PHOENIX AIR RISES
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# airport business

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Philadelphia International Airport

## Focused on the Future of Terminal F

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December 2014/January 2015

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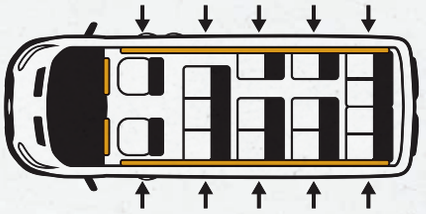

***The all-new 15-passenger Transit Wagon is equipped with the industry's first 5-row side airbags.***† Standard. And with multiple safety features designed to help protect passengers, safety is clearly the top priority in Transit.

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The 2015 Transit Wagon with the high roof has a **CENTER AISLE THAT'S 6'5" HIGH.**††

††Medium roof shown.

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### FEATURES



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airport business

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# INSIDETHEFENCE

**Ronnie L. Garrett**
**Editor**

# Different isn't always better

*Privatization can pose a security risk*

**Passengers traveling out of Bozeman Yellowstone International Airport will now pass through security run by a company subcontracted by the Transportation Security Administration. TSA has a program called the Screening Partnership Program that allows them to use private screening contractors for airport security.**

Now no one is going to argue that the government-run security program is perfect. I'm sure most would agree there is much room for improvement where the TSA is concerned.

But there is a concern when it comes to privatizing these types of services within an airport. Checks and balances must be in place to ensure these workers follow specific rules and ethics and fully understand the seriousness of the job at hand.

Consider an event in Chicago a few months ago that didn't take place at any of the city's airports, but which still ended up canceling thousands of flights and disrupting air traffic throughout the United States. Disgruntled employee Brian Howard faces up to 20 years behind bars if convicted of one count of felony destruction of aircraft facilities after he allegedly set fire to a Chicago-area FAA air traffic network site.

The breach that enabled him to carry out his plan speaks to a continuing trend in the aviation industry that most security experts say is ripe for abuse: an over-reliance on third-party contractors whose workers are often paid low wages and are not screened properly but who have easy access to some of the most vulnerable areas of the nation's biggest airports.

Reports on this topic point out it's not the low paycheck that puts security at risk, it is the fact that such workers may lack the same identity to their place of employment that a full-time worker would have. It is this fact that has security experts most concerned.

The aviation industry has outsourced a number of key jobs including baggage handlers, refuelers, cabin cleaners, gate agents and even security screeners. Typically, with outsourcing a job comes a paycheck with a fewer dollars.

Richard Bloom, director of terrorism, intelligence, and security studies at Embry Riddle Aeronautical University in Prescott, Ariz., says contracted employees can be less accountable than full-time employees, and that screening is often "perfunctory," only involving criminal background checks. "When it comes to in-house sabotage, much more often than not, you're not going to catch any of that if you only look at bank accounts and arrests," he told a newspaper after the FAA fire.

He advocates frequent rescreening to detect psychological issues that could be flagged early "Often people who engage in [sabotage] are fine when they are hired," he added, "but over a period of time, they change. There are objectively valid screening procedures that can monitor people on an ongoing basis and if they change for the worse, fire them or talk to them or deter them."

As the move to privatize services within airports forges ahead, it's critical that we ask ourselves how we will screen these employees and monitor their activities. Different isn't always better.

## CHRISTMAS SHOPPING AT PIT

The downside of airport retail outlets is you can only visit them while you're traveling through the airport. But that changed at Pittsburgh International Airport recently—at least for one day. The Allegheny County Airport Authority, in cooperation with AIRMALL Pittsburgh, allowed the public to access its Airside Terminal for Shopping and Dining at the Airport on December 6. Interested shoppers arrived between Noon and 6 p.m. and presented a government-issued photo ID such as a drivers' license or passport to enter the shopping area. The Holiday Shopping at the Airport is part of the ongoing celebration of AIRMALL's $10 million renovation of the Center Core and other projects designed to enhance travelers' experience in the airport.

# INDUSTRYNEWS

## Profiling Rules Exempt Agents At Airports, Border

Federal agents who guard the border and screen passengers at U.S. airports will be exempt from new racial profiling guidelines that must be observed by the FBI and other law enforcement agencies. Those guidelines, announced by the Obama administration, would restrict the ability of numerous federal agencies to take into account factors including religion and national origin during investigations, officials say. The new guidelines apply to federal law enforcement agents but aren't binding on local police departments whose officers are more likely to have day-to-day contact with community members. Their formulation also long predates high-profile cases, such as the police shooting of an unarmed black man in August in Ferguson, Mo., that have placed police treatment of minorities in the spotlight. Federal law enforcement agents are banned from routine racial profiling under a 2003 Bush administration policy that created a significant exemption for national security investigations. This policy goes beyond the decade-old one, expanding the definition of racial profiling to ban the practice on the basis of characteristics including religion, national origin and sexual orientation.

**AIR BP ...**
Ramps up its presence at Glasgow Airport with an integrated relationship with Gama Aviation. The company began providing Gama Aviation clients and all Air BP Sterling Card holders with a quick, efficient fuel supply on December 1.

**ALASKA AIRLINES ...**
Expands its partnership with SkyWest Airlines by adding three new destinations, including Milwaukee, Oklahoma City and St. Louis., from Alaska's Pacific Northwest hub in Seattle.

**AMERICAN AIRLINES GROUP INC ...**
Announces plans to move at least 50 jets from its Envoy Air unit to other regional carriers, saying that it can't keep enough pilots to fly the airplanes.

**AMERICAN EXPRESS ...**
Expands its presence in major domestic airports, announcing it will open The Centurion Studio at Seattle-Tacoma International Airport in 2015.

**AUSTIN-BERGSTROM INTERNATIONAL AIRPORT ...**
Reports the extension of Taxiway A (north and south) is 35 percent complete by Chasco Constructors, with the work completed so far including excavation and placement of the sub-base and base layers for the new taxiway pavement.

**BALTIMORE/WASHINGTON INTERNATIONAL THURGOOD MARSHALL AIRPORT ...**
Reopens its revamped runway 15R-33 and announces that the final work on the airport's $350 million airfield program will be completed in 2015. Improvements include runway pavement reconstruction, grading, airfield lighting, taxiway upgrades, and enhancements to navigational aids.

**BOEING CO ...**
Announces plans to lay off 561 employees in Southern California this month and early next year, according to documents the company filed in Sacramento. The layoffs include 253 people at its Long Beach facilities, 154 in Huntington Beach and another 154 employees in El Segundo.

**CITY OF CHICAGO ...**
Lawmakers set up a noise pollution telephone hotline and an online complaint form that are separate from the same type of systems operated by the city of Chicago. Residents can use these systems to launch noise complaints about jet noise coming from O'Hare International. Data collected from these systems will be forwarded to the FAA, the Chicago Department of Aviation and the O'Hare Noise Compatibility Commission.

**DELTA AIR LINES ...**
Announces plans for further growth in Seattle, which will keep up the pressure on Alaska Airlines into 2015.

**DENVER INTERNATIONAL AIRPORT ...**
Begins allowing the ride-sharing service UberX to operate at the main terminal. Lyft reached a similar agreement with the airport, allowing drivers to pick up and drop off passengers at the main terminal.

**ETIHAD AIRWAYS ...**
Launches service to Dallas/Fort Worth International Airport, making it the third airline from the Middle East to begin flying to North Texas in less than three years.

**FAA ...**
Announces the successful implementation of the North Texas Metroplex NextGen project, a newly launched air-traffic system that will deliver more on-time flights for passengers while reducing pollution by thousands of metric tons each year.

**GENERAL MITCHELL INTERNATIONAL AIRPORT ...**
Announces Southwest Airlines will launch nonstop service from Milwaukee to San Diego in 2015.


McCarron International Airport

Credit: LG Electronics

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# INDUSTRYNEWS

## Schowalter Flying Services Ends Nearly 70-Year Flight

Showalter Flying Services, which has operated at Orlando Executive Airport for nearly 70 years, is being bought by a Plano, Texas, company. Owner Bob Showalter would not disclose the purchase price but said the deal with Atlantic Aviation should close early in January. Showalter Flying Services, which provides fuel, storage and concierge services to corporate jets and smaller plane owners, started at Orlando Executive in 1945.

"We've been thinking about this [selling] for a long time," Showalter said, "and we've been working on it for several years. Showalter, whose late father, Walter, founded the company, said it was increasingly difficult for his company to operate in an environment in which outfits such as his were competing with larger operations such as Atlantic Aviation, which serves almost 70 airports. Larger airport companies, Showalter said, operate more efficiently because they buy in bulk and can consolidate management functions.

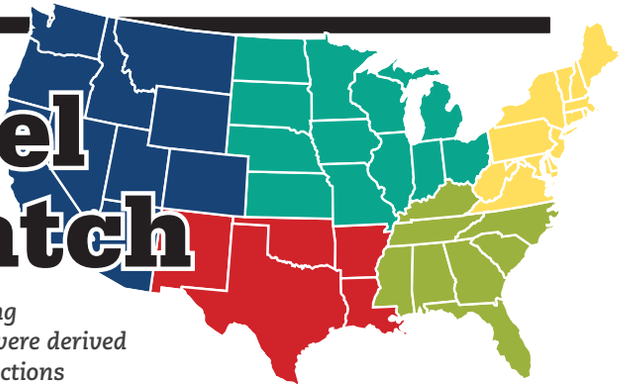
Showalter, which has a long-term lease for Orlando Executive that runs through 2039, cares for 140 aircraft and employs 28 people. Many of Showalter's employees, he said, are likely to work for Atlantic Aviation.

**GREENVILLE-SPARTANBURG INTERNATIONAL AIRPORT ...**
Moves into the second phase of project WINGSP AN, its $125 million terminal improvement program. Construction crews closed off the core of the 52-year-old terminal and started on renovations that will result in a new ticketing lobby, consolidated security checkpoints, an airside garden, and a grand hall with fresh retail, food and beverage options.

**JETBLUE AIRWAYS ...**
Named Best Low Cost Airline—The Americas for 2015 for the second consecutive year by AirlineRatings.com.

**MILLION AIR ...**
Honors Million Air Indianapolis with its 2014 FBO of the Year award.

## Fuel Watch



*The following fuel prices were derived from transactions completed with the AVCARD credit card during November. 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 | North Central |
|---|---|
| Jet-A: $4.56 | Jet-A: $4.63 |
| Avgas: $5.79 | Avgas: $5.85 |
| **South Central** | **Northeast** |
| Jet-A: $3.16 | Jet-A: $4.56 |
| Avgas: $5.51 | Avgas: $5.96 |
| **Southeast** | |
| Jet-A: $4.37 | |
| Avgas: $5.66 | |

**MINETA SAN JOSE INTERNATIONAL AIRPORT ...**
Reports a man was arrested on charges of trespassing and stealing a worker's vehicle. This is the third security breach at the airport since April, prompting Congressman Eric Swalwell to call for tighter perimeter security.

**OAKLAND INTERNATIONAL AIRPORT ...**
Used a $2.7 million V oluntary Airport Low Emission (V ALE) grant from the FAA to install new pre-conditioned air units at eight airline gates in Terminal 1.

**PETA ...**
Targets Air France, and Chicago's O'Hare International Airport, in an attempt to stop the French flag carrier from allegedly transporting thousands of monkeys from foreign destinations to Chicago O'Hare.

**PHILLIPS 66 ...**
Welcomes Channel Islands Aviation to its FBO network.

**SAN FRANCISCO INTERNATIONAL AIRPORT'S ...**
Charity Golf Tournament Committee donated $60,000 to Little Children's Aid, Star Community Home, and Operation Freedom Paws. The funds were raised during a charity golf tournament held on October 6, 2014.

**SHELL AVIATION ...**
Receives a 20-year Strategic Partner award from the International Air Transport Association (IATA) for its contribution to the industry and strong cooperation with IATA member airlines since 1994.

**YEAGER AIRPORT ...**
Will spend $18 million to install three solar panels at the airport, which will save the airport an estimated $500,000 a year on electricity. The FAA will fund 90 percent of the project. Appalachian Electric Power will purchase the electricity the panels collect.

The 2015 Sprinter Passenger Van

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*Excludes all options, taxes, title, registration, transportation charge and dealer prep fee. Options shown. Not all options are available in the U.S. 1. Crosswind Assist engages automatically when sensing dangerous wind gusts at highway speeds exceeding 50 mph. Performance is limited by wind severity and available traction, which snow, ice and other conditions can affect. Always drive carefully, consistent with conditions. 2. Rear view camera does not audibly notify driver of nearby objects and is not a substitute for actively checking around the vehicle for any obstacles or people. Images displayed may be limited by camera field of view, weather, lighting conditions and the presence of dirt, ice or snow on the camera. 3. Driver is responsible for monitoring fluid levels and tire pressure between service visits. See Maintenance Booklet for details.

Options shown. Not all options are available in the U.S.

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# INDUSTRYNEWS

## BOEING COMPLETES FIRST GREEN DIESEL FLIGHT

Boeing completed the world's first flight using "green diesel," a sustainable biofuel that is widely available and used in ground transportation. The company powered its ecoDemonstrator 787 flight test airplane with a blend of 15 percent green diesel and 85 percent petroleum jet fuel in the left engine.

Green diesel offers a tremendous opportunity to make sustainable aviation biofuel more available and more affordable for our customers," says Julie Felgar, managing director of Environmental Strategy and Integration, Boeing Commercial Airplanes. "We will provide data from several ecoDemonstrator flights to support efforts to approve this fuel for commercial aviation and help meet our industry's environmental goals."

Sustainable green diesel is made from vegetable oils, waste cooking oil and waste animal fats. Boeing previously found that this fuel is chemically similar to HEFA (hydro-processed esters and fatty acids) aviation biofuel approved in 2011. Green diesel is chemically distinct and a different fuel product than "biodiesel," which also is used in ground transportation.

With production capacity of 800 million gallons in the United States, Europe and Asia, green diesel could rapidly supply as much as 1 percent of global jet fuel demand. With a wholesale cost of about $3 per gallon, inclusive of U.S. government incentives, green diesel approaches price parity with petroleum jet fuel.

"The airplane performed as designed with the green diesel blend, just as it does with conventional jet fuel," says Capt. Mike Carriker , chief pilot, Product Development and 777X, Boeing Test and Evaluation. "This is exactly what we want to see in flight tests with a new type of fuel."

Green diesel is among more than 25 new technologies being tested by Boeing's ecoDemonstrator Program aboard 787 Dreamliner ZA004. The program accelerates the testing, refinement, and use of new technologies and methods that can improve aviation's environmental performance.

On a life-cycle basis, sustainably produced green diesel reduces carbon emissions by 50 to 90 percent compared to fossil fuel, according to Finland-based Neste Oil, which supplied green diesel for the ecoDemonstrator 787. The flight test was coordinated with the U.S. Federal Aviation Administration, Rolls-Royce and Pratt & Whitney, and EPIC Aviation blended the fuel.

EPIC Aviation supports Boeing's continuing efforts to make green diesel an alternative to petroleum-based jet fuel, providing the company


with the technical and logistical support to make green diesel available for use in its ecoDemonstrator Program. EPIC provided the transportation of NESTE green diesel from Finland to Paine Field in Everett, Wash. Utilizing the fuel storage facilities at Castle & Cooke's FBO, the renewable green diesel was blended with locally produced petroleum jet fuel to 15 percent green diesel by volume. After blending the jet fuel with the green diesel it was rigorously tested at an ASTM-approved laboratory. The results met the required specifications for ASTM 1655 jet fuel and were cleared by Boeing for the test flights. The fuel delivered to Boeing's fuel facility at Boeing Field was uplifted into the ecoDemonstrator 787 airplane to support test flights. EPIC expects these test flights will clearly demonstrate the advantages of using a green diesel blend to improve aviation's environmental sustainability.

# PRODUCTSPOTLIGHT


### PRO SERIES OUTDOOR TELEVISIONS
**SUNBRITE**

SunBriteTV announces new models in its line of direct sunlight readable Pro Series outdoor TVs. Designed for permanent outdoor installation, SunBriteTVs feature high-grade weatherproofing technology that protects internal components from rain, snow, dust, insects, humidity and salt air. Intended for direct sunlight installations in commercial settings, SunBriteTV's rugged Pro Series models heave ultra-bright high-NIT panels with Enhanced Solar Tolerance. This technology prevents isotropic blackout, a common problem with indoor TVs in bright sunlight that causes temporary on-screen black fading. The TVs are equipped with anti-glare tempered glass protecting the LED panel from impact damage and are designed to operate in temperatures as low as -40 degrees Fahrenheit and as high as 122 degrees F thanks to an internal multi-fan heating and cooling system. Featuring brighter LED panels, a rust-proof powder-coated aluminum exterior and Ambient Light Sensors to automatically adjust brightness based on environmental conditions, the new Pro Series models improve upon all of the features that made predecessor models a top choice for rugged direct sunlight installations. SunBrite products have been time-tested in airports across the United States.

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For registration and more information visit:

## www.snowsymposium.org

# PRODUCTSPOTLIGHT


## AVA THE ADVANCED VIRTUAL ASSISTANT
### AIRUS MEDIA INC.

Similar to a hologram, AVA, the Advanced Virtual Assistant, is an Avatar that activates when a customer approaches or passes. San Antonio International Airport has two—both in Terminal A security lines, one each in general boarding and Pre-Check lines. The messages AVA puts out are tailored appropriately to general boarding and Pre-Check passengers. Avatar messages include information about proper identification, divesting, items to be placed in bins and prohibited items. Terminal A offers daily flights to Mexico so each avatar's messages are scripted fully in English and in Spanish and alternate when activated. Airus Media Inc. created and manufactured the Avitar, which can be customized to an airport's specific needs. "Creating a realistic avatar is truly an art that requires creativity and skills," says Patrick Bienvenu, COO of Airus Media. "Producing and manufacturing 'Eva' is a complex process involving high-end videography, digital engineering, computer programming, graphics and manufacturing." Each of San Antonio's avatars is 5 feet 6 inches tall with a life-size image of the presenter digitally projected onto a 1-inch-thick glass screen coated with a state-of-the-art film. The avatar location in each line corresponds to the spot in the checkpoint's queue where passengers begin to stand, during peak times. The device uses motion sensors to prompt Eva's 90-second scripts when a customer is within 30 feet. Only a handful of airports in the United States have introduced similar avatars, including Washington Dulles, Boston Logan and LaGuardia, Newark and Kennedy in the New York City-area. According to the Avatar manufacturer and producer, SAT is the first known installation of an avatar for use in TSA Pre-Check security screening.

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## PROKURE V
### PROKURE SOLUTIONS


ProKure V, an EPA-registered hospital disinfectant that kills some of the most notorious viruses threatening people's health today, has the power to destroy the Ebola virus on surfaces in a matter of seconds. A completely non-carcinogenic solution that contains no bleach and is formaldehyde-free, ProKure V's advanced technology makes it safe to use in contained environments. That's gaining increasing importance as airlines and airports in the United States step up efforts to protect their workers, passengers and crew from the Ebola virus. ProKure can be safely used on surfaces at the gates, around the screening areas, in the restrooms, and in any other areas within the airport that require disinfecting. ProKure also works in airline cabins. The essential chemical in ProKure is chlorine dioxide, or $ClO_2$. The specific ProKure formulation is why it works so quickly: ProKure destroys the cell wall of the Ebola pathogen from the outside in. ProKure works about 10 times faster than bleach, and without the fumes. Other than microscopic traces of salt and water vapor, it leaves behind no residue.

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## HRS BIOMETRICS BIOMETRIC IDENTIFICATION
### HUMAN RECOGNITION SYSTEMS

MTrust from Human Recognition Systems offers a flexible, transparent and affordable biometric identity management platform that can improve security, boost customer service, beef up efficiency and reduce waste in airport applications. London Gatwick Airports uses MTrust, an Airport ID Pass Application vetting and issuance solution, hosted in the Cloud. MTrust provides streamlined ID Pass management with absolute certainty of identity.

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## TENSION FABRIC BUILDINGS WITH RIGID FRAME FOR AIRCRAFT HANGARS, STORAGE
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Legacy Building Solutions offers an innovative building system that combines the advantage of rigid steel frames—clearspan widths from 60 to 320 feet—with the efficiency of tension fabric panels. Each building is designed to meet specific user requirements and is professionally installed. Available options include liners, insulation and doors. Legacy Building Solutions specializes in the innovative design, engineering and construction of fabric-covered buildings for several different industries and applications.

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## MOBILE DEVICE CHARGER
### FUELROD


FuelRod mobile-device-chargers offer enough to fully charge a smartphone or greatly extend the use of most popular tablets. Priced at $20 per system, each FuelRod initially comes with a starter kit, including connectors for both Android and Apple-based devices. Once used, the FuelRod can be recharged in any standard electrical outlet or exchanged at a FuelRod vending machine for a fresh, ready-to-use system—at no additional cost. Extending its market test that started in July at the San Diego Convention Center, FuelRod, a San Diego-based technology company, is now deploying its patented mobile-device-charger vending machines at the San Diego International Airport in Terminal 1 and Terminal 2.

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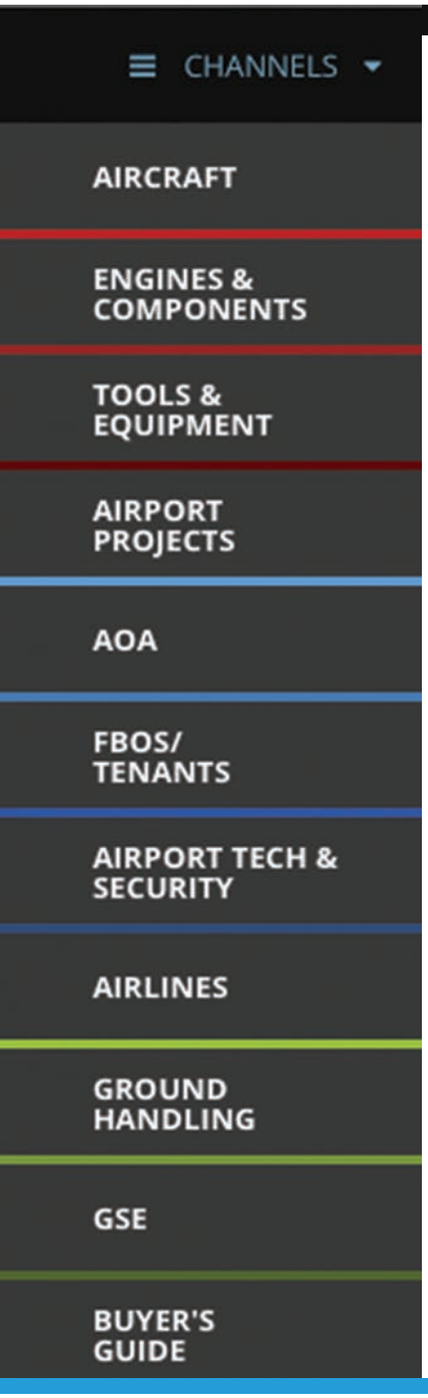
# VIEW ON ANY DEVICE!

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airport business

AMT AIRCRAFT MAINTENANCE TECHNOLOGY

GROUND SUPPORT WORLDWIDE

By Ronnie L. Garrett

# Carbon Cutting

*How Nantucket Memorial Airport aims to become the first airport to eliminate greenhouse gas emissions from airport-controlled operations*

Dieters have long known that the best way to cut carbs from one's diet is to make creative substitutions. The same philosophy holds true for airports trying to cut their consumption of carbons to reduce—or even eliminate—their output of greenhouse gas emissions.

To date, many airports have successfully slashed their greenhouse gas outputs, but none have achieved carbon neutrality in their airport-controlled operations—at least until now. Massachusetts Gov. Deval Patrick announced in June the state's intention to make Nantucket Memorial Airport the first airport in the country to completely eliminate greenhouse gas emissions from its airport-controlled operations.

*An aerial view of the island and Nantucket Memorial Airport.*


*Nantucket Memorial Airport has an estimated 100,000 enplanements annually.*

Once all elements of the project are completed, Massachusetts's second busiest airport will be known as a net-zero airport, where the amount of energy used by the facility on an annual basis is roughly equal to the amount of renewable energy created onsite.

"Nantucket Memorial Airport is always looking ahead. They are constantly looking at ways to decrease emissions at the airport, reduce their energy consumption load, and improve the environment," says Doreen Hamilton, energy account executive for Honeywell Building Solutions, one of the key players in the project spearheaded by the Massachusetts Department of Transportation (MassDOT) Aeronautics Division and Volpe National Transportations Systems Center (Volpe).

"What's even greater about this project," she says, "is Volpe would like to take the Nantucket program and use it as a blueprint to help other airports and transportation centers across the United States decrease their emissions."

## PHASE I

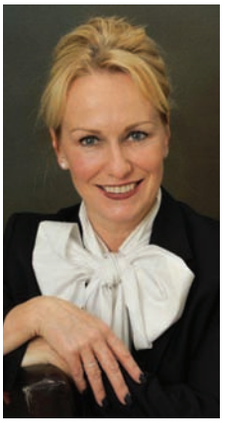
In October 2012, MassDOT's Aeronautics Division and Volpe sought solicitations from state airports interested participating in a carbon neutral airport program. They selected the seaside airport on the island of Nantucket, which has an estimated 100,000 enplanements annually, for the project.

Choosing Nantucket for the pilot made perfect sense, according to Nantucket Airport Manager Thomas Rafter. "Nantucket has a storied tradition as a community of seafarers, and its whaling fleet was once at the heart of the world's energy and transportation economies," he says. "The concept of sustainable transportation is something that makes sense on Nantucket, and is something I feel the community can really get behind and be proud to showcase."

Noah Karberg, the environmental coordinator at Nantucket Airport, agrees, saying the project allows the airport to do its part to preserve the island. "The airport as a coastal land owner depends on the island for its survival and its ability to maintain this beautiful beach des -

## HOW AIRPORTS CAN MOVE TOWARD NET-ZERO

**DOREEN** Hamilton, energy account executive for Honeywell Building Solutions, offers the following suggestions to get airports started on a path toward carbon neutrality.



- **Add lighting and lighting controls.** "Using daylight harvesting systems [that maintain a minimum recommended light level by adjusting lighting to changes in the light coming in from outside] in window bays and areas of the terminal that have large window walls, helps reduce lighting costs," she says.
- **Weatherize** doors and windows that constantly open and close.
- **Install** energy management systems designed to monitor the temperature and adjust it up or down based on occupancy in the area.

"These are the three fastest ways to help conserve energy," she says. "They can dig deeper after that."

*Honeywell Building Solutions is aiding the coastal airport with its sustainability plan.*

tination," he says. "The biggest threat to the island's rare plant and animal species, sea level rise and erosion, is rain shift associated with climate change."

Phase I moved ahead in 2013, with data collection, inventory and the development of an RFP to select an energy service company. Karberg and his team worked to develop the airport's greenhouse gas baseline, technical needs and wants, and the RFP. From this information, they selected Honeywell Building Solutions to implement the program.

At the same time, a planning Advisory Group was established to assist in decision making. The group includes the Aeronautics Division, V olpe, MassDOT' s Office of Transportation Planning; MassDOT's Energy Committee; the F AA; the Massachusetts Port Authority; general aviation airports; the Executive Office of Energy and Environmental Affairs; Massachusetts Environmental Policy Act staff; the Massachusetts Department of Energy Resources; and the U.S. Environmental Protection Agency.

Honeywell Building Solutions then conducted an energy audit, which is currently 60 percent complete. This audit defined the airport's energy baseline, cataloged all systems that consume energy and/or water, and considered where the cost of that consumption is headed. The company then gauged the environmental impact of doing x, y or z to offset these costs.

Karberg reports the energy audit revealed that the airport's largest source of electricity usage was its lighting, especially on the airfield. "The airfield has lights and signs, and flashing things, which are on from 6 a.m. to 10 p.m.," he says. "In an airport everything is bigger and costs more to operate."

Not only that, but Karberg says that as carriers come on and the number of flights increases, the airport's energy use increases in kind. And, Nantucket, being an island, is tethered to the mainland by two electrical cables, which are nearing capacity. "The island's peak load has been increasing to the point where the utility is looking at building a third cable, which would have a large impact on electricity rates," he says. "With electricity as our big driver, the airport can really gain by controlling these costs."

The audit also considered the airport's master plan, which officials are actively putting together now. Honeywell suggested including various systems in that 20-year plan that can

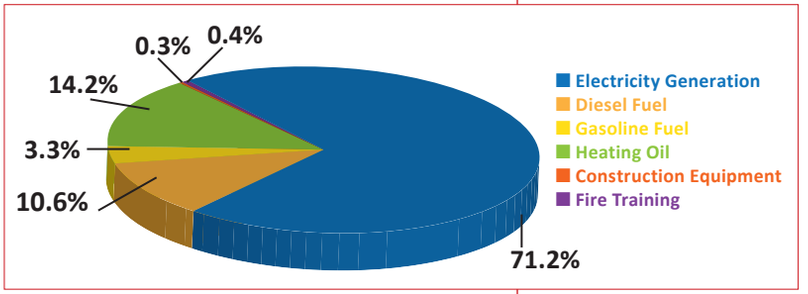
## THE BASICS OF CARBON NEUTRALITY

### WHAT IS A CARBON NEUTRAL AIRPORT?

- **A carbon neutral airport** does not produce greenhouse gas (GHG) emissions from its operations on a net basis.
- **Emissions on a "net basis"** are measured annually, thus airport-controlled operations may produce emissions on a given day, but over the course of a year the net emissions are zero.

### WHAT ARE THE MAJOR SOURCES OF GHGS AT THE AIRPORT?

- **Aircraft emissions are excluded** from the program since they are defined as an uncontrollable emission source.




### WHAT GHGS ARE REDUCED AT A CARBON NEUTRAL AIRPORT?

- The GHG emissions that are reduced are carbon dioxide, methane, nitrous oxide and hydrofluorocarbons.

### HOW CAN CARBON NEUTRALITY BE ACHIEVED?

- **Reducing** existing energy consumption.
- **Adding LED lighting** and retro commissioning major mechanical systems.
- **Installing** arrays of solar photovoltaic panels.
- **Using solar thermal technology** to reduce heating oil use for water heating.

help the airport maintain carbon neutrality throughout the life of the project.

## PHASE II

In the fall of 2013, the project entered its second phase, which involves the actual implementation of energy conservation measures and renewable energy installations designed to bring the airport to carbon neutrality. "Phase II is a mixture of what we call ECMs (energy conservation measures) and renewable energy projects designed to bring the airport to carbon neutrality over a 20-year term," says Hamilton. "Honeywell looks at every energy source in the airport and determines how we can decrease it, before we guarantee energy savings."

> "Volpe would like to take the Nantucket program and use it as a blueprint to help other airports and transportation centers across the United States decrease their emissions."
>
> DOREEN HAMILTON, ENERGY ACCOUNT EXECUTIVE, HONEYWELL

The resulting plan, when implemented together, will reduce existing energy consumption at the airport by 100 percent. Plans include installing indoor and outdoor LED lighting; retro-commissioning major mechanical systems (including energy recovery ventilators); building envelope improvements; a cross-building integrated building management program; highly efficient infrared garage heating; boiler burner replacements and other measures. Photovoltaic panels will generate enough energy to supply or offset the remaining energy consumption. Solar thermal technology is also planned to reduce heating oil use in hot water heating.

"We are looking at lighting upgrades and lighting control systems, retro-commissioning the airport's geothermal system, a solar installation, an energy management system, water and sewer conservation measures, and the building envelope and weatherization," says Hamilton.

The airport is sizing its solar energy system at 2 Megawatts, with plans to eventually grow it to a 4 MW site, to take advantage of Massachusetts's Net Metering Law, which allows customers of certain electric distribution companies to generate their own electricity to offset their electricity use.

The energy management system in the facility should also make a tremendous difference in the amount of electricity used, according to

"In an airport everything is bigger and costs more to operate."

NOAH KARBERG, ENVIRONMENTAL COORDINATOR, NANTUCKET AIRPORT

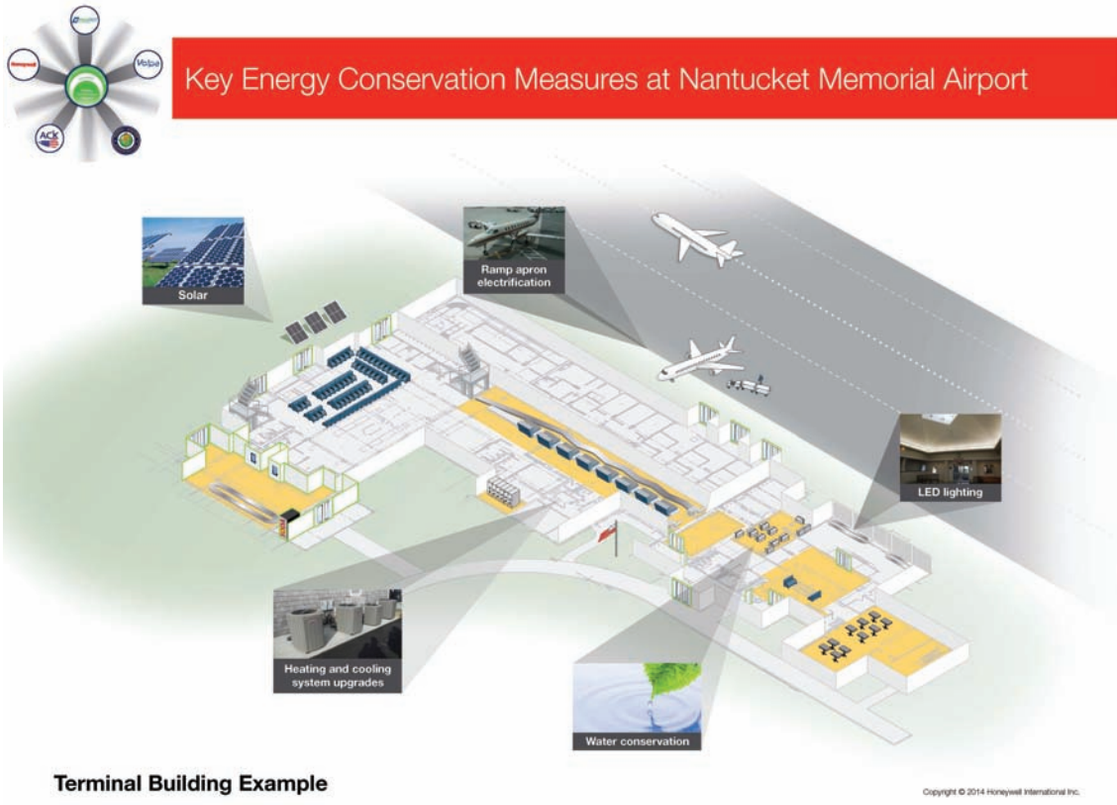
Hamilton. CO2 sensors can control the heating and lighting in specific areas of the facility based on occupancy. "So instead of having the temperature set at 70 degrees when no one is in the area, it might be set to 60 degrees," she says. "It is a better use of energy and decreases the airport's consumption of fossil fuels."

And while most of the lighting upgrades involve a standard conversion/retrofit to LED lighting, Nantucket Airport seeks to add an automated pilot-controlled lighting system where pilots can actually turn the lights on and off as they approach or leave the ramp. "Currently we have the lights on 24/7 to illuminate a ramp that's heavily used in the summer, but not so much in the winter," she says.

All in, the improvements could add up to an estimated $7 to $8.5 million, which will be financed through a tax exempt municipal lease, while tax credits from the State of Massachusetts and utility incentives will further buy down the cost of the project. Work will begin May 1, 2015, and will conclude by mid-year 2016. Honeywell guarantees savings on energy and water/sewer bills over a 20-year term to pay for the project.

The program, when fully implemented, will eliminate nearly 1,000 metric tons of carbon emissions each year at the airport (the same as the carbon sequestered after planting 94,017 tree seedlings and growing them for 10 years).

"This project represents one way where we can do our part," says Karberg. "When I can start putting numbers down on operational savings, we can portion that savings to other projects and features for the airport."




***Improvements being eyed include lighting upgrades and lighting control systems, retro-commissioning the airport's geothermal system, a solar installation, an energy management system, water and sewer conservation measures, and the building envelope and weatherization***

## THE FUTURE

Getting staff buy in to these changes has been fairly easy, says Karberg, because support for it came from the top. "It started with the airport manager and it has his full support," he says.

The airport is currently looking at adding an internal educational program for staff, highlighting the ways they can conserve energy, as well as developing a public relations tool that can be distributed throughout the community and to airport passengers.

"Conserving energy [after all of these things are in place] is really about addressing human behavior, and making sure people are turning off the lights, asking managers to watch over their departments and find ways to conserve, and continually looking for new technologies that might further reduce energy consumption," he says.

To that end, Karberg says the airport is looking at various incentive programs that reward employees or departments for maintaining the greatest monthly percentage of energy savings. And, if a department, such as the maintenance staff, can show a specific operational savings, the money they save won't go back into the general operating fund, it will return them to the department where they originated, so it might purchase needed gear or equipment. "It allows them to see the results of not only the airport's efforts but their individual efforts as well," he says.

Nantucket Memorial Airport is setting the standard for other airports to follow It's a project that demonstrates the success that can be achieved when the public and private sectors come together to promote energy efficiency and reduce carbon outputs for the benefit of all.

**Ralph Hood**
**Certified Speaking Professional;**
**Member, Alabama Aviation Hall of Fame**

# A Warm Send Off To The Showalter's

## Showalter Flying Service, FBO for 70 years at Orlando Executive, is being sold to Atlantic Aviation, the nation's largest FBO chain

**I've been trying to figure out when/where I first met Bob Showalter, his wife Kim, their daughter, Jenny, and their son, Sandy. I can't do it to save my neck. Seems to me that I've always known the Showalter family.**

Unless you've been hiding under a rock, you know why I'm thinking of the Showalters. Showalter Flying Service, FBO for 70 years at Orlando Executive, is being sold to Atlantic Aviation, the nation's largest FBO chain. I found out about this via a special emailed issue of their publication, The Fly Paper at 7:42 in the morning, W ednesday, December 3, 2014. Each member of the family had written a page or so and each page was a unique blend of nostalgia, sadness, excitement about the future, and a conviction that this was the right decision.

> The Showalters have been —and are—my very good friends. I sincerely wish them the very best for the future.

When did I meet the Showalters? Let's see. It probably was at a Piper deal er meeting in the 1970s. Then, in 1979, they were at the NATA convention in St. Louis. I was emcee of the convention, and so nervous that it's a wonder I remember anyone there. But I remember the Showalters. They were already important people, but they were friendly as could be, and I appreciated them.

Over the years Bob and Kim hired me as a speaker several times and recommended me to others. Every time they hired me I wrote a column about their meeting. At one meeting Kim compared their FBO to an oasis in the desert serving camel caravans. So help me, they had a live camel at the meeting—he arrived in his own bus—and many Showalter employees wore Arabian attire. You shoulda seen me in a robe and a little headdress, leading that camel. I had hair back then, and it was red. You reckon there was ever such a thing as a red-headed Arab with thick glasses?

Then there was the time that the Showalters invited me to see a Space Shuttle launch live, in the wee hours of the next morning. I was advised that Jenny—then a cute and very young lady—would pick me up at my motel at midnight.

As the column put it, "Jenny—blonde, young and cute as a bug's ear—picked me up at my motel in her sporty little red car It has been awhile since a good-looking young blonde picked me up at a motel at mid- night, and I made the most of it. It took me 15 minutes to get into that car, while I held the door open (and interior light on) so the lobby crowd could see Jenny clearly. She, in the meantime, was trying to get me in the car fast, in case anyone she knew was watching."

I've been told that pilots f rom a ll o ver teased Jenny about that column.

I could go on with more stories and col - umns, but let me fin - ish by saying that the Showalters have been —and a re—my ve ry good friends. I sincerely wish them the very best for the future.

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By Jen Bradley

# Phoenix Air Rises

*Phillips 66 FBO in Cartersville, Ga., makes headlines with Ebola evacuations*

A general aviation airport in Cartersville, Ga., is home to Phoenix Air, the most recognized jet-charter air service in the world as of late. It's unofficial motto has always been: "The biggest company you've never heard of."

That all changed in the summer of 2014. Dent Thompson, vice president and COO of Phoenix Air, was reading the morning newspaper while on vacation in the North Carolina mountains when his cell phone rang. The voice on the other end was the Chief of Emergency Medicine for the United States State Department. "You know that device you developed for your plane?" he asked Thompson.

"Yes, the Aeromedical Biological Containment System (ABCS)?"

"Does it work? Where is it? Have you ever used it?"

Then, the question Thompson knew was coming: "How about Ebola?"

"Ebola?" Thompson asked.

"Yup. Ebola."

"You're asking us to go from the high school basketball court straight to the NBA," Thompson recalls was his response. "How serious is the government?"

"Very serious."

A couple days after the top doctors in the country flew into Cartersville, set up the unit in Phoenix Air's specially designed Gulfstream III, analyzed it and gave it a passing grade.

"Forty-eight hours later the ABCS was in our jet and we were headed to Liberia to bring home Dr. Kent Brantly," Thompson says. "We then turned around to get Nancy Writebol."

## A SMALL TOWN SUCCESS STORY

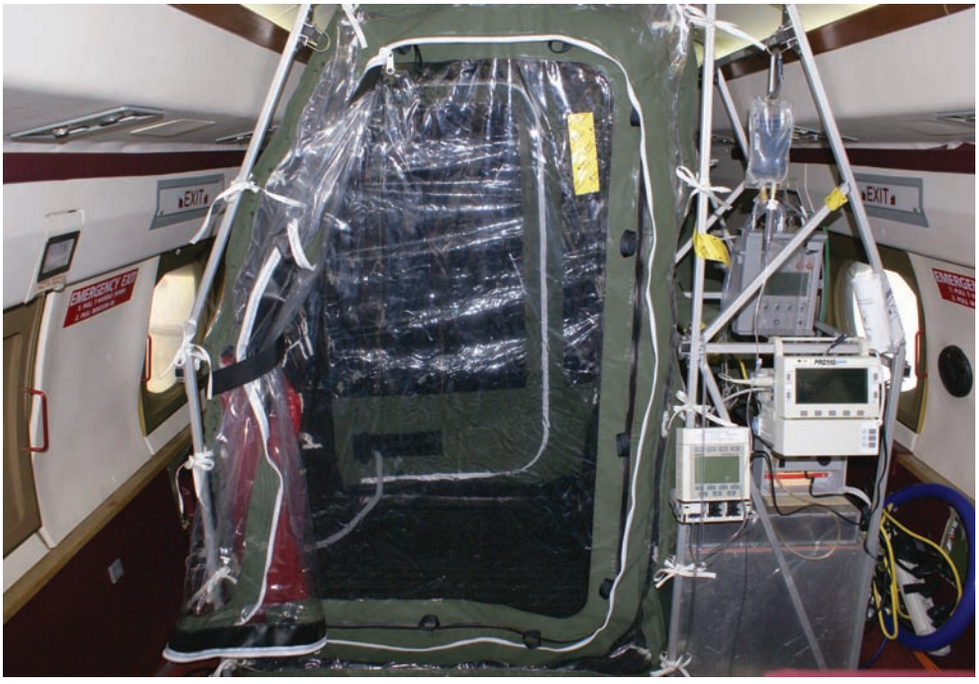
Thirteen other Ebola-infected patients have also been brought out of Africa by Phoenix Air, three of them Americans: Ashoka Mukpo, Nina Pham and Amber Vinson. But long before the name Phoenix Air was associated with the Ebola epidemic, Thompson's brother Mark made the decision to open a business in their hometown of Atlanta that would be unique to air services.

Thompson left The Walt Disney Company in 1984, after writing in its offices for 13 years, and joined Mark, who had retired from the Army. "The rest is history," he says.

The brothers relocated their business to a smaller county location, Cartersville Bartow Airport (KVPC), in 1985 with just two Learjet 24 models, a Piper Navajo, and an older Beechcraft 18. The company also has offices in Florida, Virginia, California, Alaska and Hawaii, but is the only FBO at KVPC and also a loyal Phillips 66 dealer since 1985.

Since that time, the runway at KVPC has been widened, lengthened and the overall facility developed, making it the fifth busiest general aviation airport in the state (out of 104). "It recognized the value of having a top-notch airport," Thompson says of the local community "And second, the people realized Phoenix Air was a great employment base. The more the airport grew, the more our business grew too."

*The patient is contained in the ABCS unit upon arrival to the plane and is in a biohazard suit.*




*The Gulfstream III is modified from a 12-seat plane to a three-room chamber (antechamber, patient area, and small bathroom area).*

*Fifteen Ebola patients have been brought out of Africa on Phoenix Air's Gulfstream III planes equipped with the ABCS.*

Over the past 30 years, the brothers' company has grown from less than a handful of employees to nearly 240 today, with 65 pilots and 40 aircraft ranging from Gulfstreams to Learjets and Embraer 120s. Several staff members are doctors, and nearly 20, registered nurses.

(As an aside, this growth extended to other corporate development and Anheuser-Busch now has its most modern brewery in Cartersville. Thompson met August Busch when he flew his Falcon 900 into the a irport on his way to visit the site. "It justshows that an airport can be a tipping factor for larger corporations," Thompson explains.)

## THE FRONTLINE OF EBOLA

In conjunction with the Centers for Disease Control and Prevention (CDC) and the Department of Defense, Thompson explains the ABCS was designed to cover all contagious diseases, both bloodborne and airborne pathogens. This was nearly a decade ago when the CDC gave Phoenix Air a contract to develop a transport device for airlifting Americans infected with the SARS and Avian Influenza epidemics.

At the time of printing, 15 Ebola patients have been brought out of Africa on Phoenix Air's Gulfstream III planes equipped with the ABCS, and flown to various sites around the world. Capt. Julie Smith, a pilot at Phoenix Air, has been one of the pilots on these missions. She made a mid-life career change and began flying, keeping in line with her husband's work at Phoenix Air. Both have been on Ebola flights, sometimes together.

Smith says they have a lot of stories to tell when they are older. "I do feel honored and it's very rewarding to be able to do something like this," she notes. "All the patients we've brought back to the U.S. have made a full recovery."

Thompson explains when the Ebola sit-uation arose, everyone at Phoenix Air was nervous, but many immediately volunteered to make the flights. Three pilots and three medical personnel fly on each Gulfstream III, which has been modified from a 12-seat plane to a three-roomed chamber (antechamber, patient area and small bathroom area).

Both agree that they can't imagine a scenario in which the crew would be at risk for contracting Ebola. Smith explains the patient is contained in the ABCS unit upon arrival in the plane, and after . The patient also is in a biohazard suit and the interior of

*Upon landing, the Gulfstream is flown into a special hangar, the plastic inside is taken down, secured in a biohazard container, and the entire plane is decontaminated for 24 hours straight. It goes through a number of chemical baths and fogs.*

## THE DEFINITION OF "DECONNING" EBOLA-STYLE

**DENT THOMPSON,** vice president and COO of Phoenix Air, says that moving a sick Ebola-infected patient is relatively straight forward. "Deconning the airplane after the patient's gone is the big deal," he remarks.

The decontamination process is what actually drove the design of Phoenix Air's Gulfstream III planes used for transporting highly contagious patients. "We reverse engineered the design and started out by asking how are we going to clean it? We had to work that out first."

Once the plane lands at the airport and before anyone is allowed out or back in, the Gulfstream is flown into a special hangar, the plastic inside is taken down, secured in a biohazard container and the entire plane decontaminated for 24 hours straight. It goes through a number of chemical baths and fogs.

The interior of the Aeromedical Biological Containment System (ABCS) in which the patient was contained, is made as "sterile as the surface of the moon," Thompson explains. It is scrubbed through a series of four HEPA-filters, the same that Level 4 biohazard laboratories use. "But we don't stop there," he continues. "We remove the unit from the airplane, it's put in a special truck and taken to a federal incinerator, shoved inside and burned."

Thompson stresses the extreme extent of this process and says it's ALL burned: the stretcher, the seat belts, the lights, all human waste, clothing, moon suits, etc. A brand-new ABCS is installed and in the case of the recent Ebola outbreak, the crew left immediately to get the next patient.

Capt. Julie Smith has flown some of the Ebola trips and says there was a concern from private residents living near the airport. "They wanted to know what we did with the airplanes once we're back," she explains, and says after some explanation, they were confident and found no need to worry.

Not to mention, any air ambulance or ground ambulance has standard procedures for cleaning and sanitizing their equipment. "Now, Ebola, that's a different deal," Thompson concludes.

the aircraft is covered in plastic. (The decontamination process is discussed in "The definition of "deconning" Ebola-style."

The entire Ebola transportation is coordinated by the State Department. Thompson explains that Phoenix Air is under contract, and any organization, local or foreign government agency, etc. must first contact that department. "This is by our choice," he says. "There are too many competing interests and we don't want to be an arbitrator that says yes to one and sorry, we're busy to another . We're it for the world right now."

Thompson says what drives he and his colleagues at Phoenix Air is the common Type-A personalities they possess. "Everyone works fast, thinks fast, talks fast, flies airplanes and deals with complex issues," he says. "We are populated by people looking for action, and so every morning I get up knowing there's no limit to what can happen at work that day."

### THE MANY LIVES OF PHOENIX AIR

This unique FBO offers a number of highly specialized services to its clients, many of whom are governmental agencies. It is the world leader in electronic warfare training for militaries, including the U.S., Canadian, Japanese and Australian militaries, as well as NATO. Phoenix aircraft play the enemy in air-to-air and air-to-ship combat training scenarios, Thompson explains. One of two or three companies in the world with this capability , Phoenix Air is the largest doing this type of work, he says. Twenty-five percent of its pilots are former military, while the others in this capacity are trained in-house by senior staff.

Early on the company also found itself in the air ambulance business, but not the typical flights, moving patients between facilities. "We operate strictly on the international level, which is much more complicated," Thompson explains. "We developed specialty aircraft with long legs and brought on board a full medical complement of doctors, nurses and paramedics."

Phoenix Air is one of the four largest of these specialized companies in the world, and in 2014 alone has done flights to China three times, Australia six times, India a couple times, and of course, Africa. Its aircraft have the capability of sustaining highly specialized equipment such as that necessary for neonatal transports, a Berlin heart pump and a portable extra-corpo-

# LUFTHANSA'S EBOLA JET

**LUFTHANSA,** the biggest airline in Europe by passengers carried, is converting one of its airplanes into an "Ebola jet," whose mission will be ferrying health personnel to treatment facilities in the West.

According to German magazine *Der Spiegel*, Lufthansa will turn one of its Airbus A340 long-range planes into a medical evacuation transport, featuring three "isolation cells" that will ensure patients can be transported safely.

The Ebola epidemic is concentrated in West Africa. The hemorrhagic fever has infected more than 14,000 people since March in Guinea, Liberia, Mali, Nigeria, Senegal and Sierra Leone, according to the World Health Organization, making this the biggest outbreak on record. More than 5,000 have died, according to WHO data. At least 20 cases have been treated in Europe and the United States. Three were Germans: One recovered, one is in treatment, and one died.

Experts from Lufthansa Technik, the company's aircraft maintenance arm, and doctors from the Robert Koch Institut—the German equivalent of the U.S. Centers for Disease Control and Prevention—will oversee the conversion of the four-engine airliner, which was requested by the federal government.

*Der Spiegel* reported, without specifying sources, that the project had been in the works under great secrecy since September when the Foreign Ministry began mulling the idea of having a dedicated transport plane for infected German Ebola volunteers. The only other options available to transport Ebola patients are currently two U.S. jets, the magazine said.

Last August, *Der Spiegel* wrote that the German Defense Ministry had been forced to admit the country lacked the means to quickly and safely transport to a hospital in the West any of its military personnel employed in the fight against Ebola who may get infected.

A twin-aisle jet carrying about 280 passengers when in normal service, the airplane, an A340-300 model, was chosen because of its long range, allowing it to reach most of the world without fuel stops. The plane also would be available for citizens of other nations.

An unspecified German firm will build three sterile, hermetically sealed containers, 13 feet by 13 feet, which will be installed in place of passenger seats. To avoid contamination of the main cabin, the isolation chambers will have their own ventilation system. The flight crew will be composed of volunteers.

According to the weekly magazine, the particular airplane chosen bears the identifier D-AIGZ in the German aviation registry. Aviation fleet tracker Airfleets says the airplane was built in 2000 and bears the name of Villingen-Schwenningen, a picturesque town in Germany's Black Forest region.

*Der Spiegel* did not specify whether Lufthansa will receive payment from the German government or any other government for the use of the plane, nor whether it will be compensated for the loss of revenue while the jet is unable to fly passengers. Requests to the airline for clarification on payment, and whether the plane would go back into commercial service at some point, had not been answered at the time of publication.

*— Courtesy of Der Spiegel*

real membrane oxygenation (ECMO) machine.

Interestingly, most patients and their families have never, and won't ever, know the name Phoenix Air. Thompson says the company is hired by a local air ambulance company which allows that organization to maintain a close relationship with the patient, but Phoenix Air always maintains operational control.

Smith says her favorite trips have been moving animals. Most recently, she brought three otters to Copenhagen, Denmark, from Anchorage, Ala. She's also flown three dolphins to the Georgia Aquarium from various sites around the world.

*The ABCS was designed to cover all contagious diseases, both bloodborne and airborne pathogens.*

Whether flying the U.S. presidential delegation to the Sochi Olympics, bringing infants from Guam to the States for open heart surgery , or transporting explosive and hazardous materials, Phoenix Air will continue to be the face of rare FBOs. (For more than 25 years, the company has held an exemption from the U.S. government to transport hazardous materials, and carries licenses for the same from six other countries.)

It truly is the biggest company many hadn't heard of, until Ebola struck. "Literally overnight we became one of the most famous air services in the world," Thompson says. "But we like working quietly, just doing what we do."

Smith agrees. "It's an amazing company. You have to live the lifestyle, that' s for sure, but it is very rewarding."

## ABOUTTHEAUTHOR

**Jen Bradley,**
**Owner, Bradley Bylines**
Bradley is a freelance writer based in East Troy, Wis. She specializes in writing about aviation issues and can be reached via her website, www.bradleybylines.com

By Ronnie L. Garrett

# Carol Lurie Tunes In To Aviation's 'NextGen'

*Building leaders, facilities and membership are all part of her plan as the new chair of Airport Consultants Council board of directors*

Carol Lurie, principal and leader of VHB's Airport Sustainability Planning Team, takes sustainability pretty seriously—at work and at home. And she says she will tackle her new role as chair of the Airport Consultants Council (ACC) board of directors with similar gusto, taking a hard look at sustainability within ACC and in the aviation industry.

Lurie says she set two major goals as head of the ACC board, one internal and one external. "The external goal is to increase the visibility of ACC and educate others on what ACC does. I want to let people know that ACC's member firms are available to serve the industry whether it's providing technical expertise or training or making connections in the industry," she says. "On the internal side, I would like to be developing our next gen, but it's not the aviation *NextGen*. It's the next generation of technical professionals. I want ACC to reach down into our member organizations, train young people and bring them in through theaviation industry. I'm really passionate about bringing young people into the industry and having them develop professionally. It's all about the sustainability of the industry."

With predictions indicating that airports will need $313 trillion worth of infrastructure investment by 2020, *Airport Business* chatted with Lurie, LEED AP, ENV SP, AICP, to gain

## HOW LURIE LIVES GREEN

**At Home**

A couple years ago, I installed 16 PV panels on my roof to produce solar-powered electricity for my house. The State of Massachusetts has a green power requirement with its utility companies. I signed up for the program, and luckily my house is perfectly located so that the roof is in good shape and faces the sun in the right direction. It was a really easy program and I love coming home and seeing the light glinting off the roof and knowing that I'm generating my own power.

**In Nature**

I love to go hiking. I hike with a group of people in the White Mountains every year. I also kayak.

**At the Airport**

One amenity I really can't do without are water refilling stations. I always have my metal refillable water bottle with me. I'm always on the hunt for water, and you'd be surprised how many airports do not have readily accessible water fountains.

### ON THE EONS DEFINITION OF SUSTAINABILITY ...

Sustainability is not just about improving air quality or conserving energy or water. It also includes the social and economic side of things; social being people, the community and jobs; and economic being revenue generation and operational efficiency.

### ON SUSTAINABILITY PLANNING ...

Sustainability is not a plan, it's a process. You're never done.

### ON LAND USE PLANNING ...

If you think about an airport as a city, putting land uses in the most convenient location for an airport's multiple users is the way to go.

### ON AIRPORT INFRASTRUCTURE NEEDS ...

... with changes in fleet mix, as the airlines consolidate and add new aircraft to the fleet, we are seeing a lot of work happening on the terminal side.

*VHB developed Massport's first sustainability design guidelines. These guidelines were used in revamping Boston Logan International Airport's terminal A, making it the first airport to achieve LEED certification. Photos courtesy of Massport.*

insight on the infrastructure developments and sustainability initiatives airports need to consider in the years ahead.

## WHAT TYPES OF IMPROVEMENTS ARE SORELY NEEDED AT AIRPORTS?

There is going to be a substantial amount of improvements needed on the terminal and passenger processing side. Many older terminals are not very flexible. They need to be made more flexible by connecting on the airside, for example, so they can handle different types of airline consolidations—think curbside improvement, parking updates, incorporating the use of high occupancy vehicles, improving access to airports, and adding people movers. I predict we will be seeing many of the major urban airports improving access. We need to also make airports more efficient and generate more non-aeronautical revenue, and really identify what's needed for aviation purposes and what could be developed for non-aviation purposes.

## WHAT CAN AIRPORTS DO TO IMPROVE THEIR EFFICIENCY?

There are all sorts of things happening right now from making baggage handling facilities more efficient to accommodating different airlines and the way they work with passengers. On the concessions side, they are offering more opportunities for passengers to improve the airport experience—whether it's through passenger amenities, a varied shopping experience, or being able to order your meal at the gate and have it delivered right to where you're sitting.

On the operations side, airports need to look at the highest use of gates, overnight aircraft parking spaces, and more. Airports are such a constrained facility; it's really important to use every piece of land as efficiently as possible. It's really common sense planning. If you think about an airport as a city, putting land uses in the most convenient location for an airport' s multiple users is the way to go.

## WHAT IS THE TRUE DEFINITION OF SUSTAINABILITY?

Sustainability is not just about improving air quality or conserving energy or water . It also includes the social and economic side of things; social being people, the community and jobs; and

economic being revenue generation and operational efficiency VHB follows the ACI-NA definition of sustainability , the EONS definition: Economic, Operational, Natural Resources and Social Responsibility, which takes a very broad look at sustainability.

### WHAT ARE SOME LESS OBVIOUS CHANGES THAT LEAD TO GREATER SUSTAINABILITY?

On the social side they can make sure that their employees have sufficient training and really understand how they can contribute to the organization's sustainability. It's looking at everything from the supply chain to the materials that are used, whether they're used on a day-to-day basis or in construction, so you cut down on transportation costs.

It's teaching sustainability awareness to help others understand that what they do at home as well as at the airport is very important. How do they get to the airport, for example? What's the most sustainable way of accessing the airport? Should they drive in alone, take an express bus or train, or get there in a high occupancy vehicle?

Giving back to the community is also a huge piece to sustainability . Many airports have almost a corporate social responsibility approach to sustainability, whether it's Wings for Autism or a plane pool to raise funds, charity drives or internship programs. People at airports are beginning to value the community return on investment, almost as much as the financial return on investment.

### HOW IMPORTANT ARE SUSTAINABILITY MASTER PLANS?

I got in on the ground floor. I worked on two master plans with teams at other firms. The first one we contributed to was a sustainable master plan for Ithaca Tompkins Regional Airport. Then we participated in a standalone sustainable plan for Northeast Florida Regional Airport, which is a small general aviation airport in St. Augustine, Fla. From those two FAA-funded plans, the FAA developed guidance for creating sustainable master plans. I've also worked with Salt Lake City International Airport, Nashville International Airport, and Boston Logan International Airport on their sustainability management plans. It's a terrific program; many valuable lessons are being learned. It's been really great learning how different airports are approaching sustainability in creative and innovative ways, setting different priorities depending on what's happening in their regional context.

Our sustainability practice has been supplemented by its work with *Airport Cooperative Research Program* (ACRP). With VHB, I was the principal investigator for an ACRP project that developed a prototype sustainability rating system, similar to the LEED program, but specifically for airports. That's going to be released at the end of the year. VHB also participated in the update of the SAGA database, which is another ACRP sustainability project. VHB also contributed to a another ACRP research project looking at the operations and maintenance side of sustainability . To successfully implement sustainability initiatives, you really need to understand what it means for operations and maintenance down the line.

There are two really exciting projects in the works that look at sustainable management planning on a state-wide basis, both in Virginia and Colorado. These plans are coming up with an approach to sustainable planning for airports of all sizes, with different roles and different geographies. The idea behind these plans is to develop a template of examples, goals and objectives


*VHB provided permitting services for the state-of-the-art terminal at Boston Logan International Airport. Shown is the brightly lit walkways in the airport. Photos courtesy of Massport.*

## 2015 ACC BOARD OF DIRECTORS

## THE AIRPORT

Consultants Council (ACC) names its 2015 Board of Directors.

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for sustainability strategies. If you determine that, for example, water conservation, energy and community are your three priority areas, what menu of options could you consider?

### WHERE ARE AIRPORTS AT WHEN IT COMES TO SUSTAINABILITY?

It's becoming a major trend for a couple of reasons. Communities are asking for it; passengers are asking for it; and local leadership, whether it's the county or the state, are asking for it. If it's a county-run airport, and the county is doing a climate plan or a sustainability management strategy, where does the airport fit in? It's almost become expected to think about sustainability. People expect to see natural light in airports. They look for sustainable construction materials, passenger amenities, and quality, healthy food.

Sustainability is not a plan, it's a process. You're never done. You first need to figure out what your priorities are then prove that you can work on your priorities. Early successes are very powerful. I don't think sustainability is ever done. I think it's a mindset. It's a way of doing business. It's planning for the future in the most rational way you can, being mindful of your resources, being mindful of your community, being mindful of your finances, and putting those pieces together.

# airport business

## Become a Member and Connect with Us!

Join the Conversation

By Craig Marshall

# Transportation Gets Smart

*Airports deliver real-time information via interactive way-finding*

Gone are the days of paper signs and delays in getting updated information out to travelers. We live in a real-time world and travelers expect real-time, relevant information at their fingertips. Visual communications, using devices like digital signs and interactive kiosks, can enhance the travel experience by helping people get to where they need to go safely, efficiently and effectively. Equipping passengers with the right information—at the right time—can ensure a positive experience in an environment that demands real-time sensitive information.

Visual communications in transportation can:

- Alleviate perceived wait times;
- Enhance travel experiences;
- Engage passengers with news, weather, emergency broadcasts;
- Deliver real-time location-based information, such as arrival/departure times, cancellations and delays, or service stoppage;
- Improve operations by reducing the workload of employees;
- Keep passengers safe; emergency notifications can interrupt regularly scheduled content; and
- Be a "travel guide" through interactive way-finding kiosks

Wayfinding has evolved from static paper signage to electronic way-finding to interactive way-finding. This transition in part has been the result of the availability of new technologies for airports, stations and terminals to leverage.

One technology that had a significant impact was digital signage. Digital signs enabled transportation organizations to quickly and easily update signage and provide travelers with more accurate and timely access to arrival/departure times, cancellations and delays. The advent of digital signage has also led to significant improvements in way-finding in facilities, such as airports, where there are often multiple terminals and large volumes of people who need to move through the space quickly.

In airports way-finding encompasses a number of areas including directing travelers across terminals, to and from gates, through security and to popular destinations within the airport such as restaurants and shops. These same screens also display advertising and news and weather updates.

Interactive way-finding takes traditional way-finding to an entirely new level by integrating technologies like touchscreens, RFID and barcode scanners. Touchscreens have enabled a new level of self-service. They allow travellers to independently select a destination from a map or list, which triggers the system to create a map displaying the end point and including things enroute, such as multiple floors, multiple regions and multiple buildings. Additionally some software solutions that power interactive way-finding kiosks use conditional formatting and are able to react to things such as elevator operation times, which prompts the system to choose an appropriate route based on current conditions.

## INTERACTIVITY AT SFO

San Francisco International Airport (SFO) is an excellent example of interactive way-finding in an airport environment. This world-class airport services more than 45 million domestic and inter-

## SMART TRANSPORTATION SEMINAR

**CRAIG** Marshall will be presenting a Roundtable Discussion entitled, "Smart Transportation: Advancing Transportation with Interactive Wayfinding," at Digital Signage Expo 2015 on Thursday March 12 from 12:30-1:30pm at the Las Vegas Convention Center. For more information about DSE or to register for this or any other educational seminar or workshop and learn about digital signage go to www.dse2015.com

national passengers annually and is one of the largest in the United States. Its four terminals with seven boarding areas offer non-stop flights to more than 34 international cities on 29 international carriers. It is the Bay Area' s largest airport and connects non-stop with 78 cities in the United States on 15 domestic airlines.

Its sheer size and many pathways can make a traveler feel as if they are trapped in a maze of nev er-ending walkways as they move from terminal to terminal. Historically the airport has used more than 270 paper maps airport wide to help trav - elers get to where they need to go. These paper maps—while effective—have not been ideal. The paper maps can't be immediately updated when there is a change, and the cost of reprinting them and the staff time involved is high.

In 2012, the airport launched a project to rene vate Boarding Area E. An interactive way-finding system was planned for this newly renovated area to eliminate the need for paper maps, assist in navigating from terminal to terminal, and provide travellers with the optimum route.

Boarding Area E opened in January 2014 with two interactive way-finding screens powered by Omnivex's Moxie software in the remodelled boarding area. The screens enable travellers to easily find where they need to go anywhere in the airport and the best route to get there, whether by walking or by taking the airport' s automated AirTrain. They also allow passengers to explore their options for dining, shopping and things to do, giving them a more rewarding airport experience. The touchscreens are location-smart and thereby predetermine appropriate destinations based on the passenger's pre- or post-security location.

This solution enables the airport to tie data in from various source systems (e.g. maintenance, elevators, emergency alarms) and devices (e.g. RFID, barcode scanners), to the interactive maps, which generate floor plans that reflect the current environment in the facility and take into consider ation things such as construction closures or other obstacles that might impact a particular route.

Through the use of conditional formatting, the system considers information like elevator oper- ation times and route lighting, when calculating the best route for getting from point A to B at a particular time of day. By interfacing with a variety of source systems it can also handle multi- floor and multi-region way-finding, providing users with maps covering multiple areas, such as buildings or terminals, and multiple transfer points such as stairs, elevators, tunnels or bridges. The connections into real- time data and devices also ensure that the system is kept current and there is no need for reprinting maps or replacing signs every time something changes.


*At SFO, Omnivex Moxie digital signage software powers interactive way-finding touch- screens that guide passengers through the airport.*

## ABOUTTHEAUTHOR

**Craig Marshall, Omnivex**

Craig Marshall is Omnivex's solution sales profession- al for digital signage for the transportation industry. He has been employed with Omnivex since 1999, starting with the company at the very beginnings of digital signage technology. He is a professional engi- neer and has previously worked in a variety of fields including engineering, transportation, manufacturing and sales

## SFO'S CROWN AWARD

**SAN FRANCISCO** International (SFO) won a Digital Screenmedia Association Crown A ward in November for its interac - tive way-finding installation in the newly renovated Boarding Area E. The DSA Crown Award recognizes excellence in digital out-of-home content. The airport was a Gold Medalist in the Point of Transit category. The system uses Omnivex Moxie digital signage software to power interactive way-finding touchscreens that guide passengers through the airport. Content, user experience and user interface design were developed by Ilium Associates.

By Arpit Malaviya

# Data Mining and Analysis

*Data becoming a central element in airport decision making*

**Airports hire graduates from aviation programs across the United States. It is only a matter of time before these same airports will seek analytics program graduates in their list of hires. Several universities have specialized one-year programs in business analytics, the discipline of using data to explore and solve business problems.** We have access to an abundance of data but what is missing is a sustainable and pragmatic framework to have that data work for airports. In our very competitive aviation industry, the long-term success of our business will be determined by how well we utilize the intelligence garnered from the data.

Any discussion of data begs a reflection of our current state of business. We rely on data intelligence while pitching to airlines for new air service and to the community for creating awareness about the airport's economic impact. We are familiar with Key Performance Indicators (KPIs) such as operating revenue per enplaned passenger, on-time departures, non-airline revenue per enplaned passenger and number of runway incursions.

According to the *Airport Cooperative Research Program* (ACRP) Report 19 article "Developing an Airport Performance-Measurement System," KPIs can be classified into six buckets: Financial Performance, Safety Performance, Operations Performance, Personnel Performance, Customer Service Performance and Community Performance.

Most airport managers measure the success of running their airports using data-driven KPIs from these aforementioned six buckets. The point this article discusses is not a new concept, but rather a tremendous opportunity that is perhaps going untapped by not using the data airports already have to its fullest potential.

The current usage of data at airports has a variety of limitations. These limitations apply to other industries but in general the public sector has been slower to take advantage of data. There has been good work produced by ACRP that elaborates on some of the challenges faced by airports in leading the way in using the data. The current usage of data has small sampling size and the frequency of data analysis is on a monthly basis, at best. Data analysis is being handled manually, using Excel or similar tools. This approach is cumbersome and limits the scalability of data analysis.

Several airports are also limited by staffing and lack of proper training to conduct data analysis on an ongoing basis. These airports are restricted to using a data driven approach for Financial Performance and Customer Service Performance. The data analysis for Financial Performance is done not by choice, but as a requirement for reporting purposes to boards and federal and state-level agencies for grant compliances, etc. The Customer Service Performance data is generally captured and analyzed through third-party annual surveys.


With the current approach to data, the power of data intelligence is underutilized.

## DATA DRIVES BIG DIVIDENDS

Given the current background, let us next focus on the benefits of data to airports. Using data as the central pillar to making business decisions should be each and every airport's goal. From a financial standpoint, a good understanding of an airport's data helps derive the cost of doing business, areas for revenue enhancement, and the external and internal drivers for concomitant variations in financial numbers. The same data analysis applied to safety framework illustrates the number and frequency of incursions, accidents and injuries occurring at the airport.

A rigorous data-driven approach helps perform root cause analysis of these situations to address any deeper infrastructure or personnel issues that could be leading to these safety outcomes. The application of data to operations helps ensure that runways and taxiways have the highest uptime, work orders for maintenance are being handled in an expeditious manner, and parking assets and ground transportation services are meeting passenger demand.

The data can also benefit when applied to the personnel area. It can provide a deeper understanding of employee turnover, training hours per employee, and airport certification achieved by employees. The insights gained can help to

We all have heard the saying, "When you've seen one airport, you have seen one airport" and that saying is even more applicable when it comes to data. No two airports have the exact same needs but one thing is clear—we cannot ignore the power of data on our business decisions in order to remain competitive.

ARPIT MALAVIYA,
CO-FOUNDER AND CEO, PRODIGIQ INC.

boost employee morale, lower the cost associated with employee turnover, and training in on-boarding new employees. The data can provide gold nuggets to measure and improve customer service. An analysis of the nature and frequency of complaints along with demographics of the complainant, viewed with external factors such as time of the year, can help the airport improve signage, provide more food and beverage outlets, and offer relevant retail stores to passengers. The response time associated with these complaints and measuring passenger satisfaction with the response of the customer service representative are a few other ways to enhance customer service at the airports.

Last but not the least is the category related to airport community. This predominantly includes data related to noise, environmental issues and construction projects. The data analysis could be used to better handle noise complaints. Perhaps, data correlation of noise complaints to the aircraft, carrier, time of the day, and day of the year can be instrumental in addressing and mitigating noise issues, not just reactively but proactively as well.

Similarly, using data to get a deeper understanding of environmental performance such as number of hazardous material discharge violations can be a meaningful metric to communicate to the community to ease environmental concerns. It is also instrumental for airports to capture and inform the community on how "green" they are from a sustainability point of view.

The benefits of data can only be accomplished if there is openness in the industry to share the measured outcomes. We can utilize our industry organizations to compile these KPI outcomes so we can see how we fair to comparable airports. As airports, we can also lead by identifying similar airports for sharing data benchmarks and results to assess our success for different KPIs.

## TOOLS TO TRACK DATA

Utilizing the power of data has become easier for airports with advancements in software. Software allows scalability, real-time data analytics, and removes the manual process associated with data analytics of yesteryears. Software also allows for data analysis on an ongoing basis rather than limiting it to few times a year This helps with sample pool size and increases confidence level in the data. Furthermore, use of software facilitates learning in real time and allows airports to adjust the business processes to achieve the targeted results. The key to finding the right solution is software that is configurable and customizable to meet an individual airport's specific data needs and one that can adapt as needs evolve. Success will be determined by selecting a software partner who has aviation subject matter expertise and the know-how to achieve the desired outcomes.

Based on ProDIGIQ's experience helping airports nationwide, the solution should be extremely user-friendly and intuitive even while dealing with complex and sophisticated algorithms. Another key that has helped the firm's clients is the data visualization associated with its software. End-users can easily comprehend complex data visualized in the form of graphs and charts with data outcomes, as opposed to spreadsheets.

The whole discussion about data would be incomplete without addressing the intersection of data software and social media. Social media has become necessary for airports to market themselves and engage with customers. Now airports can use software to automatically draw insights from social media about what customers are saying, their likes and dislikes about the services offered and areas for improvement. This tool replaces the need for cost-intensive surveys on an annual basis. Furthermore, the process provides a bigger sample due to ongoing data gathering and allows airports to employ corrective actions based on what they are hearing from their customers in real time.

There are many useful resources that we could use as airports, including aviation-specific sources for data benchmarking such as FAA's CATS system, ACRP, the U.S. Department of Transportation, and the Airports Council International-North America. There are even more non-aviation resources to master this subject including Ted Talks and Harvard Business Review case studies. There are two well-written books on this topic—"Data Science for Business" and "Data Smart: Using Data Science to Transform Information into Insight."

We all have heard the saying, "When you've seen one airport, you have seen one airport" and that saying is even more applicable when it comes to data. No two airports have the exact same needs but one thing is clear—we cannot ignore the power of data on our business decisions in order to remain competitive.'

## ABOUT THE AUTHOR

**Arpit Malaviya**
**ProDIGIQ Inc.**

Arpit Malaviya is the co-founder and CEO of ProDIGIQ Inc. He is a board member of the ACI-NA World Business Partners/Associates and a board member of the Southwest Chapter of the American Association of Airport Executives. Malaviya was honored among Airport Business' 2014 Top 40 Under 40 winners. He is actively involved in and serves on various committees of AAAE, FAC, and NWAAAE, NEAAAE, SWAAAE, SCAAAE and SEAAAE Chapters. Malaviya is a frequent speaker and author in the aviation industry. He previously worked for Boston Consulting Group (BCG) and was involved in a major strategic re-engineering initiative at American Airlines. Malaviya has served on the Advisory Board of Technology Management Program at University of California Santa Barbara (UCSB). He is a recipient of Barry Goldwater, UC Regents, National Science Foundation and Paul and Daisy Soros fellowships, to name a few. Malaviya holds a Master's Degree in Electrical Engineering (EE) from Stanford University and an undergraduate degree in EE with highest honors from University of California at Santa Barbara. He has a patent pending for digital media technology for airports.

By Ronnie L. Garrett

# Focused on the Future at Terminal F

*The Sheward Partnership Designs Expansion for Philadelphia International Airport's Terminal F Hub*

Philadelphia International Airport's Terminal F was designed for a different time. The terminal was originally designed and built for commercial flights consisting of 30 to 50 passengers. That scenario no longer exists. The dramatic and continued growth of enplanements by US Airways and other regional air carriers in recent years meant the level of flights coming in and going out of the aged terminal exceed twice what the engineers originally anticipated in its design and planning.

With the evolution of aviation technology , the relative low cost of fuel and an expanding economy, the airport experienced a tremendous period of growth. The terminal could no longer accommodate the amount of travelers who were filtering through each day. The concessions were undersized relative to the passenger volume, resulting in a lower level of service and customer convenience. In addition, the original space lacked a diverse selection of dining options and entertainment for waiting passengers. It became apparent that this fast-paced, high-traffic, and commuter-filled terminal needed to expand to include larger amenities and better customer service options for its passengers.

To adapt to the dramatic and continued growth of enplanements, the Philadelphia Division of Aviation and the City of Philadelphia commissioned The Sheward Partnership LLC to expand and renovate the existing terminal.

The $125 million expansion to T erminal F included a new baggage claim building, which is seeking LEED Silver certification, significant terminal building improvements, which include inline baggage screening and an expanded security checkpoint, and an expansion to the hub and food court area. The hub expansion enlarged the food and retail concession space by more than 50,000 square feet and increased the offerings from five concessionaires to more than 20.

## EXPANDING THE HUB

The hub expansion is the centerpiece of this project. Commuter passengers enter the hub from either one of three concourses or enter from a bus vestibule serving as a commuter connection to other passenger terminals within the airport. From a planning perspective, it was important to treat each entry to the hub as a distinctive and exciting threshold into a dynamic space and to create an engaging passenger experience.

The exterior architectural expression of the hub is designed to blend into its surrounding building context. The angled curtain wall form, in concert with light and heavy material expression, evokes a strong connection to existing structures. Functional programming and "back of house" service areas were planned within the outer solid rectilinear forms. A large translucent volume was placed in between these heavy cubes to highlight the transparent nature of the interior space. This section of the building opens up to the southern exterior in an attempt to bring in significant natural daylight. Additionally, unfiltered daylight is infused into the space year-round by north facing roof monitors.

The interior architecture is a seamless and unified blend of the existing and expanded hub space. It has been transformed from a dimly lit configuration into a bright and inviting central

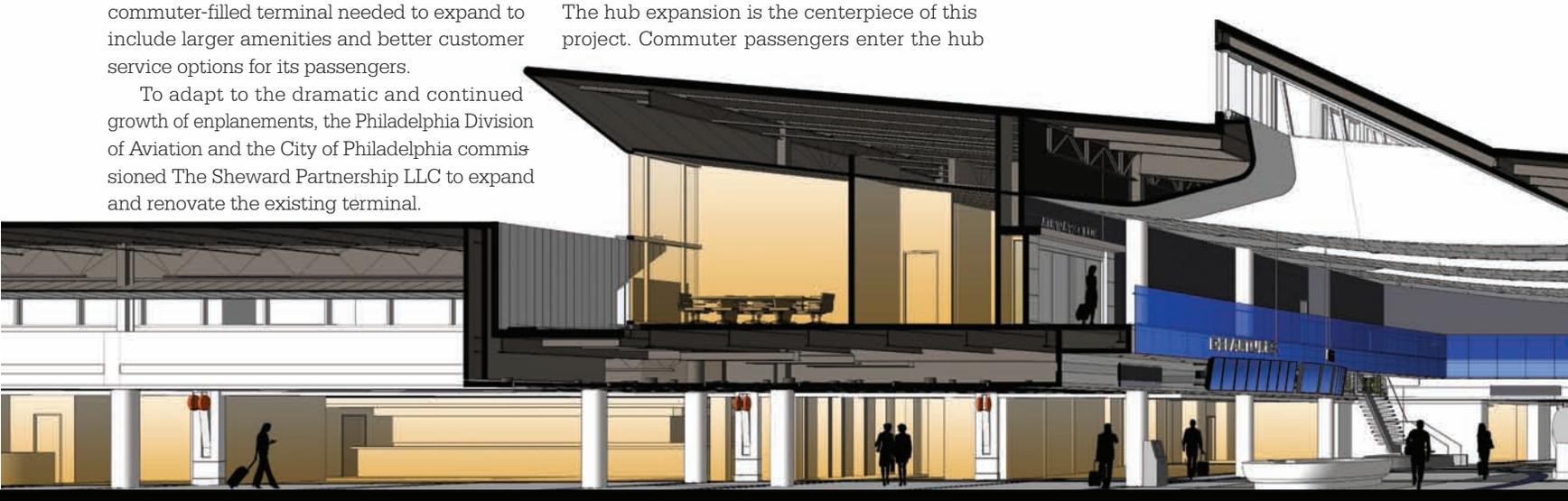



PHOTO CREDIT: THE SHEWARD PARTNERSHIP, LLC

*Food and beverage concessions, retail spaces and an information desk are located for passenger convenience.*

area. The large southern windows and north-facing roof monitors bring natural light throughout the newly expanded volume and provide natural light for the new offices at mezzanine level. The dramatic and sculptural sweep of the ceiling unites the new and existing portions of the hub while addressing the constraints of the existing structure. The design further integrates the existing and new spaces by expanding the corridor width at Concourse 3 in response to the airport's feedback. The new, retail spaces in the north area of the hub are angled, to improve their exposure and visibility. This also improves circulation at the intersection of concourses and hub. The large central volume of the hub and the new food court has a spacious and inviting atmosphere that provides Terminal F passengers with an alternative to waiting in their hold room. Food and beverage concessions, retail spaces, and an information desk are located for convenience. As passengers make their way to their gates or to the shuttle they can easily assess these options. The layout of food and beverage spaces to either side maximizes the efficiency of the concessions, provides visibility from many angles and maintains clear circulation zones. Service corridors are located behind the food and beverage spaces in order to help minimize service traffic in the public areas.

## SUSTAINABLE DESIGN

Sustainable design strategies were incorporated in the hub at various stages of design, construction and operation. One of the main priorities was to reduce energy use and associated air emissions. The hub utilizes high-efficiency LED light fixtures combined with sophisticated lighting controls to reduce inefficient and wasteful practices. Daylighting strategies were carefully designed to introduce ample daylighting, create views to the exterior, and minimize heat gain. Another important design consideration was to reduce the heat island effect, where large areas of dark asphalt raise surrounding temperatures. The heat island effect increases cooling loads in the summer, resulting in greater energy consumption and cost. The hub utilizes light-colored concrete paving and roofing materials, which reflect heat and lower temperatures. Finally, the materials and resources used on this project were selected for their sustainable benefits. Terrazzo flooring is featured throughout the hub, which utilizes recycled materials, reducing the negative impacts resulting from the extracting and processing of virgin materials. Many of the subcomponents of Terrazzo flooring were sourced locally to reduce the impact of transportation.

## MAKE IT PRETTY

An additional benefit of the new Terminal F is its contribution to the Philadelphia "Percent for Art" program. This program requires public projects to include public art in the overall project budget. PHL is owned and operated by the City of Philadelphia and is located on city owned land. These factors trigger the inclusion of this project in the "Percent for Art" program. For this project, an original piece of art was commissioned by artists, Ellen Harvey & Jan Baracz, titled *You Are Here,* a large map which incorporates a red arrow pointing to the site of Terminal F. This artwork covers the entire expanse of Terminal F's glass curtain design feature.

Both the baggage claim and connector are still a work in progress, but for now, passengers can enjoy spacious waiting areas and their pick of delicious cuisine all in the center of a thoughtfully and sustainably designed piece of architecture.

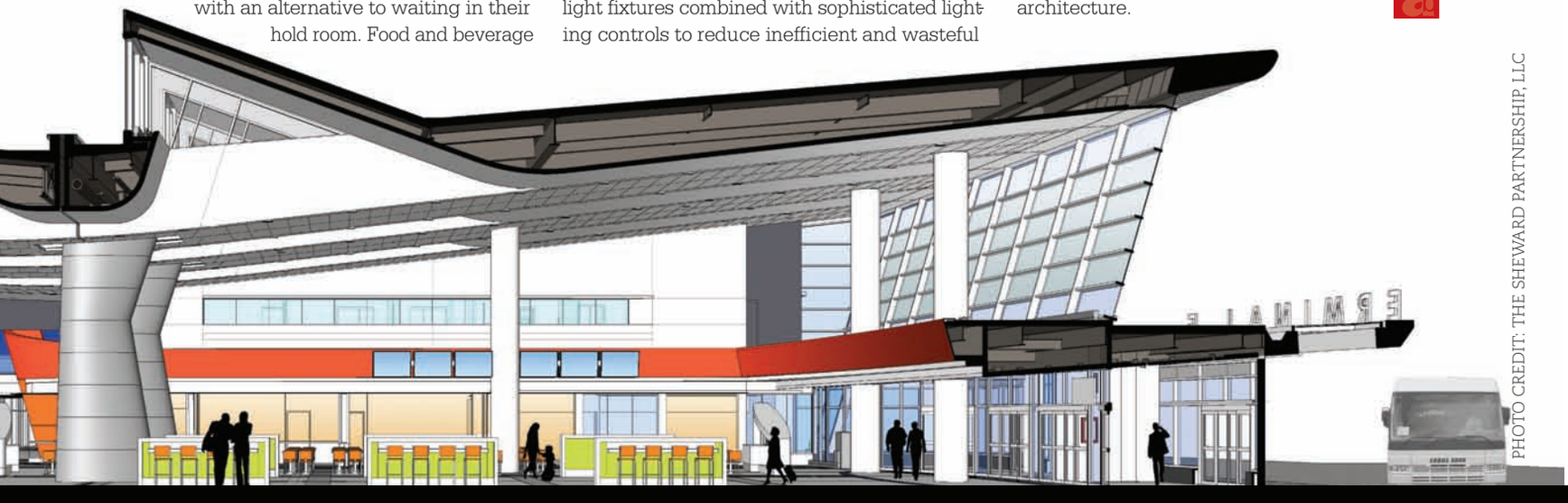


PHOTO CREDIT: THE SHEWARD PARTNERSHIP, LLC

By Ronnie L. Garrett


# SOPHISTICAT

*ICONS smart signage technology from Advanced Application Design helps passengers navigate the complex maze of Hartsfield-Jackson Atlanta International Airport's transportation underground*

Visitors to the largest corn maze in the world routinely dial 911 for assistance in navigating the labyrinth's twists and turns. While no one calls the police for help journeying through an airport's maze of walkways, tunnels and gates, passengers can still get equally lost.

From the moment passengers enter an airport facility they need to make their way somewhere, be it a check-in counter, security or their gates. Things become even more complicated in major airports, such as Hartsfield-Jackson Atlanta International Airport, which take their passengers underground to a


## JUST THE FACTS

- **Where:** Hartsfield-Jackson Atlanta International Airport
- **What:** Way-finding signage for Automated People Movers
- **Cost:** $2.7 million
- **Product:** 374 ICONS displays
- **Manufacturer:** Advanced Application Design

# E D SIGNAGE

transportation mall equipped with Automated People Movers (APM) to move them from place to place.

"People tend to get confused about exactly where they are when they're in our underground transportation mall," says Steve Poerschmann, director of Aviation Transportation Systems at Hartsfield-Jackson Atlanta International Airport.

Knowing this, Poerschmann's team set out to find better way-finding technology for the world's busiest airport's transportation mall and on the APMs that move passengers throughout the facility. "The impetus was to better communicate with our passengers; it's something we're always trying to improve," he says.

The airport solved this problem with a new technology from Advanced Application Design. The Wilmington, NC-based company's ICONS line of digital signage replaces scrolling LED signs on the inside of APMs or light rail train cars and provides graphic, multilingual way-finding in addition to audio announcements and advertising.

To date, the airport has invested $2.7

> "People tend to get confused about exactly where they are when they're in our underground transportation mall."
>
> STEVE POERSCHMANN, DIRECTOR OF AVIATION TRANSPORTATION SYSTEMS, HARTSFIELD-JACKSON ATLANTA INTERNATIONAL AIRPORT

> "We think the potential for advertising in the transportation mall is huge. And we believe the potential for dynamic advertising is even greater than what we're currently getting from static advertising."
>
> STEVE POERSCHMANN, DIRECTOR OF AVIATION TRANSPORTATION SYSTEMS, HARTSFIELD-JACKSON ATLANTA INTERNATIONAL AIRPORT

million in 374 ICONS displays in order to provide six signs in every one of its 59 Bombardier APM cars and have 20 spares on hand, and to upgrade its fiber optic network as well as add more WiFi antennas to transportation mall equipment rooms and tunnels to enable the cars and signs to communicate as they traverse through the transportation labyrinth.

Though a sizable capital expense, Poerschmann indicates that using these signs to also advertise concessions and retail outlets will pay for the project. "The life expectancy of these displays is five to seven years," he says. "If we're able to generate the amount of revenue we think we can on a consistent basis, we'll get a seven- to eight-fold return on our investment during that timeframe."

## BETTERING PASSENGER COMMUNICATIONS

The ICONS installation grew out of two different projects that the airport had going on simultaneously, according to Poerschmann. Part of the airport construction project on the Maynard H. Jackson Jr. International Terminal and its new concourse F included expanding The Plane Train® APM system. But the old LED signage, installed on the cars above the doors and centerpoints, was obsolete.

"The original manufacturer didn't service the signage anymore and didn't make a replacement for it," says Poerschmann. "We had no way of going back and programming the existing signage on the vehicles to expand the system to Concourse F."

Though they found they could purchase similar signage from another vendor, the price for that signage was pretty steep—the airport not only had to replace the signage on its existing Bombardier Innovia APM 100 Series cars, but on the 10 new cars they were adding. "In order to maintain the same frequency of cars at each concourse, we needed to be able to put additional trains out on the system," Poerschmann explains.

As the airport canvassed the digital signage market for replacement signs, Advanced Application Design approached them about customizing a product for them. The product would fit into the existing sign space and provide the capability for high-definition graphics on the displays. "At that time no one else was manufacturing a display that would fit into existing signage space on the vehicle," he says. "When we went through the review process, part of the discussion centered on actual aesthetics and the appeal of the signage to passengers. In the end we chose Advanced Application Design to develop a product for us."

Advanced Application Design worked closely with Bombardier to ensure the signage software communicated with the cars so that the signs were triggered with accurate vehicle location information and could queue up the right graphics at the right time. The signs offer multilingual capabilities, which contribute to the welcoming aspect of the airport for its international travelers. The signs provide way-finding graphics in English and seven foreign languages—French, German, Spanish, Arabic, Mandarin, Korean and Japanese. "These languages cover about 90 to 95 percent of the international travelers that transit through the airport," says Poerschmann.

As this first project got underway, a second project arose when the airport moved from a 25 kHz communications system to a 12.5 kHz system to comply with an FCC-mandated narrow-banding scheme for land mobile radio systems to provide more space in the UHF and VHF frequency spectrum for the growing demand for communications. Airport officials decided it was the right time to upgrade the public address systems onboard the vehicles, and asked Advance Application Design if the computers used in the signage could provide public address capabilities as well.

Bombardier and Advanced Application Design again teamed together to create a public address communications system. As a result of their efforts, the signs offer multi-channel capability and greater computer storage capacity which translates into a wider variety of audio announcements available for broadcast to passengers.

While the system offers many benefits, an important consideration with this type of technology is service and maintenance. But Advanced Application Design has that covered, says Barry Vaughn, chief operating officer with the company.

Advanced Application Design's annual maintenance contract includes remote maintenance and monitoring of both station and in-car signage. The company proactively identifies issues and takes steps to address them,

often before the customer is aware that there is a problem, according to Vaughn. They also provide software updates, quarterly inspections, and regular cleaning and replacement of components.

## NEXT STEPS

Today the signs have been expanded to provide location-specific concessions listings, but Advanced Application Design plans to add dynamic commercial advertising capabilities to Hartsfield-Jackson's ICONS signs in 2015, when a portion of the signs in every vehicle will be dedicated to advertising space. "This will create a platform for new non-aeronautical revenue streams for the airport," says Poerschmann.

He points to the success the airport had when it added window cling advertising to the center two windows on each vehicle. Passengers view the advertising as the APMs move through the airport. "So far from just those window clings we've generated $696,000 of non-aeronautical revenue through the end of October this calendar year," Poerschmann says. "

Six months ago, the airport added vinyl clad advertisements to APM station doors as well. "We've already generated another $630,000 in revenue because of that," he says. "The airport's share is approximately $860,000 of the money from both sources. We think the potential for advertising in the transportation mall is huge. And we believe the potential for dynamic advertising is even greater than what we're currently getting from static advertising."

ICONS signage offers very high resolution (greater than 5K pixels horizontally) and can clearly display high definition images or screens with a lot of information. Likewise, ICONS signs drive the audio in the vehicles so video ads with synchronized audio can be played on one, two, three or all four panels in each sign.

Because all advertising content physically resides on the computers in the ICONS displays, the content can be streamed into the APMs as they move around the underground transportation system. The data is fluid and can be quickly changed. "If one concessionaire terminates their agreement, we can quickly update that information and put a new concessionaire in their place, which saves costs to the airport because we no longer have to print out new hard displays or coordinate these changes far in advance," he says.

The future appears very bright for this technology, both at Atlanta, who is currently working to add it to its ATL SkyTrain people movers to its Rental Car Center and to other airports as well.

"It is a smart signage network that provides information to passengers relevant to the location of the train within the airport," V aughn says. "This technology has promising application for both inbound and outbound passengers. Inbound APM riders can be educated on the many options available at the airport and city—restaurants, rental cars, hotels, sightseeing. Airports with significant international traffic can display messaging in any language and any airport can customize welcome messages for special events such as sports or conventions. Outbound passengers benefit from very granular train arrival and departure info in order to get to their departure gates on time.

"And if passengers are early—which frequently happens these days—they are alerted to dining, shopping and other options available to them which usually involves spending money," he adds.

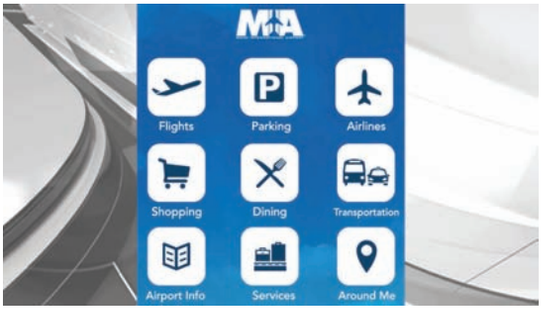
Smart signage technology is a win for the passengers who can find their way around the airport more readily, and a win for airports that can boost their revenues by having it.

# ADINDEX



# CLASSIFIEDADVERTISING

# FINALANALYSIS




## MIAMI INTERNATIONAL AIRPORT UNVEILS FREE MOBILE APP

*Miami International Airport's new free mobile app offers travelers a complete guide for parking, ground transportation, dining, shopping and flights. It's also bilingual with English and Spanish options. In September the airport installed more than 200 navigational beacons. In Version 2.0, the app will connect passengers to these beacons so that they can receive information from them on their smartphones. "Our passengers are more tech-oriented than ever before, and they rightfully expect airports to offer customer service amenities in the digital space," says Miami-Dade Aviation Director Emilio González. "The MIA mobile app is one way that we're meeting that demand, and it reflects our commitment to weaving technology and innovation into all that we do at MIA, particularly on the customer-facing side of the business."*

## 2,000

RECORD NUMBER OF FIREARMS SEIZED FROM CARRY-ON LUGGAGE BY THE TSA AS OF DECEMBER 1.

*"ALL THE LIGHT WE CANNOT SEE"*

—Hudson Booksellers' 2014 Book of the Year by Anthony Doerr

**PETER AARONS**
**New West Division aviation director and associate vice president, HNTB Corporation**

**MARV ESTERLY**
**Outgoing Director of Airports, City of Midland**

"Rolling back fees and reducing taxes on airline passengers benefits everyone—from helping families save money when traveling for the holidays to cutting costs for small businesses whose employees travel for work."

—REP. RICHARD HUDSON, R-N.C., ABOUT LEGISLATION THAT LIMITS SECURITY FEES ON AIRLINE TICKETS

"This does not mean that officers and agents are free to profile. To the contrary, DHS' existing policies make it categorically clear that profiling is prohibited, while allowing for limited circumstances in which race, ethnicity and other characteristics could be considered."

—STATEMENT BY DEPARTMENT OF HOMELAND SECURITY ON DECISION TO EXEMPT TSA AND DHS AGENTS FROM NEW RACIAL PROFILING GUIDELINES

## $11.20

**The amount security fees on airline tickets will be capped at under new legislation.**

## 71 MILLION

**The number of passengers Dubai International will have by the end of 2014, meaning it could overtake Heathrow as the world's busiest airport.**

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