.
- ▶ **Potential Impact on the Airport Industry.** This includes contribution to the development of the aviation sector generally, likely commercialization of technology, as well as likely benefit to AAAE members, their tenants and the traveling public.
- ▶ **Ability to Utilize Accelerator Services.** The Accelerator needs and the Accelerator's potential ability to assist the business.

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work—their procurement cycles, their organizational structures and their emerging technological needs. The only way to do that effectively is to really immerse yourself in the airport marketplace. The challenge for companies is it's often either impractical or unappealing to get that type of exposure and insight into the market. What that leads to is the development of good solutions, potentially valuable solutions, that never make it into airport hands.

Our goal behind the Accelerator is to marry these innovations and new ideas with airports and do so early and often. That includes connecting technologies with airports and having conversations but also cultivating those ideas into viable commercial solutions.

WHAT TECHNOLOGICAL INNOVATIONS COULD REALLY MAKE A DIFFERENCE AT AIRPORTS?

There are so many innovations that are happening inside airports as well as in other sectors that could improve a number of key areas. One of the top things I have on my white board is customer service—the reality is airports are in the business of customer service; serving hundreds of millions of passengers every year. Another one is operations. There are a lot of things happening behind the scenes that keep flights on time, ensure bags arrive at their right destination, and so on. The other elements include safety and security, which are big things from a regulatory standpoint.

In those areas alone, there's lots of opportunity. When you talk about customer service, mobility is a key initiative that could improve the passenger experience. There are a number of mobile apps that will connect customers with amenities at the airport. But there are also some that will guide travelers to the right checkpoints and do other things that can make life better for everyone involved.

Some other areas include retail and commercial operations. These are the vendors providing services within the airport community. Another one is automation and monitoring. This falls into the realm of UAVs or other technologies that have the ability, for instance, to scan the perimeter of an airport without an individual doing that. Some of the automated capabilities that we're seeing in other industries include unmanned, remote-controlled snow removal systems or de-icing systems.

We're also looking at landside operations as

an area of interest. Another one that I have on my white board is emergency response and medical issues. Technology and services that give airports the ability to respond to anything that happens on their premises. Improving the passenger experience gets its own bullet.

Right now, the universe of solutions spans many different areas. We're trying to zero in on those that are most impactful to airports. The best thing for us to do is to listen to the airports. That's the stage we're in right now—getting that airport feedback.

HOW WILL YOU GATHER AIRPORT FEEDBACK?

We have issued surveys to gather some statistics on what airports need. But I'm a big proponent of face-to-face conversations and meeting with airport directors directly to understand what their challenges are. It's one thing to have data points. It's another thing to walk the tarmac with operators and understand where their challenges lie. So for me it's a combination of convenient data collection and getting up close and personal with airport personnel to understand their specific needs.

HOW WILL YOU ACCELERATE MOVING NEW TECHNOLOGY INTO AIRPORTS?

There are a few key tenets that we would look to provide innovators with. One is an education on the market itself. If you go in blind without an understanding of the procurement cycles, the organizational structure, and the political or

regulatory constraints that airports deal with, you are already at a disadvantage. The second is mentoring and introduction. I believe a key component centers on the lean start-up. The concept there is moving away from a 5-year business plan and engaging customers early and often. The goal is to make sure you're building something that people care about before you invest time and resources. Going forward with a solution and taking it out to airports when it isn't viable or isn't valuable is a waste of everybody's time.

So, after education, the next task is getting the word out to airports and getting direct feedback. A key component is listening to what the airport's are saying then coming back to them with what we thought we heard and how our solution could meet those needs.

Then, after education, mentoring and introductions, we're looking at how do we marry that technology with ongoing government initiatives? Is there a way for us to address multiple challenges in a more efficient way?

Finally, the broader goal is, if this is a viable and valuable solution for airports as a whole, moving it toward a commercialized solution; making it readily available and easily accessible for airports. I think that's one of the keys that we have for the Accelerator and I think that's probably the main reason we picked 'Accelerator' as a name. We want to get new developments into their hands as quickly as possible, but we also want to make sure it's valuable before it gets there.



LET'S TALK ABOUT CHRIS

- ▶ **Always Taking Notes.** I'm a huge user of Evernote. That's my mental sanity tool where I capture all my thoughts, my to-do's, any good ideas, and quotes that come my way that I really like. It's on my laptop but it's also on my phone. I can access it from anywhere.
- ▶ **Always Connected.** The ability to access the Internet [while traveling] and do it for free is a game-changer. You don't even skip a beat in your workday. You can connect with family while you're on the road. The availability of WiFi has really changed my whole travel experience. I can't imagine going through an airport and not having it now.
- ▶ **Always Busy Renovating (at least for now).** We just bought an old home, built in the 1890s, and we're in the process of renovating that. That's been a passion I didn't know I had. It takes a lot of time. But, the home needed some love and it's been a very rewarding effort.





Walking the Security Tightrope

The challenge of crafting secure airports that do not inconvenience passengers

Passengers want airports to be inviting, hospitable, comfortable and free flowing, but also want them to be as tight as Fort Knox from a security standpoint. The same passengers scream like the Tasmanian Devil if tight security inconveniences them in any way

Pre 9/11/01 we pax had free run of dang near the whole airport. Nobody checked IDs. When friends/family flew in, we met them at the gate. If you bought a non-refundable ticket then couldn't use it you could give—or sell—that ticket to someone else and they could use it. We could park near the terminal. Life was easy.

Today, the public still has relatively open access within the pre-TSA part of the airport. To go through TSA, however, you'd better wake up, straighten up and—pun intended—fly right. You can't get through unless you've got the right papers and your carry-on paraphernalia better be packed right. Heaven help you if you beep!

Now it's gong to get worse—or better, depending upon whom you ask. It's likely to be slightly less convenient, because security will be expanded, but safer, because of that tightened security.

Atlanta's Hartsfield-Jackson International Airport—the world's busiest airport—plans to screen nearly all employees by the end of this year, thus adding about \$4.5 million to the airport budget. This is being done partly because a gun-smuggling operation involving a baggage handler at Hartsfield-Jackson was uncovered late last year. “The bad publicity is really hurting us,” says Aviation General Manager Miguel Southwell.

I'm glad to see tighter airport security. I just hope we can keep it simple, refuse to panic, let our professionals lead the way and keep media and Congress from overreacting too much and too fast.

I believe that the people who know the most—and can do the most—about airport security are those currently operating our airports. Perhaps they can get the job done before the screamers push their own agendas too far. I still remember when our country was trying to decide how to select the very first astronauts. There was talk of testing circus performers, race drivers and athletes, searching for the “right stuff.” President Eisenhower called BS, saying “We've got test pilots for that.”

I also remember when Congress—not the FAA, but Congress—reacting to a fatal crash including one of their members, mandated ELT usage pretty much across the board. The

industry was literally incapable of building ELT batteries fast enough and it crated a mess.

Well-qualified people run our airports. They talk, meet and mingle with each other to come up with solutions to problems. As Christopher Bidwell, vice president of Security and Facilitation at ACI-NA put it, “Airport Directors and security professionals at airports routinely work together to ensure the security of travelers. In addition, ACI-NA offers a forum for our airport members to discuss aviation security initiatives and share best practices.”



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John Wayne Airport develops a fair and equitable permit for a new form of ground transportation—the Transportation Network Company

Owned and operated by the County of Orange, John Wayne Airport (code: SNA) is situated in the heart of Southern California, 35 miles south of Los Angeles and 90 miles north of San Diego. The airport serves more than 9 million passengers each year on 20+ nonstop routes throughout the United States, Canada and Mexico. SNA offers an easy-to-navigate, convenient airport experience with vital services that meet the needs of today's sophisticated travelers, including a variety of ground transportation options.

John Wayne Airport prides itself on being proactive in providing new services and facilities to its customers. It was one of the first airports in the country to offer in-line bag screening, a facility-wide Common Use Passenger Processing System (CUPPS), and its own central utility plant. With all these firsts to its name, it made sense for John Wayne Airport to take an early interest in the fast-developing world of Transportation Network Companies (referred to as TNCs in California).

"TNCs are a new and innovative business model that provides a popular transportation option for many of our travelers," says Board of Supervisors Chairman Todd Spitzer. "It was important for us to find ways to accommodate this new technology."

DEVELOPING A FAIR AND EQUITABLE POLICY

Airport officials started the process with a commitment to ensuring that all of the airport's ground transportation providers were treated fairly and equitably. While the aim was to continue providing passengers with a full range

of ground transportation options, the airport needed to ensure the safety and security of both passengers and the airport itself. Led by the airport's Operations division, with input from Business Development, County Counsel, Public Affairs and Risk Management, John Wayne Airport began conversations with TNCs in March 2014 to get a better understanding of their operating model.

As a result of these discussions, the airport began drafting a modified permit for TNCs. While the permit was under development, the airport advised the TNCs that they would need to cease passenger pickups pursuant to the County of Orange Codified Ordinance. TNCs were, however, allowed to continue drop offs during this period as long as they held a valid California Public Utilities Commission (CPUC) permit.

During the permit development process, John Wayne Airport monitored the CPUC's regulatory actions and public hearings as well as TNC-related legislation that had been introduced in the California legislature. Once TNC insurance requirements had been established



through the legislative and regulatory processes, the airport had a basis for creating its own TNC permit. John Wayne Airport incorporated specific insurance requirements in the permit that minimized coverage gaps and overlaps, and included language to address operational characteristics unique to the TNC operating model, including the need to "track" TNC vehicles while on airport property.

The airport tracks other forms of commercial ground transportation providers with Automatic Vehicle Identification (AVI) transponders. However, airport officials realized early on that issuing AVI transponders to potentially thousands of TNC drivers was neither financially feasible nor administratively practical. TNC companies utilize geo-fence technology and GPS-equipped smartphones with apps that have

the ability to report vehicle location and identify the specific phase of TNC activity (app open, customer request accepted, customer in vehicle, ride completed). As a result, TNC vehicles can be tracked, and trip fees can be calculated, using GPS and trip data.

John Wayne Airport is currently in discussions with Transcore Inc., its existing AVI system provider, to determine whether TNC operators can send activity reports to its existing AVI system. The American Association of Airport Executives (AAAE) also offers a system that tracks app-based ground transportation transactions. In both systems, the data used to generate trip fee billings is ultimately supplied by TNC operators. Regardless of the system the airport ultimately selects, the airport's view is that it's important to audit the accuracy of the TNC-provided data by conducting periodic curbside observations of TNC activity. John Wayne Airport's TNC Ground Transportation Permit requires TNCs to provide monthly trip reports that show all driver activity at the airport. Field audits are part of its standard quality control program for all commercial ground transportation AVI system users.

In addition to tracking TNC vehicles, the airport's new permit also addresses the unique insurance requirements associated with this



business model. To avoid potential issues associated with inadequate or expired driver insurance, or instances where more than one insurance company is responsible for driver liability, the John Wayne Airport permit requires that TNCs provide primary insurance at all times while drivers are on airport property.

By the summer of 2014, a draft TNC Ground Transportation Permit was completed and was provided to multiple TNCs for review and comment. The collaborative approach to the permit development process ensured both the airport and the TNCs could fully discuss their respective concerns prior to a final decision.

A PERMIT IN PLACE

A year later in March 2015, the TNC Ground Transportation Permit was approved by the Orange County Board of Supervisors. Supervisor Michelle Steel, whose district includes John Wayne Airport, made the motion to initiate the permit process.

"It is important that we allow a free and fair market for these providers, but also that we take steps to ensure a safe environment for passengers," she says. Within days of the Board's action, permits were issued to Lyft, Uber and Wingz.

Since being authorized to pick up passengers at John Wayne Airport, Airport Police

Services and Operations staff have logged samples of TNC activity by company name as depicted by the trade dress (corporate logo displayed in or on the vehicle), vehicle license number and time of passenger pickup. Airport officials have been pleased to see that their logs exactly match the data provided by the TNCs.

Clearly, this is a service passengers wanted to see at the airport; demand for TNC services has been impressive from day one. While there were many concerns at the outset about ensuring the safety of airport customers, providing a level playing field with other ground transportation providers and protecting the county from liability, the airport reports it has been able to address—and resolve—these concerns and has been able to help make this very popular service available to passengers at John Wayne Airport.



ABOUT THE AUTHOR

Scott Hagan,
Deputy Airport Director, Operations
John Wayne Airport

Scott Hagen is the deputy airport director of Operations at John Wayne Airport. Prior to this role, he was the manager of Landside Operations at the John Wayne Airport for more than six years.

"TNCs are a new and innovative business model that provides a popular transportation option for many of our travelers. It was important for us to find ways to accommodate this new technology."

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Airports Build a Case for **Biometrics**

How biometrics are helping airports construct customer satisfaction and build safety enhancements

The US-VISIT program is by far the most extensive of all biometric airport initiatives in the United States, collecting both digital fingerprints and photos from foreign passport holders entering the country. But what about outside the national government? How can biometrics be useful in the daily operations of an airport and improve security, while enhancing the passenger experience?

Other countries have been quicker to adapt biometric technology, whether it be facial, iris or finger recognition; the three most common options today. From check-in, to bag drop, security and immigration, then final boarding, biometric applications have widespread potential in airports.

SITA's Head of Portfolio Management, Government and Security, Sean Farrell, agrees. He says the reason airlines and airports have been slow to jump on the biometrics' bandwagon is because of the difficulty integrating these technologies with airline business processes and systems, "as well as passenger concerns about privacy and lack of industry standards governing how biometrics should be used."

Chris Bidwell, vice president of Security and Facilitation at Airports Council International – North America (ACI-NA), compares biometrics to the increased availability and affordability of cell phones. As the technology became more popular in the market, the cost decreased. It was a natural transition, he says.

"With biometrics I think we're in the same situation (as the cell phone trend) and in the fairly early stages of it," Bidwell says. He adds that it's not widespread yet in the United States, though some airports definitely do have biometrics capabilities.

"They need something that is reliable, cost-effective and can be integrated with existing platforms at airports. These factors are important, and all have to be considered when looking at installing various biometric technologies," Bidwell says.

ANOTHER LAYER OF SECURITY

Terry Hartmann, vice president of Transportation with Unisys, explains that when used for border security, biometrics provides immigration officials more time to verify identities of people entering the country, and takes the regular, self-verifying travelers off the table right away. Frequent travelers can use the Global Entry kiosk program of the U.S. Customs and Border Protection, which allows pre-approved, low-risk travelers to receive faster clearance upon arrival

without needing to speak with a Customs and Border Protection officer. Forty-two airports and 12 pre-clearance locations were available in the United States as of December 2014, and nearly 2 million members were enrolled.

Another security use for biometrics is simply geared toward airline/airport employees and other contractors moving from the unsecure to secure sides of the terminal. Hartmann says badge stealing is a real occurrence, and a fingerprint or iris scan provides an additional layer of security to the identification badges already in use.

Farrell says that any system is dependent on the quality of vetting done at enrollment, and is why the airlines should look to build new processes around government-issued credentials such as e-Passports. "This approach also addresses the need for travel document verification and the integration of passenger risk assessment to further streamline passenger processes, particularly at security and the border crossing where passengers who are low risk and identifiable by their biometrics can be offered a truly differentiated experience," he concludes.

A COMPETITIVE ADVANTAGE

This is something every airport aims to give its passengers.

THE TOP TWO - PROS AND CONS

SEAN Farrell, head of portfolio management, government and security at SITA, discusses the pros and cons of the fingerprint and face biometric technologies in use at airports today:

FINGERPRINT

- **Pro:** Fingerprints are relatively low-cost and easy to integrate.
- **Cons:** Passengers must touch a sensor, which is not acceptable in some cultures. (Although newer technologies are contactless.) "Fingerprints also have the disadvantage that governments do not currently share the encryption keys with airlines that would allow use of the fingerprint data stored in newer generation passports because of privacy concerns," says Farrell.

FACE

- **Pro:** High accuracy can be achieved without the need for specialized lighting, or multiple or moving camera systems. "The advantage of face is the ability to match the live face against face data in passports, plus face biometrics are consider less sensitive from a passenger privacy perspective," he adds.
- **Con:** Face capture can be time consuming if not implemented well, plus integration of face matching into airline self-service systems adds significant cost to the base systems.

Hartmann says that pre-9/11 biometric technology in airports was first seen in Amsterdam as a service to attract customers, where fliers could just as easily go to Brussels. Frequent fliers were encouraged to use the airport by priority access through immigration lines and other services such as parking and first-class check in, all with iris recognition. Today, 50,000 people use that service.

He sees the passenger experience as one

worth investing in. "Obviously this is a benefit to airports," he explains. "They would much rather have people spend time in retail and concessions than in immigration and security lines. Your frequent travelers will go to airports that provide services like Global Entry."

On May 20, Miami International Airport began offering this competitive advantage, but for a price. CLEAR, a program that uses fingerprint or iris scans to confirm identification

allows enrolled travelers to bypass long security waits through a separate "CLEAR" line.

The airport is offering a two-month free trial, preceded by a CLEAR membership of \$179 with each additional family member \$50 and children under 18, free. While members must still remove shoes, belts and all the usual procedures, they can sail through security in less than five minutes. The CLEAR CEO Caryn Seidman-Becker calls it the "ATM of identity." Passengers use a pre-approved biometric CLEAR card to expedite their airport process and at MIA, this capability is available in Concourses D, E, H and J. Miami International is actually the 12th airport in the country to integrate CLEAR; Orlando International Airport was the first several years ago.

Other ways biometrics can improve the passenger experience is through automatic boarding, entrance to lounges such as the international lounge or airline frequent flier lounges. This also enhances security in those areas, and ensures that those who enter are absolutely qualified to do so. Bidwell remarks

BIOMETRICS BEING TESTED AROUND THE COUNTRY

A THREE- month test, "1:1 Facial Recognition Air Entry Pilot," spearheaded by the U.S. Department of Homeland Security and supported by Unisys, is underway at Washington Dulles International Airport in northern Virginia, using facial recognition to catch passport imposters. U.S. Customs and Border Protection officers are randomly scanning approximately 400 people per day as the first part of this three-part pilot program called "Apex Air Entry and Exit Re-Engineering (AEER) Project."

The second phase is called the "Pedestrian Biometric Experiment" and Customs and Border Patrol agents will begin collecting facial and iris scans of pedestrians crossing the border near San Diego, to confirm identities and look for people on government watch lists.

Finally, the third part of the pilot program is slated to be hosted at Atlanta's Hartsfield-Jackson International Airport. For the "Biometric Exit (BE) Mobile Experiment" Customs and Border Protection officials will use a handheld biometric device to identify foreign nationals as they exit the country. They will use the information to search for a match and determine if they have overstayed their allowed time in the United States.

There has been mixed response to these initiatives. A recent CBS interview revealed feelings from Jake Laperruque, a fellow at the Center for Democracy and Technology. "Here we have a program where individuals are not suspected of wrongdoing and are engaged in routine behavior," Laperruque explained. "And they are being required to submit a piece of biometric data that could identify them later and that's going to be retained. That's definitely a dark road to be going down with a lot of potential for abuse." In response, official objectives laid out by the AEER team are as follows:

- ▶ To understand the current operations in entry points at airports across different airport environments and configurations. The analysis will include recommendations for introducing or enhancing technologies and/or modifications to existing processes to expedite screening.
- ▶ To analyze potential approaches to meet the Congressional mandate for biometric entry and air exit. The challenge is to increase the ability to confirm the identity of persons entering and departing the U.S. while ensuring that processes are efficient and keep pace with growth in international air travel.
- ▶ To develop tools that enable the analysis of the impacts of changes in traveler screening operations. All air entry/exit analysis, models, technology prototypes, and knowledge products will be transitioned to Customs and Border Protection for use after Apex AEER concludes.



SITA reports fingerprint scanning systems are inexpensive and fairly easy to implement.



Biometric solutions can be useful for check-in to bag drop, boarding to security, and immigration.

to engage all stakeholders, from the airlines to security and border management agencies. “

Bidwell advises airports to do a cost/benefit analysis and determine whether the deployment of a biometrics’ system is beneficial for that airport’s specific needs. “What problem are you trying to solve?” he says airport executives should ask themselves. “How would biometrics or some other type of system appropriately solve that problem?”

He says there is not much assessment done on the use of biometrics in airports, and that alone deserves more attention, particularly as the industry sees the systems’ capabilities enhanced. “We have to provide low failure rates in biometrics,” he says. “Airports need high reliability and low failures at the same time.”

Biometric technology is a “tool in the toolbox,” according to Bidwell. “It can be useful in helping limit access to authorized individuals, but it does not prevent unauthorized access by unauthorized individuals. That’s an important distinction.”

When looking to implement biometrics, airports have to balance their existing technology and processes with new ways to enhance passenger experiences, all while maintaining security secure facility. “That is very much the business of airports,” Hartmann concludes.



ABOUT THE AUTHOR

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“They would much rather have people spend their time in retail and concessions areas than in immigration and security lines.”

TERRY HARTMANN, VICE PRESIDENT OF TRANSPORTATION AND INDUSTRY APPLICATIONS, UNISYS

that these technologies and changes in processes are keeping airports secure, but also helping people return to the pre-9/11 mentality, a benefit of its own.

IMPLEMENTATION AND INTEGRATION

Farrell says the main challenge facing airports is not the technology itself, as it is relatively mature, but ensuring they are implemented in a way that is scalable and affordable. Also, he says the technology must be universal at every airport. “The best way to accomplish this is for airports to leverage the existing shared common-use IT infrastructure used by airlines,” Farrell advises.

To be most effective in introducing biometric technology, Farrell says airports should first look

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Move Along

Automated people movers are passenger-friendly transport systems that move passengers via rail between and within terminals, and to and from regional transit centers, and are a must when looking to improve airport accessibility.

As global airline passenger traffic continues to increase, access to and from airport facilities has become a top planning priority. As airports embark upon major infrastructure enhancements, they continue to struggle to meet increasing passenger demand with even greater efficiency and use of state-of-the-art technology. In congested urban areas where airports are often landlocked and infrastructure expansion is not always possible, the most efficient combination of intermodal transportation options must be considered and implemented.

Increasingly, large international airports worldwide recognize the importance of mobility to passengers and employees and have implemented automated people mover (APM) systems, which have been successfully used for surface transportation for nearly four decades. By transporting passengers via rail between and within terminals, or to and from regional transit centers, people movers have proven to be a viable passenger-friendly transport option and an inherent part of future airport expansion plans.

AUTOMATED PEOPLE MOVERS

Automated people movers are transit systems with fully automated, driverless operations, featuring vehicles with up to four cars each,



For the Tampa International Airport Master Plan, recommendations include a \$4 billion modernization and expansion involves a new consolidated rental car facility linked to the main terminal with an automated people mover.

capable of carrying 20 to 100 passengers who are mostly standing. Traveling on guideways with an exclusive right-of-way, they are distinct from traditional heavy- and light-rail public transportation in that they operate without drivers or station attendants. Typically, people movers are able to use a narrower right-of-way and smaller vehicles than traditional rail transportation services.

BENEFITS OF APMS

Light rail transportation alternatives, including landside people movers and intermodal transit centers, can reduce traffic congestion in the immediate airport vicinity as well as alleviate passenger congestion within the facility. Mixed-mode transit expedites passenger flows at busy airport facilities and can minimize traffic bottlenecks in and around passenger terminals.

Automated people movers can solve the problems of increasing transit deficits, traffic congestion and associated air pollution, and significantly improve the airport passenger experience. With easier boarding and capacity flexibility, global airports are embracing this transport technology.

Terminal buildings are often spread out in today's airport environments, thus APMs can enable greater numbers of passengers to move more quickly over longer distances, when walking or buses are not feasible. This helps passengers arrive at their aircraft gates faster and with less stress, especially those traveling at large airline hub operations.

APM systems are now being designed to connect airport terminals with landside facilities such as parking, car rental services, regional transportation services, hotels and other related employment and activity centers.

San Francisco International Airport's intermodal solution is a classic example of seamless connectivity between the airport and the local metropolitan area. The airport's automated people mover—AirTrain—links directly with the Bay Area Rapid Transit System (BART), which is a heavy rail line that serves many municipalities in the San Francisco Bay Area. Passengers can travel more conveniently between their homes and the airport, leaving their cars at home.

The HNTB-designed BART to San Francisco International Airport Extension and Stations project was a \$500 million six-mile extension of underground subway, one mile of at-grade trackway and one mile of aerial bridge structure. The extension provides a direct train-to-plane

connection that has become the No. 1 choice of air travelers taking public transportation to San Francisco International Airport.

PLANNING AND INTEGRATION

The planning process for an automated people mover project involves a carefully documented program, which begins with identifying airport needs and concludes with a complete project scope for optimal design, construction and implementation. It is important to note that the

people mover design is a subsystem of the whole airport system. Thus it is essential to conduct all planning in close coordination with the airport's overall planning process since the APM will connect with and affect other major airport facilities.

Implementing an advanced transit system requires significant advance planning, including environmental impact studies, passenger traffic and surface transportation congestion analysis, construction feasibility, impacts to other airport facilities, required permits and approvals, and

SAN FRANCISCO'S BART STATION

HNTB served as the principal designer for the Bay Area Rapid Transit's (BART) eight-mile San Francisco Airport Extension Line, Track and Systems. This project was a Federal Transit Administration-sponsored Turnkey Demonstration Design-Build Project and BART's first design-build project. The San Bruno Station and South San Francisco Station are part of the eight-mile BART extension for which the project scope included architectural and structural finishes, a parking structure, on-site civil design and off-site roadway improvements.

As both engineer of record and prime consultant, HNTB's work included line, trackwork and systems, the parking structures at both the San Bruno Station and the South San Francisco Station. The design included over six miles of underground subway, more than one mile of at-grade trackway, and over one mile of aerial bridge structures, connecting BART to the airport. Additionally, the work required structural and civil design elements, trackwork design, systems design, grading and utilities design, ventilation structures, traction power substations and train control facilities.

In addition to architectural and structural finishes, underground platforms, and bus transit connections for both stations, the design involved a five-level, 1,000-space parking structure at San Bruno and a three-level, 1,200 space parking structure at South San Francisco. A combined city of San Bruno and BART Joint Police Station was also completed.

The American Society of Civil Engineers awarded its prestigious 2004 Outstanding Civil Engineering Transportation Project in the State of California to the Bay Area Rapid Transit District and HNTB Corporation for the BART extension to San Francisco International Airport.

Today, BART serves 91 million passengers annually and the BART/SFO extension continues to provide the greater San Francisco Bay Area with an efficient connection to the global transit network, and serves as a link to the rest of the world.



The BART to San Francisco International Airport project is a \$500 million six-mile extension of underground subway, one mile of at-grade trackway and one mile of aerial bridge structure.



The Hartsfield-Jackson Atlanta International Airport south concourse development includes plans for new mid-field concourses served by a second secure APM system.

airport coordination with affected agencies. Regional and local areas should consider the benefits of reducing individual vehicle trips into and around an airport property. Operational challenges must be addressed including how to handle security screening and baggage handling for airport passengers who are using a people mover system at an airport.

In an existing operational airport environment, there are significant challenges to consider when integrating this new transit option with current systems. These include design and coordination of right-of-ways with passenger facilities and traffic congestion in existing facilities. Maintaining reliable service during construction phases involves not only a requirement to address alternatives, but also the development of a contingency plan for any impacts to conveyance and processing of passengers.

HNTB, which has designed and developed many airport APMs around the country, offers one key lesson it learned along the way. People movers are designed to increase the speed and frequency of conveying passengers on the system, making the entire travel experience more efficient and pleasant. They should relieve travel anxiety, not add stress to the passenger's journey.

GROWTH OF APMS

Around the world by last count, there are 46 airports with automated people mover sys-

tems already in operation. In North America alone, 23 airport systems are in use and another four have been proposed: Albuquerque International Sunport; Charlotte-Douglas International Airport; Denver International Airport; and Los Angeles International Airport.

HNTB's work on airport automated people movers includes the Tampa International Airport Master Plan, with recommendation for a \$4 billion modernization and expansion including new consolidated rental car facility linked to the main terminal via an automated people mover; Hartsfield-Jackson Atlanta International Airport's south concourse development, which includes plans for new mid-field concourses served by a second secure APM system in order to serve 153 million annual passengers; and the Minneapolis St. Paul Airport Hiawatha Light Rail Transit Tunnel and Stations, a \$112 million project including design and program management services for twin light rail transit tunnels and two new stations—one at-grade and one 65 feet underground.

THE FUTURE

Given that global airline passengers are expected to rise 31 percent by 2017, automated people mover systems will need to continue moving forward in order to meet imminent needs. These systems will evolve with the development of more airport "cities" that are turning into destinations for doing business as part of the global marketplace and world economies. They will need to efficiently and effectively transport passengers not only to and from an airport, but within the campus where business takes place.

Historic trends for airport people movers include driverless vehicles that operate on a dedicated track without rails. Personal rapid transit, also called podcar, is a public transport mode featuring small automated driverless vehicles operating on a dedicated track without rails. PRT is a type of automated guideway transit (AGT), a class of system which also includes larger vehicles all the way to small subway systems. Future possibilities include automated people mover systems that can integrate with rail and provide more efficient green technologies.

At London Heathrow, the personal rapid transit system has a fleet of 21 pods, each capable

of carrying four passengers and their luggage at speeds up to 25 mph on the dedicated guideway. The pods are battery-powered, driverless vehicles offering a convenient and efficient way to travel to and from the terminal.

**Automated people movers
are transit systems with
fully automated, driverless
operations ... capable
of carrying 20 to 100
passengers who are mostly
standing.**

Automated Transit Networks (ATN)—in which fully automated vehicles on exclusive, grade-separated guideways provide on-demand, primarily non-stop, origin-to-destination service over an area network—has been around since the 1950s. However, at this time only a few systems are in current operation around the world. This advanced technology may eventually become a viable solution for current and future transit problems in highly populated urban centers.

With additional automated people movers opening around the world, it is clear that they continue to be a highly effective passenger conveyance mode for airports. Looking ahead to the future, airport planners will continue to demand improved mobility, enhanced accessibility and technological advances for automated people movers to be able to meet the needs of tomorrow's airports and their passengers.



ABOUT THE AUTHOR

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Aarons is West Division aviation director and associate vice president for HNTB. He has more than 25 years of experience in planning, development, design, program and project management, and construction for airports. Contact him at paarons@hntb.com.

40 **airport** business UNDER 40



Is anyone in your organization worthy of this honor?

Airport Business magazine's November issue will recognize 40 individuals from the Airport and FBO industry for their contributions to the industry and a "job well done." It is not a ranking, but rather a listing of individuals who have shown initiative, a capacity, or have made an impact to the aviation industry.

Let the industry acknowledge you or your colleagues for dedication to the aviation industry. If you or your colleagues will be 39 years old or younger on October 1, 2015, you are eligible to be nominated for *Airport Business* magazine's Top 40 Under 40.

Criteria for selection include such things as job commitment, industry involvement and contribution, achievement in his or her position and innovation in his or her field. While no candidate may possess all criteria, we are looking to reward those who deserve recognition for their efforts. Upon selection, the winners will be contacted directly by *Airport Business*.

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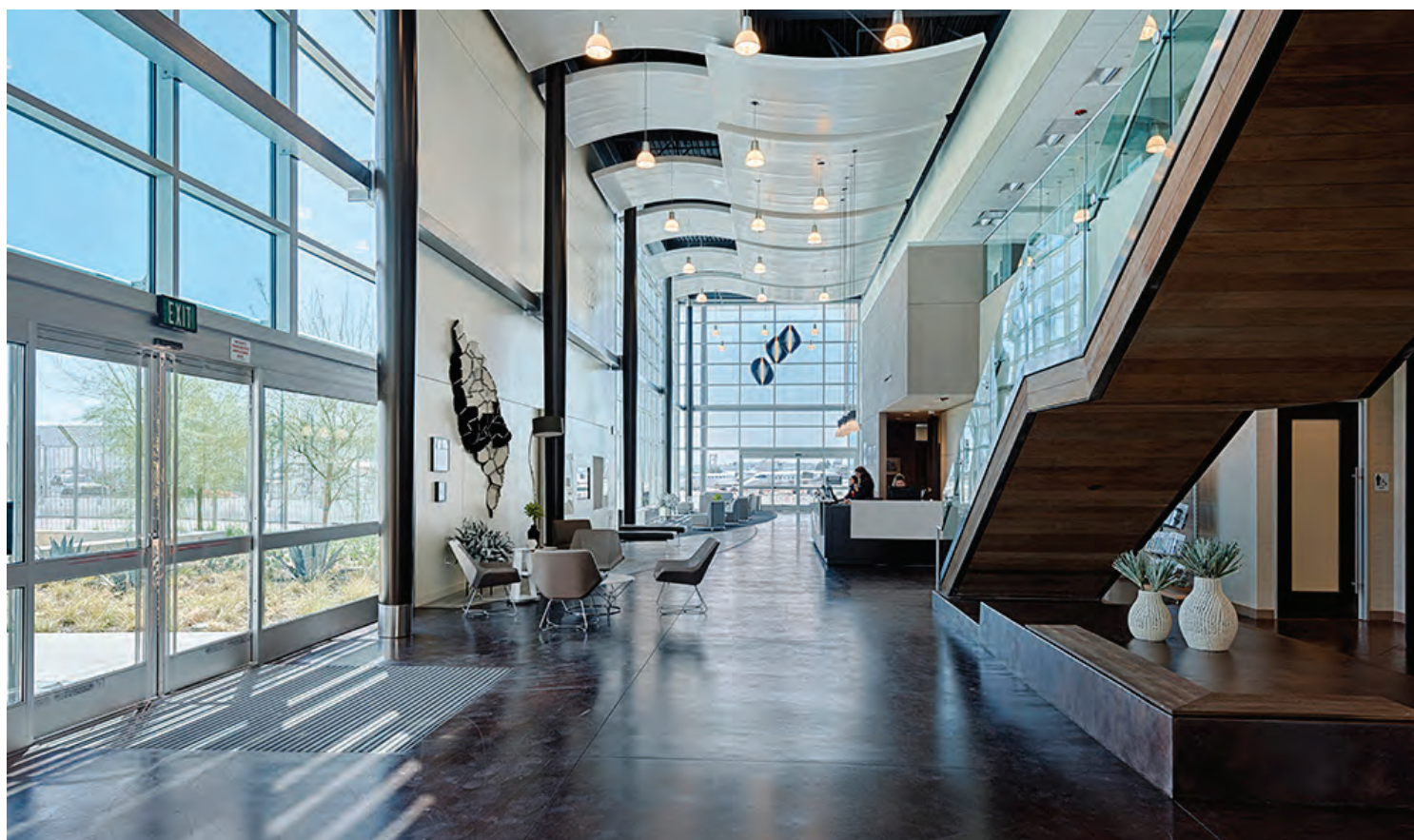
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The Push for a LEED-Platinum Rating

Landmark Aviation's new FBO facility at San Diego International Airport reaches for LEED-Platinum certification—the first FBO in the world to do so.

When Landmark Aviation began planning for its new FBO facility at San Diego International Airport (SAN), it looked to the main airport's modernization project for guidance

"Landmark wanted to work in conjunction with the airport's commitment to the Terminal 2 Green Build Program and apply it to the development of our 13-acre new general aviation FBO campus," says Louis Bradberry, Landmark Aviation's construction manager. The Green Build initiative requires all new airport projects to attain at least a LEED-Silver rating, but Landmark Aviation set its sights even higher—on a Platinum rating.





Landmark Aviation's new \$39 million FBO facility at San Diego mirrors the San Diego Airport Authority's commitment to building sustainable or green buildings. Landmark has a 37-year lease with the authority for the FBO, located on the north side of the single-runway international airport that handles more than 500 flights a day.

The airport handles more than 500 flights a day, and its Green Build construction project brought a set of long-awaited upgrades for the traveling public. The \$1 billion Green Build project helps meet the airport's current and future demand for travel and improves customer service. Its 10 new gates reduce terminal congestion and enhanced curbside check-in speeds passengers through check in. The facility was awarded Leadership in Energy and Environmental Design (LEED) Platinum certification for the Green Build terminal expansion from the U.S. Green Building Council (USGBC), making it the first LEED Platinum-certified commercial airport terminal in the world. Landmark Aviation's new facility is following suit; its Platinum certification is currently under LEED review by the USGBC.

Landmark Aviation operates 69 FBO facilities throughout North America and Europe. "As a company, Landmark Aviation is dedicated to making environmentally friendly business decisions. As part of that responsibility, we build to LEED specifications whenever possible, whether the project will be certified or not. In San Diego, we made a commitment to the airport to be certified LEED Platinum. LEED Platinum had never been achieved on the scale of a general aviation FBO campus, so we are proud to say that we are slated to achieve this milestone and are submitting 85 of the required 80 points for LEED Platinum," Bradberry says.

ENVIRONMENTALLY FRIENDLY FACILITY

The \$39 million facility is located at 3300 Terminal Link Rd., near the intersection of Sassafras Street and Pacific Highway; Landmark signed a 37-year lease with the San Diego County Regional Airport Authority. The FBO campus features a 19,000 square-foot terminal, a 250,000 square-foot ramp and five hangars on 12.4 acres. Its amenities include office space, a snooze room, VIP lounge, fitness center, viewing deck, gourmet café and an executive conference room.

Several companies were involved in the project including Turner Construction Company, Rivers and Christian, Tammy Edmonds Design, KPFF Consulting Engineers, Kleinfelder, NV5 Nolte Associates, Spurlock Poirier Landscape Architects, and TMAD Taylor & Gaines. Many of these companies are based in the San Diego area.

According to Turner Construction, the project's general contractor, notable LEED features include bio-swales and permeable paved surfaces that manage water runoff and remove silt and pollution from surface runoff. The facility was constructed with low-volatile

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WHAT DOES IT TAKE FOR A FACILITY TO BECOME LEED-CERTIFIED?

LEED for Building Design and Construction (LEED BD+C) certification provides a framework for building a holistically green or sustainable building. The certification helps owners strive for a healthier, resource-efficient, cost-effective building that also enhances the lives and experiences of everyone who walks through its doors, report LEED experts at the USGBC.

The USGBC has developed specific LEED rating systems with credit categories based on the type of building. Generally, FBOs fall under LEED BD+C.

Within each of the credit categories, there are specific prerequisites that projects must satisfy and a variety of credits that projects can pursue to earn points. The number of points the project earns determines its level of LEED certification.

The categories for LEED BD+C are:

- ▶ **Integrative Process**, which does not earn any points but promotes reaching across disciplines to incorporate diverse team members during the pre-design period.
- ▶ **Location and Transportation** that rewards points to projects located in relatively dense or diverse areas with access to a variety of transportation options. Points can also be earned if the site has certain development constraints.
- ▶ **Materials and Resources** points can be earned by using sustainable building materials and reducing construction waste. Indoor environmental quality credits promote better indoor air quality and access to daylight and views.
- ▶ **Water Efficiency** credits are scored with smarter use of water, inside and out and by reducing potable water consumption.
- ▶ **Energy and Atmosphere** credits those buildings that have better building energy performance through use of innovative energy conservation or production strategies.
- ▶ **Sustainable Sites** points are awarded for strategies that minimize the impact on ecosystems and water resources.
- ▶ **Indoor Environmental Quality** points are awarded for efforts to achieve better indoor air quality and providing access to daylight and views.
- ▶ **Innovation** credits can be awarded to recognize sustainable building expertise and strategies not covered under other LEED credit categories.
- ▶ **Regional Priority** credits can be earned when the building addresses regional environmental priorities.

STEPS TO CERTIFICATION

If you're considering the LEED certification process, the USGBC shares the certification steps:

Step One: Register your project with the USGBC. This entails completing

key forms and submitting payment. Before you begin, make sure the project meets all of the LEED minimum program requirements, such as the project must be in a permanent location on existing land, use reasonable LEED boundaries and complies with project size requirements. Once the registration form and payment are submitted, the project will be accessible at LEED Online, which features a variety of tools and resources necessary to apply for LEED certification.

Step Two: Prepare your application. Once you've identified the specific LEED credits you wish to pursue, collect information and prepare the documentation that must be submitted with the application for certification. Completed materials can be uploaded using LEED Online. USGBC LEED experts recommend applicants double-check each credit's details for accuracy and consistently. The LEED Certification Scorecard tracks points earned toward certification.

Step Three: LEED application review by USGBC professionals. Depending on your type of project, it will either be subjected to standard review or split into two reviews, one for design credits and another for construction credits.

The Preliminary Design Review can be followed by an optional Final Design Review where clarifications can be made based on questions raised during the Preliminary Design Review.

The Preliminary Construction Review goes through all documentation for construction phase credits, and may include Design phase credits not submitted in a previous phase. This can also be followed by an optional Final Construction Review to clarify any questions brought up in the Preliminary Construction Review.

Step Four: Certification!

The number of points a project earns determines the level of LEED certification that the project will receive. Typically projects must earn the following number of points to achieve higher levels of certification:

- ▶ Level Points Required (110 total points possible)
- ▶ Certified 40-49
- ▶ Silver 50-59
- ▶ Gold 60-79
- ▶ Platinum 80+

CERTIFICATION COSTS

A flat registration fee of \$1,200 (non-members) or \$900 (USGBC members) is paid at the time of registration.

The certification fee is based on the size of the project and the rating system under which the project was registered. Certification fees start at \$2,750 for non-members and \$2,250 for USGBC members. Certification fees are paid at the time a project team submits their application for review. The USGBC has developed an online guide to that you can read online or download it as a PDF www.usgbc.org/cert-guide.

organic compound paints, sealants and building materials; urinals are all water use models, toilets have water-saving dual-flush systems and faucets are high-efficiency models with sensors. Initial records indicate 49 percent water savings.

The building's design takes maximum advantage of natural light and 100 percent of the building's electricity can be produced by solar panels mounted on the roof. Lighting throughout the facility uses low-energy consuming LED lamps and other building materials are made with sustainable products.

FBO personnel and visitors can monitor energy use and solar electricity production on a kiosk located in the main reception area. The touchscreen allows users to learn more about the building's energy-saving features.

"This project took a lot of collective effort and dedication over the last two years, and we are very impressed with the finished product," says Dan Bucaro, Landmark Aviation president and CEO. "We are excited to offer our customers a more spacious and modern facility, boasting many amenities. We couldn't have done this without the support of the San Diego County Regional Airport Authority."

Sustainability and environmental sensitivity were hallmarks of the airport's Green Build project, which was emulated in the planning, design and construction of the Landmark FBO facility. For instance, construction material waste from the project, such as concrete, was recycled and reused on site. The design also decreased water usage, reduced energy consumption and uses alternative energy sources.

"This was new construction, so we didn't have to modify existing elements and we could design the campus with smart systems from the ground up," says Bradberry.

While many FBOs considering new construction shy away from LEED certification, Bradberry says the additional cost wasn't a huge factor. "There isn't too much more of a premium cost necessarily involved in achieving LEED Platinum status. However, what drives the costs is that certain technologies such as LED lighting or certain mechanical systems have not seen the types of cost savings as conventional systems. This is largely because they don't have the same demand, so the per-unit cost is still higher," Bradberry says.

The USGBC cites there are significant savings to owners and the environment for facilities built



The building site incorporates bio-swales and permeable concrete to control and filter water runoff.

with sustainability in mind. It reports that LEED projects are responsible for diverting more than 80 million tons of waste from landfills. The General Services Administration reports that when it compares LEED Gold buildings to conventional buildings, the LEED-Gold facilities consume 25 percent less energy and generate 34 percent less greenhouse gas emissions.

"The project's use of renewable energy was the main feature that makes it a LEED Platinum performing project," says Bradberry. "The team was able to leverage the large roof areas of the hangars for photo-voltaic (PV) arrays, which let the project achieve almost all of the energy efficiency credits. The PV system enabled us to achieve almost 30 points that would have been more difficult and costly to achieve otherwise. In fact, I don't think it is really possible to achieve a LEED Platinum rating without some form of renewable energy component in the mix. That's really what sets Platinum apart from the other rating levels."



ABOUT THE AUTHOR

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SITA Baggage Report

Out of every 1,000 passengers, only 7.3 bags were mishandled last year. That's despite a significant increase in passenger enplanements of 33.3 percent from 2007, with 3.3 billion of us getting on a plane during 2014.

Lost luggage is a nuisance for passengers and expensive to airlines.

But new innovations in technology and processes are making mishandled luggage less likely, and airlines' books look better as a result.

Over the last seven years, airlines and airports have lost 61.3 percent fewer bags and saved \$18 billion as a result, says a new Baggage Report from aviation information technology firm, SITA.

Out of every 1,000 passengers, only 7.3 bags were mishandled last year. That's despite a significant increase in passenger enplanements of 33.3 percent from 2007, with 3.3 billion of us getting on a plane during 2014.

SITA's CEO Francesco Violante attributes improvements in baggage handling technology and new baggage processing systems for these improvements. "The investment the industry has made in baggage systems automation and processes have made a huge difference to the reliability and speed of baggage delivery, in particular for bags transferring from one flight to another," he says. "For instance, SITA's community baggage systems processes more than 2.5 billion messages annually, helping ensure that bag and passenger travel on the same flight." But Violante also cautions the industry that adoption of more automation and better baggage tracking are essential to maintain this good performance. "Given the success already in bringing down the mishandling

rate, driving further incremental improvements is going to be that much harder," he says. "We have already seen the additional pressure in 2014 of record load factors and a 5.4 percent uplift in the number of passengers nudge the mishandling rate up to 7.30 bags per thousand passengers, from 6.96 the previous year."

Projected increases in passenger numbers, he indicates, will put pressure on the industry to invest in technology including baggage systems automation. "The industry cannot afford to become complacent," says Violante. "With IATA forecasting continued passenger growth of around 7 percent in 2015, all industry partners will need to continue to invest, collaborate and focus on baggage management."

Many of the improvements depend on passengers doing their part. Services like at-home baggage tag printing, self-check luggage bins at airports, and luggage tracking apps combine to help airlines and airports handle luggage more efficiently while making passengers feel more empowered in the process.

"Baggage processing and management ranked among airports' top investment

priorities, with investments in self-service processes, such as kiosk and bag-drop technology leading the way," says Violante. "Over the next three years, 59 percent of airports said they would invest in major self-service programs, as passengers increasingly express a desire to have more control over their journeys, including their baggage."

- **69 percent** of airlines said they would provide passengers with real-time updates on the location of their bags by 2017.
- **66 percent** are looking to provide these updates via smartphone apps by 2017.
- **18 percent** of airlines already offer passengers the ability to report missing bags via self-service kiosks and 10 percent via smartphone apps.
- By 2017, nearly **two-thirds** of airlines expect to offer these services.

Advancements in baggage management technologies will not only improve our passenger experience they could lead to new aircraft designs, suggests IATA's Head of Airport Operations Management, Andrew Price.

"Any reduction in cabin baggage volumes

would make boarding and deplaning faster, the cabin environment safer and perhaps more comfortable. Eventually, you might even see aircraft designs that take advantage of reduced cabin bag needs—imagine overhead windows rather than luggage bins," he says.

Referencing published figures from IATA, SITA reports that the cost of baggage mishandling per passenger in 2014 was \$0.73, which represents 0.34 percent of the aviation industry's per passenger operating costs—that's the costs of administering the business day-to-day. Those passenger operating costs come to an industry average of \$216 per passenger, which is food for thought next time we're fare-shopping.

While the particular costs of administering the business will vary from airline to airline, and the costs of carriage vary from flight to flight, a \$216 basis to recoup might explain why all those too-good-to-be-true fares wind up costing us more once all the "extras" are tacked-on, including those dreaded baggage-handling fees.



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million**

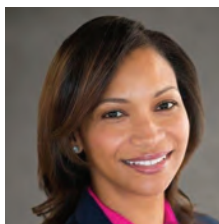
The amount of
money Los Angeles
International
Airport will save by
reducing energy use
with the addition
of \$423.8-million
replacement central
utility plant.

1 MEGAWATT

Amount of power the proposed 5-acre solar energy farm at Mitchell International Airport would produce. This is enough electricity to power the electrical demand of 150 homes in Wisconsin.



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"The airlines have a responsibility to do their part on climate change just like every other industry, and the EPA needs to hold them to that."
DEBORAH LAPIDUS, DIRECTOR, FLYING CLEAN CAMPAIGN

13

The number of airports in the country that have one or more runways that are vulnerable to moderate or high storm surges.

\$9,000,000

The amount Boston Logan International Airport plans to spend on flood doors and barriers, coastal management and portable pumps to protect the airport from storm surges and flooding.

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