

# airport business

*Delivering New Standards of Performance  
to Airport and FBO Management*

Huge

## Airport Savings

Huge

How London Heathrow Airport  
saved big by greening its  
operations Page 10

Exclusive  
Blogs  
Online  
Only

### EVENT MANAGEMENT

Sochi International Airport's  
Olympic Improvements Shine  
Gold Page 18

### FBO PROFILE

McKinney, Texas, Purchases Its  
Airport FBO Page 22

### RUNWAY MANAGEMENT

Boston Logan International  
Airport Automates FOD  
Detection Page 30



INTRODUCING THE ALL-NEW TRANSIT CONNECT

# THE NUMBERS DON'T LIE

1

## 1.6-LITER

### ECOBOOST® ENGINE

Our latest addition to the available EcoBoost line of proven engines has both best-in-class 178 horsepower\* as well as highway and combined fuel economy.\*\* If you have a **shuttle full of travelers** with flights to catch, you can whisk them to their terminals reliably and economically.



3

## BEST -IN- CLASS



### HWY FUEL ECONOMY

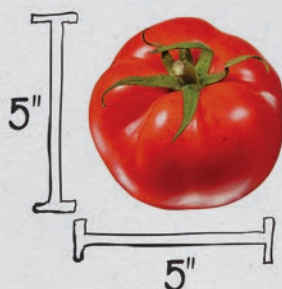
may save you money and time at the pump.

An **agricultural veterinarian** can tend patients from one end of the county to the other.



2

## 130.7 CU. FT. OF CARGO



**Got a load of heirloom tomatoes to deliver?**

The Transit Connect van can hold 8 more cubic feet of them than its closest competitor. That translates into roughly 120 more tomatoes per trip. And with a best-in-class payload rating of 1,710 lbs.,† those tomatoes can be really heavy.



\*Horsepower achieved using 93-octane premium fuel. Class is Small Cargo Vans. \*\*EPA-estimated rating of 22 city/29 hwy/25 combined mpg. Short wheelbase wagon. 1.6L EcoBoost. Actual mileage will vary. †When properly equipped. Class is Small Cargo Vans. ††Class is Small Cargo Vans. Available early 2014. ††Available 1.6L EcoBoost engine.





## 4 2 SLIDING DOORS



Easy in and out from either side. If you're **installing custom cabinets for urbanites**, you can spend less time in the van getting your tools and supplies and more time using them. You always have a door on the side with the best access to your job site too.

## INFINITE POSSIBILITIES

Outside, it's easy to wrap the Transit Connect any way you like to create your very own sleek, modern **mobile business card**. Inside, you can have your choice of the wagon, with the most seating configurations in its class.<sup>††</sup> Or choose the van, with cargo space that's easily customized to suit your unique needs and preferences, whether you're a **musician** with instruments and amps or a **fishing guide** with anglers and tackle.

## YOU OWN THE BUSINESS NOW OWN THE WORK

**SO DO THE MATH:** No two businesses are exactly alike, but the new Transit Connect with EcoBoost<sup>‡</sup> adds up for all of them with best-in-class horsepower\*

and the most configurations in its class<sup>††</sup> in a compact, nimble package. Throw in reliability that's earned the Built Ford Tough<sup>®</sup> badge, and you've found the van with all the answers.



THE 2014  
**TRANSIT  
CONNECT**







## COVER STORY

### 10 Huge Airport, Huge Savings

How London Heathrow Airport saved big by greening its operations

#### FEATURES

##### 14 Industry Insider: Lone Wolves: Coming to an Airport Near You?

Terrorism expert Jeffrey Simon shares his thoughts on lone wolf terrorism and the security vulnerabilities the LAX shooting exposed

##### 18 Event Management: AER's Olympic Olympiad

Long after the last Olympic skier hits the

slopes and the final skater takes to the ice, Sochi Airport's Olympic improvements will shine gold

##### 22 Managing Airports Today: When Airports Run It All

Why it made sense for the City of McKinney, Texas, to purchase the airport's only FBO

##### 26 Sustainability Report: Sustainability By the Air, Land and Sea

Steps toward greater sustainability continue to impact airports' bottom lines and environmental footprints

##### 30 Runway Management: FOD: Three Letters That Can Spell Big Problems

Boston Logan International Airport

becomes the first U.S. airport to adopt an automated FOD detection system

#### DEPARTMENTS

5 Inside the Fence

6 News

21 Ground Clutter

29 Legal Matters

34 Final Analysis



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Airport Business (USPS 001-614; ISSN 1072-1797 print; ISSN 2150-4539 online) is published 8 times per year in Feb/Mar, April, May, Jun/Jul, Aug/Sep, October, November and Dec/Jan 2014. Periodicals postage paid at Fort Atkinson, WI and additional entry offices. Change of address or subscription information: Toll Free: 877-382-9187, Local: 847-559-7598, Email: [circ.airportbusiness@omeda.com](mailto:circ.airportbusiness@omeda.com). POSTMASTER: Please send address changes to Airport Business, Cygnus Business Media, PO Box 3257, Northbrook, IL 60065-3257. Printed in the USA.

Canada Post PM40612608. Return Undeliverable Canadian Addresses to: Airport Business, PO Box 25542, London, ON N6C 6B2. Canadian GST #R42773848.

Vol. 28, No. 3 February/March 2014



## INSIDETHEFENCE

**Ronnie L. Garrett**  
Editor



# Happy Travels to You

*The passenger experience at today's airports is leaps and bounds beyond where it once was*

**L**ately I've been spending a lot of time in airports as I race from one convention or press event to another, and I confess that I'm not hating it. I'm a mother of five, and while only two still live at home, I do like the solitude I experience while traveling.

I know solitude is a strange word to use when one is talking about airports and air travel. But I'm not kidding when I say the passenger experience at today's airports is leaps and bounds beyond where it once was.

Are you a reader? Check out Philadelphia International Airport's Virtual Library Hot Spot, situated on a busy walkway between Terminals D and E. Here you can log onto the airport's free WiFi to access e-books and more.

Need to get some work done? I've found SeaTac International Airport's Quiet Zone, an area with plenty of seating, a big screen TV and power outlets, a pretty awesome place to pass the time.

At Minneapolis' Concourse G travelers can borrow iPads through a program started by OTG Management, an airport concessions firm based in New York City. Travelers waiting in airport lounges can borrow OTG's free iPads to surf the Internet; play games; or order food, beverages, and other last-minute concessions for walk-up delivery. Before I began traveling with an iPhone,

iPad, and laptop in tow, I found this feature pretty cool.

While I haven't checked it out personally, I hope someday to have an opportunity to visit San Francisco International Airport's yoga studio and Dallas/Fort Worth International Airport's nap-by-the-hour suites. Yes, a delay in these locations would be A-OK for this busy mom.

With these kinds of offerings springing up at airports across the country, it's not surprising that headlines are announcing an airport race to upgrade. Consider that:

- Charlotte Douglas International Airport is spending \$1 billion to renovate itself inside and out. This airport is adding pedestrian tunnels, automated passport kiosks, improving concessions and more.
- Dallas/Fort Worth is shelling out \$2.3 billion to renovate its terminal and improve baggage systems, concessions, and provide an in-house kennel for travelers' pets.
- Los Angeles International Airport's multi-billion-dollar modernization plan will upgrade its international terminal and Terminal 5, and improve escalators, elevators and moving walkways.

These projects, which include things like rocking chairs, atriums with pianos, upscale eateries and wine bars, make it fun to be a road warrior. But let's keep this on the down-low. We don't want my family thinking that I like business trips!



## MOM PUTS NUTS ON AIRLINES' RADAR

Some airlines serve peanuts as snacks, while others serve heated nuts to first-class passengers. And airlines have no control over passengers bringing nuts on-board. But this is a situation, Amy

Wicker hopes to remedy. Wicker, who has a 9-year-old daughter who can suffer a severe allergic reaction from exposure to airborne nut proteins, is leading a charge to remove peanuts and other nuts from airplanes. The Naperville, Ill., mom developed the website

AllergySafeTravel.com and produced a 6-minute documentary film, "More Than an Inconvenience," about nut allergies. She recently got a chance to make her case for flying nut-free to Airlines for America. Her presentation was well-received, but it remains to be seen whether carriers will take further steps to help. Wicker has scheduled follow-up calls with U.S. airlines to continue the discussion. Ultimately, she hopes Airlines for America issues recommendations for carriers regarding food allergies, but if that doesn't happen, Wicker will lobby for legislation banning nuts from planes.



## Jack Penning to Keynote AirIT's 2014 Annual User Conference & Symposium

Jack Penning, director of market analysis at Sixel Consulting Group, will be the keynote speaker at AirIT's 2014 Annual User Conference & Symposium held in Las Vegas, April 28-30.

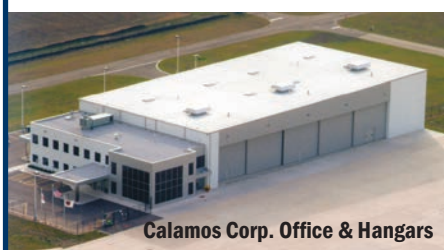
Penning joined Sixel Consulting Group in 2001 after making a name for himself as an aviation reporter in the Pacific Northwest for KGW-TV, the NBC affiliate in Portland, Ore., and Northwest Cable News, a 24-hour news channel covering five Northwest states. Penning, who heads Sixel's research and airline recruitment projects, has been instrumental in the growth of the firm. Among his responsibilities, Penning develops case studies for new air service, analyzes passenger trends, forecasts new service impacts, and builds community coalitions in support of new service.

Penning will address the symbiotic relationship between the need for cost-effective airport operations strategies, and airline cost and risk mitigation. His perspectives on how technology solutions are converging to support these associated business goals will provide intuitive content for AirIT's airport and airline partners. Penning will focus on the industry's ability to create operational efficiency and revenue generation by extracting value from organic airport data by seamlessly meshing robust business logic with a powerful airport intelligence platform.



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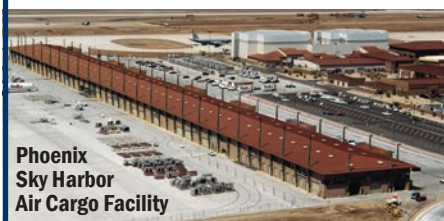
## AIRPORT INDUSTRY BUILDING SOLUTIONS



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Bohemian Air, Loveland, CO



Phoenix Sky Harbor Air Cargo Facility



VOLO Aviation, Stratford, CT

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## Top Airports for International Travel

According to the U.S. Department of Commerce's National Travel & Tourism Office, 185.4 million passengers arrived or departed from U.S. airports in 2013, marking a 4 percent increase over 2012. Those passengers flew through a few key airports, both domestic and abroad. Of the foreign airports funneling passengers in and out

of the United States, 10 of them were responsible for 40 percent of the traffic. London's Heathrow Airport was the undisputed leader, with more than 14 million passengers going to and from the United States. In the United States, JFK International Airport led the way with 26.66 million passengers going to and from the United States.

### Top 10 Foreign Airports

Rank	Airport	Passengers (millions)	% Change YoY
1.	London Heathrow (LHR)	14.357	2.1%
2.	Toronto (YYZ)	10.875	4.5%
3.	Tokyo Narita (NRT)	9.597	-0.1%
4.	Frankfurt (FRT)	6.695	1.9%
5.	Paris/de Gaulle (CDG)	6.383	4.7%
6.	Cancun (CUN)	6.176	7.3%
7.	Mexico City (MEX)	5.942	8.9%
8.	Incheon (ICT)	5.035	5.7%
9.	Amsterdam (AMS)	4.601	5.1%
10.	Vancouver (YVR)	4.440	0.4%

Source: The National Travel & Tourism Office

### Top 10 U.S. Airports

Rank	Airport	Passengers (millions)	% Change YoY
1.	New York (JFK)	26.662	5.4%
2.	Miami (MIA)	20.118	4.7%
3.	Los Angeles (LAX)	17.753	3.7%
4.	Newark (EWR)	11.587	1.1%
5.	Chicago (ORD)	11.183	5.1%
6.	Atlanta (ATL)	10.228	4.0%
7.	San Francisco (SFO)	9.698	3.7%
8.	Houston (IAH)	9.030	3.5%
9.	Washington Dulles (IAD)	6.931	4.2%
10.	Dallas-Ft Worth (DFW)	6.686	11.3%

Source: The National Travel & Tourism Office

#### ABRAHAM LINCOLN CAPITAL AIRPORT ...

Completed more than \$5.3 million in improvements in 2013, including taxiways, perimeter roadways, safety fencing, updates to terminal restrooms, overhead door replacements and the installation of a solar-thermal collection system.

#### AMERICAN AIRLINES AND US AIRWAYS ...

Expanded code-sharing to include nearly 6,500 daily flights to more than 275 destinations starting in February.

#### ATLANTIC ...

Acquires Galaxy Aviation FBO at St. Augustine's Northeast Florida Regional Airport. The sale is to be completed by the end of the first quarter.

#### AVIATION FACILITIES CO. INC ...

Assures nervous tenants and others that the stalled, \$166 million runway expansion at Gary/Chicago International Airport will get a renewed push as the new private operator takes over.

#### CHATTANOOGA AIRPORT ...

Buys out competitor TAC Air for \$12.37 million.

#### CHICAGO DEPARTMENT OF AVIATION...

Received a 2014 "Honor Award" from the American Council of Engineering Companies of Illinois for its improvements to Runway 10C-28C at O'Hare International Airport.

#### CLEVELAND HOPKINS INTERNATIONAL AIRPORT ...

Opens a new and discrete security lane for pilots and flight crews as part of the Known Crewmember Program.

#### COLORADO SPRINGS AIRPORT ...

Installs amnesty boxes where passengers who accidentally bring pot into the airport can surrender it without facing fines of up to \$2,500 or even jail time if caught with the controlled substance.



# INDUSTRY NEWS

## **DELTA AIR LINES ...**

Names Wayne Gilbert "Gil" West as executive vice president and COO, effective March 1. West succeeds Stephen Gorman.

## **DENVER INTERNATIONAL AIRPORT ...**

Sets a zero-tolerance policy for travelers carrying marijuana into the airport.

## **EPIC ...**

And U.S. Bank Multi Service Aviation introduce the EPIC/Multi Service Aviation co-brand card with enhanced functionality and global acceptance.

## **FAA ...**

Announces plans to inspect control towers nationwide after a lightning strike injured an air traffic controller at Baltimore Washington International Airport, exposing potential vulnerability in airport towers during storms.

## **FLTPLAN.COM ...**

Releases its FltPlan Go iPad app, available through the Apple App Store. The new app uses the same flight-planning data found on the company's website.

## **HILLSBOROUGH COUNTY AVIATION AUTHORITY BOARD ...**

Approved a 2014 capital budget amendment to spend \$928 million on projects implementing the first phase of the airport's master plan. First phase projects include a \$417.5 million automated people mover leading from the main terminal to a \$318.7 million consolidated rental car center, a \$122.5 million main terminal expansion, and other roadway and facility improvements at Tampa International Airport.

## **HNTB CORPORATION ...**

Submits the final design for runway safety area improvements for Runway 7L-25R at Los Angeles International Airport. The project has been advertised for bid by potential contractors with construction anticipated to start in April 2014 and last 16 months.

## **IATA ...**

Reports airlines expect passenger and cargo growth in 2014, reflecting improvements in world trade growth and business confidence.

## **LOCAL 32BJ OF THE SERVICE EMPLOYEES INTERNATIONAL UNION ...**

Forms coalition of baggage handlers, cabin cleaners; civil rights and labor leaders; and local,

state and federal elected officials; to ask Gov. Chris Christie to require a minimum wage of \$10.10 an hour for workers at Newark Liberty International Airport.

## **MCLELLAN-PALOMAR AIRPORT ...**

Reports county officials are moving forward with a proposal to extend its runway by more than 18 percent, from 4,879 feet to 5,797 feet.

## **Galaxy FBO Opens New Facility at Lone Star Executive Airport**

Galaxy FBO's new state-of-the-art Phillips 66 FBO operation, corporate and general aviation facility at Lone Star Executive Airport in Conroe, Texas, is now fully operational.

"The Galaxy FBO development ushers in a new chapter in continuing improvements at the airport. As the first major development on the airport's southeast side, it also opens the door for future expansion," says Scott Smith, manager, Lone Star Executive Airport. "With the extension of the primary runway to 7,500 feet; the construction of a U.S. Customs facility; and the addition to our FBO family; the airport is better positioned to meet the rising needs of general aviation in the North Houston, The Woodlands and Conroe areas."

The 45,000 square-foot facility occupies 15 acres at the end of Runway 14-32. The three-story facility includes two 50,000 square-foot hangars, a 168-foot by 101-foot long arrival and departure canopy, 45,000 square-yards of apron/ramp space with three-point, concrete-embedded tie downs. The new hangars provide adequate space for approximately 38,000 square feet of aircraft storage, with 28 feet of door clearance height. Each hangar has more than 12,000 square-feet of additional space for parking, tug storage and other aircraft-related equipment.

Galaxy operates out of the first floor of the three-story building, and its amenities include pilot and VIP lounges, conferences and offices. Wing Aviation, a regional private aircraft management and Part 135 charter services company, leases space on the second floor for its North Houston operations. The third floor of the building features the Black Walnut Café restaurant. The fast-casual counter-service concept has seating for 120 inside and offers a 36-seat, 1,500 square-foot patio that overlooks the apron and the Runway 14-32.

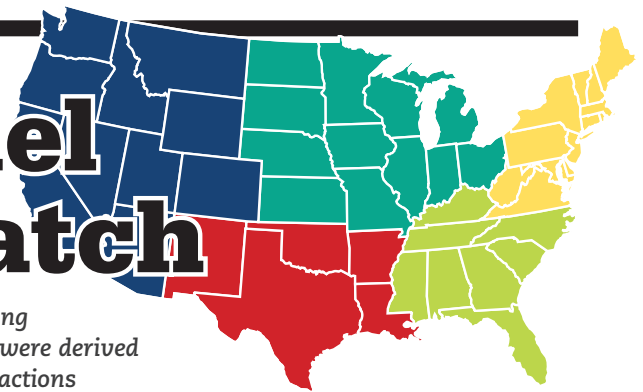
"The new facility will allow us to efficiently grow our business as we improve service levels to exceed customer expectations," says Jeremy Gee, vice president of Galaxy FBO.





## Fuel Watch

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



### West Coast

Jet-A: \$5.31  
Avgas: \$5.72

### South Central

Jet-A: \$4.80  
Avgas: \$5.68

### Southeast

Jet-A: \$5.10  
Avgas: \$5.76

### North Central

Jet-A: \$5.13  
Avgas: \$5.81

### Northeast

Jet-A: \$5.16  
Avgas: \$6.04

## GUNS GALORE:

### TSA Announces Top 10 Airports for Gun Interceptions

- 1) Hartsfield-Jackson International Airport, **111 guns**
- 2) Dallas-Fort Worth International Airport, **96 guns**
- 3) George Bush Intercontinental Airport, **68 guns**
- 4) Phoenix Sky Harbor International Airport, **66 guns**
- 5) Denver International Airport, **51 guns**
- 6) Sea-Tac Airport, **49 guns**
- 7 & 8) Orlando International Airport and Nashville International Airport, **47 guns**
- 9) Fort Lauderdale-Hollywood International Airport, **45 guns**
- 10) McCarran International Airport, **39 guns**.



### PHILLIPS 66 AVIATION ...

Names Dennis Stafford as national account rep for branded aviation sales, supporting the company's network of branded FBOs.

### PORT AUTHORITY OF NEW YORK AND NEW JERSEY ...

Unveils a \$27.6 billion, 10-year proposed capital improvement plan that includes \$8 billion for the region's airports. Projects include redevelopment of New York LaGuardia's Central Terminal Building and Newark Liberty International's Terminal A. Stewart International is budgeted for a \$71 million project to rehabilitate Runways 9-27 and 16-34.

### ONTARIO ...

Moves forward with its lawsuit seeking control of LA/Ontario International Airport after the city and Los Angeles were unable to reach an agreement.

### ORLANDO INTERNATIONAL AIRPORT ...

Installs self-service biometric kiosks for use by travelers, who have Electronic System for Travel Authorization approval prior to travel from visa waiver countries, to expedite their arrival experience. The kiosks allow international travelers to complete their customs declaration form on-screen.

### PHILADELPHIA INTERNATIONAL AIRPORT ...

Partners with the Free Library of Philadelphia to bring the library's electronic resources to airport customers in a Virtual Library Hot Spot on the D/E Connector. Customers can log on to the airport's free WiFi to access the Library's e-books, nearly 1,200 author podcasts, and other digital content.

### PITTSFIELD MUNICIPAL AIRPORT ...

Officially opens its \$22.5 million, extended Runway 8-26, marking the completion of one of the largest general aviation airport improvement projects in western Massachusetts in decades.

### OAKLAND INTERNATIONAL AIRPORT ...

Renews its service contract with ServiceTec International Inc. to provide on-site IT services at the airport.

### RALEIGH-DURHAM INTERNATIONAL AIRPORT ...

Opens its newly renovated Terminal 1 on March 2. The \$68 million renovation provides 166,000 square-feet for Southwest Airlines.

### SAN DIEGO INTERNATIONAL AIRPORT ...

Handled more than 627,000 passengers on

international flights in 2013—a 21.5 percent increase in 2012. In all, 17.7 million domestic and international passengers used Lindbergh Field in 2013.

### SIXEL CONSULTING GROUP ...

Hires Katie Jones to provide marketing and community outreach services to the company's West Coast clients.

### SOUTHWEST AIRLINES AND JETBLUE AIRWAYS ...

Bought the takeoff and landing rights at Ronald Reagan National Airport that the U.S. Justice Department required American Airlines and US Airways to sell as a condition of their merger.

### UNITED AIRLINES ...

Introduces eco-friendly coffee cups to its United Club beverage service and on United flights.

### VIRGIN ATLANTIC ...

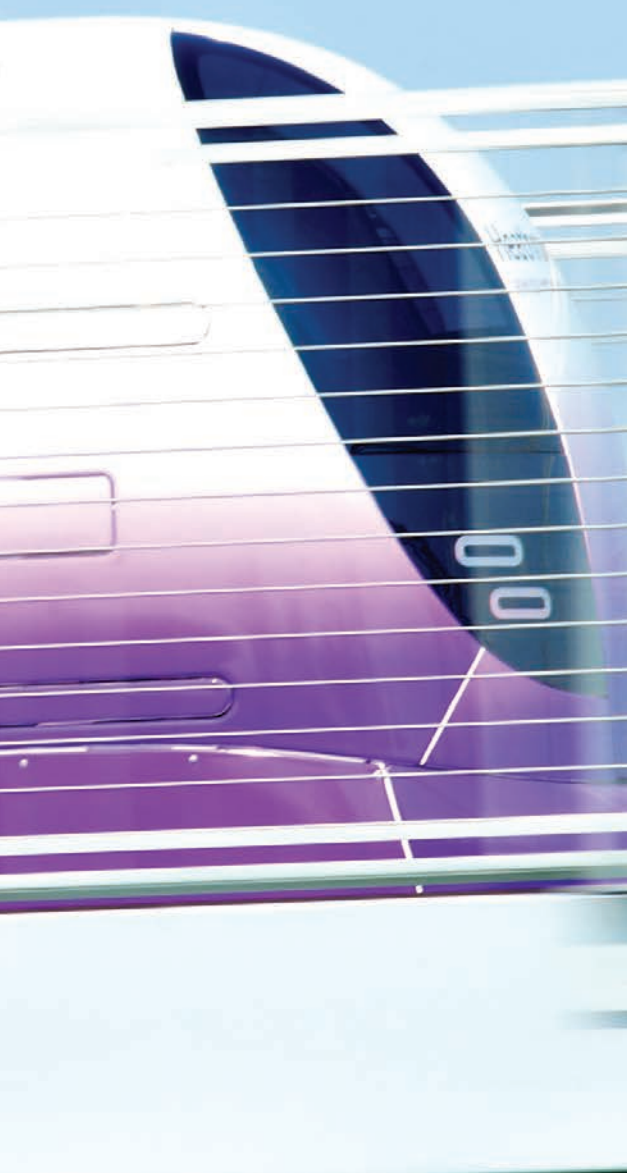
Announces passengers will experience the benefits of Google Glass and Sony Smartwatch technology when they arrive at London Heathrow airport. Concierge staff in the airline's Upper Class Wing will begin using wearable technology to deliver high-tech and personalized customer service.

**Huge**

# Airport, **Huge** Savings

*How London Heathrow Airport saved big  
by greening its operations*





**I**t's safe to say that an airport, a mammoth of glass, steel and concrete with constant streams of traffic flowing in and out of its entrances, exits and gates, chews through energy faster than a child inhales Halloween candy. But that's not the case at London Heathrow Airport where officials strive to green operations by addressing noise, climate change and air quality in everything they do.

Nestled in a city once nicknamed the Big Smoke for its air pollution, this bustling airport has been charged with moving more than 70 million passengers per year in the most sustainable way possible. It's a societal directive Heathrow Sustainability Director Matt Gorman puts at the forefront of everything he does.

"Society's expectations are rising: Environmental policies are demanding more, our people want to know that we are responsible, and our local neighbors are scrutinizing how we're doing," he explains. "Meeting those expectations through a clear sustainability strategy is important for our 'license to operate' as a business."

Gorman considers working with airlines to encourage the use of cleaner, quieter aircraft; creating an efficient low-carbon energy network within airport walls; and improving the efficiency of ground operations and other essential components as essential in meeting heightened demands for greener airports.

"Running our airport sustainably—enhancing our social and economic benefits and managing our negative environmental impacts—is key," he says, if the airport is to achieve its goal of being "the UK's direct connection to the world as Europe's hub of choice."

Heathrow's steps to sustainability have paid off in spades in the form of energy savings, reduced carbon emissions and increased community support. Most recently the International Green Apple Awards for Environmental Best Practice and Sustainable Development recognized Heathrow's sustainability achievements when it named the European hub "Champion of Champions" in the sustainability world.

The awards presented by The Green Organization identify and recognize best practices in sustainability. Heathrow earned a Gold award for its:

- ✓ Pods, low-energy driverless vehicles that produce no emissions;
- ✓ Carbon reduction strategies, including

## SUSTAINABILITY SCORECARD

- ✓ Each vehicle in the airport's \$49.9 million Personal Rapid Transport system consumes 70 percent less energy than a car and 50 percent less energy than a bus.
- ✓ LED lighting with automatic lighting controls cut the facility's lighting costs by 70 percent and reduced maintenance needs by 80 percent.
- ✓ Energy-efficient HVAC systems, lighting, motor controls on escalators, baggage carousals and other systems saves 16.2 million kWh and reduces CO2 emissions by 8,500 tons.
- ✓ In full operation, the \$56.5 million Heathrow Energy Center will reduce CO2 emissions by 13,000 tons a year—the equivalent of the CO2 produced by 6,500 automobiles.
- ✓ 570 Heathrow employees bike to work every day. Many of the rest ride share on their commute.
- ✓ Recycles 100 percent of concessionaires waste cooking oil, 85 percent of which is converted into biodiesel for use by two minicab firms operating at the airport.

projects that slash energy consumption;

- ✓ Renewable energy use at its new Energy Center; and

- ✓ Sustainable transport, which ensures no more than 65 percent of Heathrow's staff commutes in a single-occupied car each day.

Gorman considers the honors yet another feather in the airport's green cap. "We are committed to running responsibly and are delighted to have been recognized for our achievements thus far," he says. "We will continue to work with stakeholders, employees and passengers to improve and build upon this success."

## PEOPLE PODS

Heathrow launched a \$48.8 million network of Personal Rapid Transport (PRT) systems in 2011. Every one of these battery-powered, driverless, zero-emission transport vehicles, known as pods, carries up to four passengers and their luggage along a dedicated 2+ miles of track between Heathrow Terminal 5 and its business car parks.

Gorman says adding this transit mode made perfect sustainability sense. With almost 200,000 passengers and 76,500 employees moving around the airport daily, a seemingly simple journey between the car park and the terminals presents travelers with real challenges and threatened to derail the passenger experience.

"We sought to develop an innovative product to offer congestion-free public transport that provided fast, comfortable transportation that was both environmentally friendly and operationally efficient," he says.

Passengers consistently give the new transit mode high marks; not surprising given that the pods boast a 99 percent reliability rate, and keep passengers waiting no more 10 to 15 seconds. The pods also consume 70 percent less energy than it takes to power a car and 50 percent less than a bus.

"The pod is one of the most environmentally friendly transport options [available] for airports," says Gorman. "This efficient passenger service reduces an airport's environmental footprint through energy efficiency, reduced emissions and silent vehicles."

## EASE CARBON EMISSIONS

More than 320 companies operate at Heathrow, generating waste and emitting carbon, making it critical for airport officials to keep a close eye on its environmental footprint.

Heathrow officials set out to cut carbon emissions by 34 percent compared to 1990 levels by 2020. The airport invested \$7.32 million in Energy Demand Management (EDM) projects over the past four years. Though this commitment involved a sizable sum, the improvements conserved cash as well. "We use less energy and cut carbon emissions," says Gorman. "One great example is the installation of LED lighting. The technology has now evolved to the point that the lower cost of running and maintaining LEDs offsets the upfront costs."

Heathrow has added Low Energy/Low Maintenance LED lighting where appropriate. These systems rely on automatic lighting controls that only switch on when necessary. This measure trims energy consumption and saves money, with an average annual savings of up to 70 percent. It also reduces maintenance needs by 80 percent and enables the airport to use natural light more effectively.

LED lighting, however, is just one of many energy savings projects at Heathrow. Upgrading heating, ventilation and air-conditioning systems; adding energy efficient lighting and controls; and installing a range of automated motor controls for escalators and other systems

are among the projects expected to deliver an annual savings of 16.2 million kWh and more than 8,500 tons of CO<sub>2</sub> emissions, Gorman says.

## EYE ON ENERGY

The \$55.33 million Heathrow Airport Energy Center marks the first phase of a major energy infrastructure project that currently provides low carbon heat and power to Heathrow Terminal 5 and will do the same for Terminal 2 when it opens in June.

The energy center includes a new boiler plant; a biomass combined cooling, heat and power (CCHP) installation; and an Organic Rankine Cycle engine (ORC) generating electricity, which is fed into the airport grid. The facility provides renewable heat and power and builds the latest biomass-fueled CHP technology into the airport's day-to-day operations. To meet its goal of using 20 percent renewable energy to power the airport's new terminal, the airport will need to bring in nearly 25,000 tons of woodchips annually.

The Energy Center pushes Heathrow one step closer to its CO<sub>2</sub> reduction plans. In full operation, the center will offset approximately 40,000 MWh/year of gas and 12,000 MWh/year of electricity, saving around 13,000 tons of CO<sub>2</sub> a



*When fully operational, Heathrow's Energy Center, which will provide low carbon heat and power to both Terminal 2 and Terminal 5, will offset approximately 40,000 MWh/year of gas and 12,000 MWh/year of electricity.*



# MATT GORMAN TALKS TRASH LONDON

Heathrow Airport generates approximately 110,000 tons of waste each year. That's a lot of trash. But as airport officials work toward their goal of keeping most waste out of the landfill and recycling up to 70 percent of it by 2020, they have learned more than a few lessons along the way. Heathrow Sustainability Director Matt Gorman offers a few tried and true tips from the trash removal trenches.

**Watch Your Waste.** The first step in managing waste, says Gorman, is to understand what you are dealing with in the first place. In 2013, Heathrow carried out a pioneering waste analysis, which analyzed more than 100 tons of waste. The study helped airport officials uncover better ways of working with other airport-based waste producers, and set a benchmark for similar industries. They learned where waste was generated and revealed areas where the airport could stop waste or add recycling.

**Set Up Segregation.** Heathrow increased recycling by segregating waste at the source to make recycling easier and less expensive. The airport worked closely with its partners in the terminals, retailers and facilities companies on a number of initiatives, and increased recycling in terminals by 16 percent in just six months in 2012. "We have continued this progress," says Gorman. "In 2013 we recycled more of our waste than we ever have. The food waste we collect is sent to anaerobic digestion to be made into soil conditioner—the heat from this is then converted into energy to power the plant."

**Promote Participation:** Engage with employees and passengers to encourage everyone to recycle and think before they throw something away. "If it can be recycled, we encourage this through clear signage, labeling and in the case of staff—education," says Gorman. "If it can't be recycled, then we encourage people not to put it in the recycling bin and contaminate the recycling."



*The number of employees bicycling to work increased by 45 percent since Heathrow added a cycle hub where employees can purchase cycling supplies, get bikes repaired, and hone their bicycling skills.*

year. "That's equivalent to the annual emissions of 6,500 passenger cars," Gorman says.

## CUT COMMUTES

Heathrow has a strong track record in sustainable transport, and even has a dedicated commuter team that markets and promotes sustainable travel choices to staff through PR campaigns, road shows and a commuter center.

"The value of constantly communicating about sustainable travel cannot be underestimated," says Gorman. "Car sharing along with discounted travel and The Heathrow Cycle Hub have helped us reduce single occupancy car use from 71 percent in 2008 to 59 percent in 2011. The initial target was to have no more than 65 percent of Heathrow staff commuting daily in a single-occupied car and we have achieved a greater reduction than that."

Heathrow built relationships with the airlines, local authorities, and bus and rail operators to

develop and deliver a suite of sustainable travel options. As a result, Heathrow operates the:

- ✓ Only airport cycle hub in the UK. This hub gives employees ready access to a bike shop. Participating employees receive free membership and a 10 percent discount on bicycle products, and free bike servicing, maintenance classes and bike ability training. There's also an emergency call-out available for anybody who has a breakdown in the airport.

- ✓ Largest single-site car share scheme in the world. The Heathrow Car Share program has operated since 2002 and is available to all employees. To date, there are 8,100 employees from more than 250 companies as members. To use, employees register their journey, and the system looks for matches around the area as well as matches for a pickup en route. Staff can contact the person they wish to car share with through the portal and make travel arrangements.

- ✓ A free travel zone that includes a compre-

hensive bus network with 31 local bus services and 13 early morning bus services.

"We've found the key to encouraging participation [in these programs] lies in a number of factors, including achieving the right mix of people, so that those using the [car sharing] scheme have similar roles, shift patterns and work in the same building," says Gorman. "Incentives are also key. Our car sharers have preferential parking bays closest to their place of work, and an emergency ride home program in case their ride is called away."

All of these programs add up to one thing: Mammoth operations do not need to equal mammoth energy use. As Heathrow has found, airports that eye environmental improvements get high marks on their sustainability scorecard along the way.



# Lone Wolves: Coming to an Airport Near You?

*The LAX shooting cast attention on a growing threat. Renowned terrorism expert Jeffrey Simon shares his thoughts on lone wolf terrorism and the security vulnerabilities this incident exposed*

**D**etails continue to emerge about the gunman who opened fire in Los Angeles International Airport (LAX) last fall, killing a security screener and wounding three others. One of the more shocking is the fact that two armed officers assigned to the area allegedly left for breaks right before the shooting without informing a dispatcher as required. Because of their actions, police did not arrive until after an airline contractor reportedly called a police dispatcher who alerted officers over the radio.

*If a lone wolf terrorist looked like a threat, he or she would be easier to spot. More often than not, they look no different than anyone else, says terrorism expert Jeffrey Simon.*



The actions of the armed guards, the vulnerability of airport security systems, the arming of TSA agents, and the increasing threat posed by lone wolf terrorists are all things being debated by the media in the aftermath of this horrible tragedy.

*Airport Business* recently caught up with Jeffrey Simon, an internationally renowned terrorism expert and author of “Lone Wolf Terrorism: Understanding the Growing Threat,” for his insight on lone wolf shooters, airport security, and what needs to happen now.

## WHY HAS THE LAX SHOOTER BEEN DESCRIBED AS A LONE WOLF TERRORIST?

A lone wolf terrorist is an individual who is working alone, or sometimes with another person, but is not part of an organized terrorist cell. Because they are not part of a group, they are free to think up a violent scenario then

act upon it, that’s what makes them so creative—and dangerous. Some examples of lone wolf terrorists are Nidal Malik Hasan, the shooter at Fort Hood, and the Tsarnaev brothers, who did the Boston bombing. These individuals did not have any connection with extremist groups.

In the LAX attack, there is some debate as to whether to call the shooter a politically motivated terrorist or an emotionally disturbed individual. However, Paul Anthony Ciancia did have a gripe against the TSA and targeted TSA agents. Based on that, I would call it a lone wolf terrorist attack.

## WHY DO LONE WOLF TERRORISTS TAKE THE ACTIONS THEY DO?

Normally the definition of terrorism is a violent act committed by two individuals for a political purpose or religious motivation. But in the case of the lone wolf, I don’t believe you always have political or religious motivation. We have seen lone wolves who have these motivations, but

sometimes just a criminal motivation can still qualify as a lone wolf attack.

## HOW MUCH OF A THREAT DO LONE WOLF TERRORISTS POSE?

I see the lone wolf as a very serious threat because the lone wolf is not accountable to anybody but himself. In groups such as Al-Qaeda, you have a group decision-making process going on. Somebody may come up with an idea and it may be shot down. But with lone wolves, if they feel they are capable of doing something, they will just do it.

## ARE THERE AIRPORT SECURITY ISSUES THAT REMAIN AS THEY PERTAIN TO THE LONE WOLF?

Part of the problem is that lone wolves, because they are not working as a group, can blend in with others and there may be no way to distinguish between them and nonviolent passengers. What the LAX shooting demonstrated is the worst nightmare of all security planners—

## ON WHAT IS A LONE WOLF TERRORIST...

A lone wolf terrorist is an individual who is working alone, or sometimes with another person, but is not part of an organized terrorist cell.

## ON WHETHER THE LAX SHOOTER COULD BE DEFINED AS A LONE WOLF...

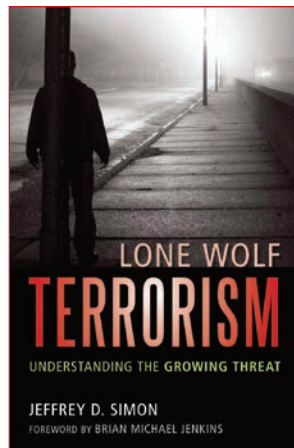
Paul Anthony Ciancia did have a gripe against the TSA and targeted TSA agents. Based on that, I would call it a lone wolf terrorist attack.

## ON WHETHER TSA AGENTS SHOULD BE ARMED...

A better solution might be adding more uniformed police or undercover agents.

# LONE WOLF TERRORISM: UNDERSTANDING THE GROWING THREAT A NEW ERA

in terrorism is emerging and the lone wolf is at the forefront. From Anders Breivik in Norway, who murdered scores of young people in a bombing and mass-shooting attack, to Nidal Malik Hasan in the United States, who killed many of his fellow soldiers after opening fire at a military base, lone wolves have demonstrated they can be as dangerous as organized terrorist groups. The text of this book, by Jeffrey Simon, examines who these terrorists are and what can be done about them.



“We get so used to looking at terrorism in organized threats that until recently we have under-estimated what the individual terrorist can accomplish,” Simon says. “Most of the major incidents we’ve seen in recent years have been perpetrated by lone wolves. We are living in a vulnerable society that’s tailor-made to individuals who want to perpetrate violent attacks. “In the book, I set up different strategies, both preventive and responsive, ranging from improved detection devices, biometrics, monitoring the Internet while protecting individual civil liberties, and the responses of law enforcement,” Simon adds.

“*Lone Wolf Terrorism: Understanding the Growing Threat*” is available at [amazon.com](http://amazon.com)



Jeffrey Simon

a violent attack in an unsecured area. Some have suggested that there needs to be security checkpoints as people enter airport lobbies, but in airports, such as Los Angeles, that's really impractical. You would create tremendous traffic jams going up to the airport's entry point, and would create vulnerable areas as people wait to check in. Pushing out the security still leaves vulnerable areas for passengers.

CCTV cameras are very important, but then again you have to be able to determine whether or not somebody is walking through the lobby with violent intent. How do you do that? There is research being conducted in order to automate CCTV cameras with smart sensors that are able to pick up unusual activity and can determine when something is suspicious ... maybe even using biometrics that perform gait analysis. If somebody is carrying a bomb, do they walk differently? There is a lot of research being done in that area.

In addition to adding improved CCTV cameras and sensors, there should be a greater law enforcement and security presence. Nobody wants to see too many police in an airport, but people also feel more secure when they do. In the LAX attack, Ciancia was able to walk in without anyone noticing anything, walk straight up to the TSA agent, and start shooting. That is something that needs to be addressed.

## DO YOU FEEL ARMING TSA AGENTS IS A POTENTIAL SOLUTION?

It's always problematic when you introduce more firearms to security personnel at the airport. A better solution might be adding more uniformed police or undercover agents. If Ciancia had walked in and there had been armed police milling around would he have been deterred from the attack? Would police have gotten suspicious? Nobody really knows how many security personnel you need patrolling

an area, but ... the larger the police presence, the more it would help deter would-be violent criminals.

## WHAT ADVICE WOULD YOU GIVE TO AIRPORTS?

Whether it's a lone wolf or a terrorist group, airport security is a never-ending technological battle. You need to always try to stay one step ahead of the terrorist. As much as you improve your security, there are terrorists trying to think up ways to overcome that. Also, we can't expect to be 100 percent successful in preventing terrorist attacks at airports or elsewhere but our goal should always be to both reduce uncertainty and reduce the risk to passengers and airport workers by trying to prevent these attacks. Unless you're going to have a fortress America, unfortunately, there will always be a risk for terrorist attacks, including those at airports.



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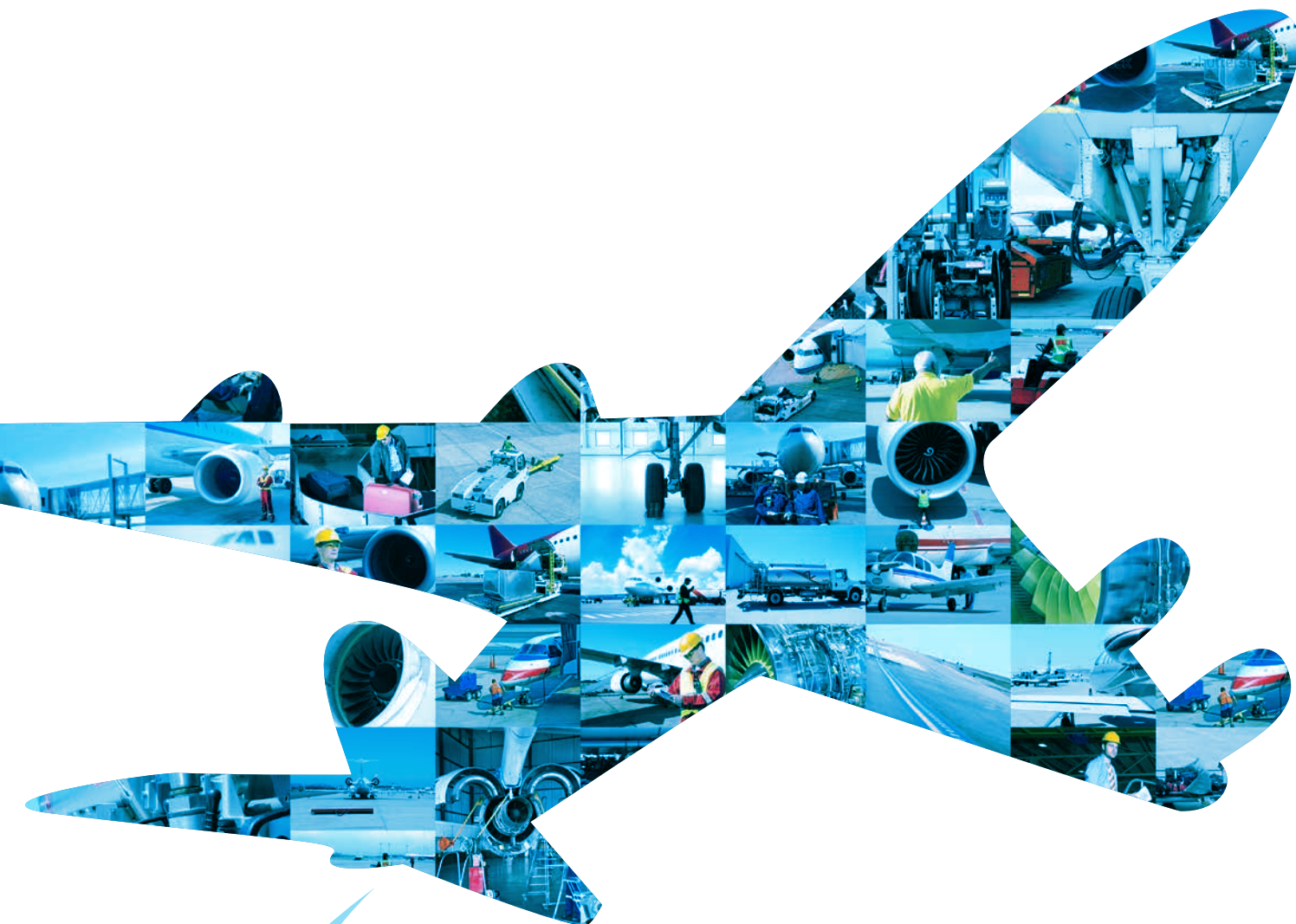
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# AER's Olympic Olympiad

*Long after the last Olympic skier hits the slopes and the final skater takes to the ice, Sochi International Airport's Olympic improvements will shine gold*





**T**he Olympic rings have stood outside of Sochi International Airport (AER) for mere months, but this Russian aviation hub trained for this moment for years.

The region spent an estimated \$50 billion upgrading its infrastructure, including the airport, ahead of the Games, making it the most expensive in Olympic history. Airport operator, Basel Aero, invested close to \$450 million on a new 43,000-square-foot, solar-powered terminal and other needed improvements.

"Sochi International Airport has upped its game, providing speedy access to Moscow from the Games sites, and between sea and mountain locations, in order to attract more spectators," reported Kevan Gosper, chief of the press commission for the International Olympic Committee (IOC).

### SYSTEM, PROCESSES AND PEOPLE

"In 2007, when Russia won a bid to host the 2014 Olympic Winter Games in Sochi, Basel Aero faced a tremendously challenging and interesting task of turning a Soviet-style regional airport into one-of-a-kind modern facility," says Leonid Sergeev, CEO of Basel Aero, a firm that manages and oversees the airports of Sochi, Krasnodar, Gelendzhik and Anapa. "We had to ask ourselves how we could create an efficient and customer-friendly airport that would reflect Sochi's image as a modern Olympic host city."

Ultimately Basel Aero decided to take a

system approach and divide the airport, which currently serves approximately 2 million passengers per year, into three forming pillars: System, processes and people.

All static elements, including the building itself and other airport facilities, are considered the "system." Here, the airport fully revamped the airstrip, taxiways and other airside facilities, and upgraded the terminal. In 2010, the airport opened a newly built international terminal.

Developers split processes into four sectors according to client groups: Regular passengers, athletes, business people using private aviation and government officials.

Their next step was to test these sectors to determine what was needed. "Summer and winter tourist seasons were ideal times to test airport operations ... these tests gave us tremendous feedback on what we should improve in serving athletes," says Sergeev. "The International Investment Forum held in September helped us adjust business aviation services. And, by serving the state leaders and government officials who regularly visit Sochi, Basel Aero gained experience serving top guests."

Preparations also included establishing an Olympic airport control center, a closed-loop system that integrates operations in Sochi, Krasnodar and Anapa airports. Information from this center is available to these airports and state bodies in real time.

People were the last component considered. Basel Aero plans to double its 1,000-member team, bringing in staff from other Russian airports, during the Games. And because the airport will turn into a multi-lingual melting pot during the Olympics, the company ensured every team member could speak English in order to properly serve passengers.

### SYSTEM SETUPS

Basel Aero pulled out all the stops to ensure smooth sailing during the arrivals and

## EQUIPMENT ENHANCEMENTS

**THE** following companies provided equipment upgrades and new technology as part of Sochi International Airport's Olympic updates.

- **Security:** Electronika, [www.electronika.ru/en/](http://www.electronika.ru/en/)
- **Baggage Screening:** Rapiscan, [www.rapiscansystems.com/](http://www.rapiscansystems.com/)
- **Baggage Handling:** Van Der Lande, [www.vanderlande.com](http://www.vanderlande.com)
- **Check-Ins:** NKL Group, [www.nkigroup.com](http://www.nkigroup.com)

departures of the Games' 6,000 participants and their guests. An advanced 1,476-foot-long boarding gallery with 10 boarding bridges gives customers comfortable access to aircraft.

"For an airport of this size, three or five telebridges would be enough but we took into account a tight flight schedule during the Games and increased the number of telebridges to 10," Sergeev says.

Today the airport offers a revamped VIP Terminal for IOC delegates and other high-profile guests. This terminal is capable of handling 85 passengers per hour, and boasts five conference rooms, a computer workroom, a 56-seat common area with catering service, a 35-car parking lot, a dedicated entrance/exit road and a site for motorcades. A 12-stand ramp for business jets sits adjacent to the terminal.

"All preflight procedures are available in the VIP Terminal, including check-in and security," Sergeev says. "We tested the terminal during the International Investment Forum. Everything went smoothly but we still made final adjustments to ensure the facility perfectly fit the needs of our Olympic guests."

The VIP Terminal will see use long after the athletes compete as Sochi's reputation as a hot tourist spot continues to grow. "The area's mountainous and seaside resorts draw a significant number of private jets," Sergeev explains. "A revamp of the VIP Terminal was only a matter of time. Now that it's upgraded, we're confident we can serve upcoming high-profile events."

The airport also followed examples set by other Olympic host airports and opened a specially designed temporary Games Terminal to serve athletes and organized fan groups. This 27,986-square-foot facility can handle 420 passengers per hour to help divert thousands of people from the airport's main terminal. It also significantly relieves the main baggage system because athletes receive their luggage in the Games Terminal.

"This terminal can also serve regular passengers during peak hours," Sergeev says. "And, in adverse weather conditions, we have contingency airports in Krasnodar and Anapa, around 300 miles away from Sochi, at the ready to serve Olympics-bound aircraft."

## AN EYE ON OPERATIONS

Focusing on airport operations also ensures smooth arrivals and departures, according to

Sergeev. The airport is now divided into three sectors to optimize passenger flow. Sector A serves Aeroflot and S7 airlines, while sectors B and C handle other domestic carriers and international airlines respectively. The entrances and exits from the airport building are separated while public transport stops and a taxi parking area are located in front.

Sochi Airport also installed new check-in technology. Today, the airport boasts 19 state-of-the-art check-in counters produced and supplied by Dutch-based NKI Group; 10 self-check-in terminals; and mobile check-in desks where passengers can print out boarding passes using smartphones.

"We have optimized the time for passenger check in," says Sergeev. "Now it takes just 45 seconds to check in an economy class passenger while waiting time for check in does not exceed 15 minutes. We closely monitor daily operations and see that this timing is adhered to in 95 percent of the cases."

Baggage handling also received a tune-up. The airport added a three-level baggage check system by UK-based, Rapiscan, which has a handling capacity of up to 7,000 units per hour. Baggage handlers utilize Van Der Lande equipment.

"One of the biggest concerns expressed by future guests of the Games was luggage handling," Sergeev says. "We tried various technologies and processes to achieve the fastest possible results." Today the first luggage placed is claimed within 15 minutes while the last one goes up to 25 minutes 93 percent of the time.

## SUPER SECURITY

As public concerns rose over potential security threats at the Games, Basel Aero put the final touches on a beefed up security system designed to keep everyone safe. Sergeev says the airport made passenger security a priority, and doubled the amount of security equipment and staff prior to the Games.

Security preparations began as far back as 2011, when Basel Aero entered a partnership with Elektronika, a Yaroslavl-based company and leader in development of integrated security systems in Russia. In July 2013, Elektronika installed a new security system, which Sergeev says enables security officials to "monitor security conditions 24/7, proactively spot suspicious situations, and react in a timely manner."

**"Sochi International Airport has upped its game, providing speedy access to Moscow from the Games sites, and between sea and mountain locations, in order to attract more spectators."**

**KEVAN GOSPER, CHIEF OF THE PRESS COMMISSION, INTERNATIONAL OLYMPIC COMMITTEE (IOC)**

During the Olympics, Basel Aero plans to bring in additional security staff, primarily cadets from Russia's Ulyanovsk Higher Civil Aviation School; experienced security specialists from Moscow-based AeroMASH-Aviation Security, a leading Russian provider of aviation security services; as well as from other Russian airports.

## A BETTER TOMORROW

Today the airport stands flamboyantly dressed for the Games, with banners sprinkled in Russia's traditional patchwork of patterns and colors stretched across the terminal. But long after these banners come down and their colors fade, the vast improvements made to Sochi International Airport will stand tall, forming a lasting legacy as a gateway for some of the world's top political and sporting events.

In June, Sochi will host the 40<sup>th</sup> Annual G8 Summit, which will be followed by the annual International Investment Forum in September and the Formula-1 Grand Prix race in October. A stadium in the Olympic Park will be one of Russia's World Cup arenas in 2018.

AER's Olympic Olympiad will stand like a beacon long after the last Olympic skier hits the slopes and the final skater takes to the ice. Basel Aero expects the airport's annual passenger traffic to reach 4 million by 2019, and when it does the Adler, Russia, airport will be ready.







## The Death Of Customer Service!

Airlines aside, aviation does have a brightly shining segment in which customer service lives on

**C**ustomer service is deadlier than a doornail (as we used to say in South Georgia). It's dead and the airlines definitely participated in the murder.

Case in point:

I have a coupon good for \$425 on a particular airline. It wasn't a gift. I earned it by taking a bump on a crowded flight on a bad day last year. Recently I decided to use the coupon, which advised me in writing to call a certain telephone number. I did. Four times. I never got through to a person. I tried to use the coupon online, but that wouldn't work either. Somehow, sometime, between now and the coupon's expiration in May, I've got to get a person on the phone. Pray for me.

In one recent news report, I learned that some airlines or group of airlines want the guvmint to help them with new laws



... when airlines want the law  
to protect them from their own pax,  
things are getting pretty bad.  
I gotta wonder why those passengers—  
let's call them customers—  
are getting so mad and unruly.

or regulations pertaining to "unruly" passengers. Hey, when airlines want the law to protect them from their own pax, things are getting pretty bad. I gotta wonder why those passengers—let's call them customers—are getting so mad and unruly. As a pax myself, I have a few ideas about that. (BTW, I just read that customer complaints actually dropped in December.)

Online recently, one airline pilot stated, "Passengers don't deserve low fares." Hey, are they in business or

at war? Many airline employees are actually mad at customers for buying tickets as cheaply as they can.

Aviation, of course, is not the only industry with surly customers. Have you ever tried to handle anything on the phone with Verizon Wireless? Pitiful. And they are in the telephone business! I remember when the phone company used to put on free seminars about serving customers on the phone.

In the meantime, aviation does, in my not-so-humble opinion, have a brightly shining segment in which customer service lives on. Congratulations and kudos go to our airports. I actually like airports (I'm talking about airports, now, not necessarily TSA).

I can eat, work, avail myself of the restrooms, read and use my computer with absolutely free WiFi, except at the world's busiest airport, Atlanta, where they charge for WiFi. By the way, I just called Atlanta to confirm that. I got a real, live customer service person on the phone so fast—and she was so friendly—that I may call again later just for the fun of it.

I'm not saying that I visit airports just for the pleasure of it, but if I get through with my business four hours before my return flight departs, I'll usually leave my hotel and go on out to the airport. Once at the airport I'm in my comfort zone, and I'm not likely to miss my flight.

In every bad situation some folks will profit, and this is no different. Customer service is so non-existent at present that any person or company that tries to be friendly, helpful and attentive will look like a diamond in a slop jar. I've never seen a time when a little bit of niceness would yield such high rewards in appreciation.



# When Airports Run It All

*Why it made sense for the City of McKinney, Texas, to purchase the airport's only FBO*

**F**uel margins are the cash cows of the airport business, paying for everything from perky customer service representatives to comfy passenger lobbies and pilot lounges. Let's not forget the extra investment cash those margins generate to spur economic development. Margins and how they're used, in fact, pretty much makes the difference between a successful FBO and an "also ran."

There's always been a distinct firewall, though, with few exceptions, between privately operated FBOs and the municipalities that manage the airports themselves. For local governments, the lure of those margins can be incredibly tempting, especially during tough economic times.

One of the more well-known industry squabbles happened at Chattanooga Metropolitan Airport where public money financed a new terminal building just a few years ago, one that began selling fuel in direct competition with the airport's other FBO, TAC Air. Adding insult to injury, the Chattanooga Metropolitan Airport Authority hired TAC Air competitor, Wilson Air Center, to run the new municipally owned facility. Surprising to many in the industry, an FAA Part 16 complaint against this public FBO found for the airport. TAC Air recently sold its holdings to the airport authority leaving the airport in charge of all fuel sales.

Not all airport-operated fuel facilities evolved from such contentious relationships, however. At McKinney National Airport, 30 miles north-east of downtown Dallas, the city purchased the

airport's only FBO on November 1 as the facility's management contract with Cutter Aviation was expiring (Cutter Aviation did not respond to *Airport Business'* requests for comment).

Local entrepreneur George Schuler developed and managed most of the McKinney's property over the past 30 years attracting companies like Texas Instruments and HP and, for a while, EDS. "In 2006, we realized Schuler was a willing property seller looking for a buyer. But he wanted to sell everything (the FBO and hangars) all at one time," says Ken Wiegand, director of McKinney National Airport and executive director of the McKinney Airport Development Corporation.

Schuler's \$25 million asking price worried some potential Cutter replacements that found McKinney's million-gallon annual fuel flow too small to be of interest at that price. The City of McKinney, however, compared the airport's budget to the price and saw a potentially good investment.

"The planets aligned for us and we knew this [purchase] was a one-time opportunity, to also take on a larger role in airport economic development," says Wiegand, who as the former



director of aviation for the State of Virginia, as well as the executive director and airport manager at Winchester Regional Airport in Virginia, brought a wealth of airport operations and planning experience to the deal.

As it turned out, there was more to critic's concerns than just the price. Some were not thrilled about the local government taking





*At McKinney National Airport, 30 miles northeast of downtown Dallas, the city purchased the airport's only FBO in November as the facility's management contract with Cutter Aviation expired.*

control of the FBO and those fuel sales. Wiegand says, "The Cutter people wrote to our elected officials and told them that FBOs are better managed by private industry," a perspective with

which National Air Transportation Association (NATA) President Tom Hendricks agrees. "In general we support free enterprise," Hendricks says. "We just want to see business compete on

**Ken Wiegand, director,  
McKinney National  
Airport**

a level playing field and when the government steps in, like it did at Chattanooga, it changes the entire playing field. In that case, Wilson Air didn't need any upfront money [to enter the market]."

Despite the authority's somewhat serendipitous purchase, as a former state aviation director, Wiegand's also a bit of a pragmatist. "General aviation airports require subsidies," he says. "There is nothing wrong with an airport ... or a sponsor that wants to break even [on expenses]. Why not earn your keep?"

**"We have a fire in our belly to be the most successful FBO and airport in the country as we draw business to our community."**

**KEN WIEGAND, DIRECTOR OF MCKINNEY NATIONAL AIRPORT AND EXECUTIVE DIRECTOR OF THE MCKINNEY AIRPORT DEVELOPMENT CORPORATION**

Wiegand's earlier responsibilities at Winchester Airport also included running that airport's fuel sales, so he knew from the moment the idea of buying Schuler's holdings came up that, "it would require a lot of work. You have to worry about [the FBO and the other real estate] like any other small business. The [McKinney] city council has a great deal of faith in this airport. I tell our city people that they pay me to worry and they let me handle it."

## BOOST BUSINESS OPS

Beside the opportunity to reap the benefit of fuel margins to help offset the cost of maintaining the airport, the city council, as well as the McKinney Airport Development Corporation, wanted more of a hands-on role in creating future business opportunities at the airport. With a growing population now numbering 145,000, McKinney is the county seat of one of the wealthiest and most conservative communities in the State of Texas. As the home to nine successful golf courses, McKinney believes it understands

business. Wiegand says McKinney's government predicts the local population will eventually swell to 400,000, hence its interest in helping the airport grow.

In December 2012, McKinney officially opened a newly constructed 7,002-foot by 150-foot runway to accommodate that growth, as well as the airport's 250 based aircraft. With a 16-inch concrete base, Wiegand says the new runway will handle 767-size aircraft all day long, a nod to the potential for airline traffic someday as well. The airport is served by a contract control tower.

There are always hurdles in luring new tenants to any airport. "Some people think our building codes are pretty tough here in McKinney," Wiegand says. "But I think an airport is the front door to a community so adherence to a standard actually makes us more attractive. If you want your own hangar, we'll help you identify the best location on the airport and then turn you over to our city's building development services branch."

However, Wiegand's team doesn't drop out of the development process at this point. "We'll attend those city code meetings alongside potential tenants," he says. "We're here to assist to make sure the project goes through."

There are 93 Fortune 500 company world headquarters within a 30-minute drive of McKinney National Airport and the airport people are already talking to companies based at nearby Dallas Love Field as the traffic-limiting Wright Amendment begins to sunset. Wiegand says the McKinney Airport Development Corporation also makes good use of many of those senior executives who sit on its board to help win new business.

"Our rent is not always the cheapest, but we're building brand new sites when many of our competitors are redeveloping," Wiegand says. "All the utilities are in, as are new taxicabs, so we think we have a nice airport."

Wiegand shares an anecdote ripped from his Winchester experience that he knows will help convince potential tenants to choose McKinney over competitors. "At Winchester our employees all wore neat uniforms. I also told them to bring a red carpet out to each and every airplane, even if it was a Piper Cub. One day this Lear shows up and it's the management team of Green Bay Packaging just stopping by for fuel on their way to scout a new plant. They liked our airport and our people so much that they asked to talk to

our economic development people. In the end, they built their new plant in Winchester. And it's still there today. I'll never forget that."

Wiegand adds that his staff at the FBO and the airport itself is both his and the city's greatest economic development asset.

## SUSTAINING SUCCESS

In the end, airport success stories focus on money, or the lack of it. Waxing a bit philosophical, Wiegand says, "I think that if an airport has to subsidize itself and is being pressured by its sponsor, they [the airport management team] need to look at new ways of generating revenues."

Everyone knows those opportunities are limited, however. "If you sell products and services to break even, I think that should be the goal, to help pay back capital projects. I see what we're doing with the FBO here with a break-even motive, especially if we're trying to make our airport as financially sustainable as possible."

NATA's Hendricks, however, is still concerned about airports that dive into running too much on the field. "This may be occurring more often than people realize," he says. "Some [airports] look at it as a revenue opportunity to spur economic growth. The [airport's] level of activity though is important in deciding who should run the FBO. Every airport is a little different." NATA members represent approximately one-third of the nearly 3,000 FBOs in the United States.

But Wiegand says, "We have a fire in our belly to be the most successful FBO and airport in the country as we draw business to our community. We're going to do it too. If we were wildly successful we might want to keep the FBO, but the council also thought that if it is successful we might also put it out for bids one day."



## ABOUT THE AUTHOR

**Robert Mark, CEO, CommAvia**

Mark, a 35-year aviation-industry thought leader, is CEO of CommAvia, a marketing-communications group that delivers leading edge media to the aviation industry. Mark, a commercial pilot who has logged 7,000 flying hours in airliners and business jets, as well as dozens of small training aircraft, spent 10 years as an air traffic controller and supervisor with the FAA. He also writes the award-winning industry blog, Jetwhine.com. He can be reached at [rmark@commavia.com](mailto:rmark@commavia.com).



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# Sustainability By the Air, Land and Sea

*Steps toward greater sustainability continue to impact airports' bottom lines and environmental footprints*

**F**or many airports, such as Port Columbus International Airport, Lambert-St. Louis International Airport and Indianapolis International Airport, being green is more than lip-service; it's a way of life. Officials at these airports have committed themselves to greening their operations as a means of assuming greater environmental responsibility. And they have succeeded. Learn how Port Columbus' green and clean propane autogas fleet is clearing the air, while Lambert-St. Louis' use of bio-friendly deicing fluid keeps contaminants from the ground water, and Indianapolis' new parking lighting retrofit lands big savings.

Of the three examples, consider this: Port Columbus converted 19 of its 25 passenger shuttles to propane autogas and saved \$5,000 in fuel in 2013 plus reduced emissions; Lambert-St. Louis significantly reduced greenhouse gas emissions through bio-friendly deicing; and the Indianapolis' lighting retrofit saves more than \$250,000 in energy and maintenance costs annually.

"Not only do sustainable practices help maintain the cost structure critical to an airport's ability to attract and maintain competitive air service, they make airports better neighbors by reducing energy use and lowering air emissions," says Mike Medvescek, chief operating officer for the Indianapolis Airport Authority.



## AIR

**PROJECT:** Convert passenger shuttles to propane autogas

**WHERE:** Port Columbus International Airport

**COST:** \$8,000-10,000 per vehicle

**ENVIRONMENTAL SAVINGS:** In 2013, Port Columbus saved \$5,000 on fuel, reduced greenhouse gas emissions generated by these vehicles up to 25 percent and slashed smog-producing hydrocarbon emissions by 40 percent.

Port Columbus International Airport operates 25 passenger shuttles that provide transportation between its long-term parking lots and entrances for arrivals and departures. These shuttles travel 50,000 miles and carry more than 2 million passengers every year.

When the State of Ohio enacted more stringent emissions standards in 2008, Port Columbus got busy researching alternative fuels before the standards took effect in 2010. Thomas Swackhamer, Port Columbus manager of parking, ground transportation and revenue, began exploring electric, ultra-low sulfur diesel (ULSD), natural gas, and propane autogas-fueled models to replace the airport's fleet of diesel-fueled passenger shuttles.

Though Port Columbus tested an electric and a ULSD bus, they found those vehicles presented challenges that made them a poor fit for its use.

The airport then tested a propane autogas shuttle, a Ford F-450 cutaway converted

by Starcraft. Port Columbus liked the performance, and placed an order for four more the following year using a Department of Energy grant. Currently, the airport operates 19 Ford F-450 cutaways, which have been converted with ICOM equipment by their supplier. By the end of this month, all 25 shuttles will operate on propane autogas.

"The primary reason we chose the fuel was its clean, green aspect ... it fit really well into our existing sustainability plan," says Swackhamer. Propane autogas reduces greenhouse gas emissions by up to 25 percent compared with gasoline and reduces smog-producing hydrocarbon emissions by 40 percent.

Propane autogas has proven to be a better fuel for both drivers and passengers when factoring in the time these buses spend idling. "The buses spend a lot of time waiting for passengers, especially at arrivals," Swackhamer says. "We get complaints sometimes about the diesel buses' exhaust when we're waiting to



## SEA

**PROJECT: BIO-FRIENDLY DEICING  
WHERE: LAMBERT-ST. LOUIS  
INTERNATIONAL AIRPORT**

**ENVIRONMENTAL SAVINGS: IF IT  
CONSUMES 1 MILLION LITERS OF  
KILFROST DF<sup>SUSTAIN</sup>, THE AIRPORT WILL  
SEE UP TO A 6,500 TON REDUCTION IN  
CARBON EMISSIONS, EQUIVALENT TO  
THE EMISSIONS OF 1,354 VEHICLES.**

At Lambert-St. Louis International Airport sustainability has a long history that goes back to the late 1980s when the airport began using alternative fuels. So when the opportunity to incorporate bio-friendly deicing arose, it just made sense to go there—even if it meant being the first to do it in the United States.

"It's more environmentally friendly, will have lower BOD (biochemical oxygen

demand) loadings when diluted, and since we're regulated by our storm water permit, anything that could reduce potential pollution makes sense," says Jonathan Matheny, environmental project manager, Lambert-St. Louis.

Airport Terminal Services (ATS) began using Kilfrost DF<sup>Sustain</sup> Type 1 bio-propanediol for deicing operations a year ago. ATS serves several major airlines at Lambert, deicing approximately 30 percent of the airport's commercial air traffic.

Kilfrost DF<sup>Sustain</sup> is a bio-derived, fully sustainable aviation deicing fluid that was developed in partnership with DuPont, Tate and Lyle. It is qualified to AMS 1424 and ISO 11075 standards. The fluid is manufactured from corn-sugar-derived glycol (rather than oil), which is not only sustainable but completely recyclable.

ATS also worked with the airport to install a Type 1 Glycol Blending System, manufactured by Liquid Automation Systems, at the end of Lambert's C concourse. This system allows ATS crews to customize the deicing mix to current weather conditions. Lambert is the first U.S. airport to use this system; ATS has it installed at three Canadian airports.

The system consists of a blending

machine that takes glycol and combines it with a water feed. The mix is determined by historic outside air temperatures and current weather forecasts.

"We look at the weather forecast for an extended period of time, no more than 72 hours out, and if we know it's going to be 26 degrees Fahrenheit, we will say based on regulatory requirements we need to subtract 18 degrees then build in a few extra degrees as a buffer," says Peter Hansen, director of Deicing Sales & Operations for ATS.

Mixing deicing fluid on site provides both a cost benefit and an environmental savings, says Hansen. "If an airport buys premixed fluid, the price per gallon is higher because you're shipping premixed fluid to the site. There's also a savings if you mix it according to specific weather conditions."

He explains pre-mixed fluids come in concentrations, typically 63 percent glycol and 37 percent water. But weather permitting, an airport may be able to go as low as a 45 percent glycol, 55 percent water solution. "There is an immediate cost savings there," he adds. "It depends on your average dilution, but you

Continues on Page 28

pick people up. With propane autogas, customers comment that they're glad we are using a green fuel instead of diesel."

Propane autogas offers another benefit: less noise pollution.

"When you have four diesel buses running side by side waiting for passengers, diesel gets very noisy, very quick," Swackhamer says. "With propane you can barely hear them running."

The airport currently pays less than \$2 per gallon for propane autogas versus \$3 to \$4 per gallon for diesel. Their total fuel savings allowed the airport to recoup its upfront costs on all 19 conversions. After applying current fuel savings toward conversions, Swackhamer says the airport has saved \$5,000 in 2013.

But surprisingly the biggest cost savings came in reduced maintenance. Compared with the diesel shuttles, the propane autogas shuttles have had much less downtime and have not experienced start-up problems in Columbus' cold winter temperatures. "Oil changes alone

cost less than half with propane autogas versus a diesel bus," Swackhamer says.

The average conversion cost per vehicle was \$8,000 to \$10,000—the same price the airport would pay to purchase a new diesel bus.

Swackhamer reports the airport recouped its return on investment with propane autogas shuttles within the first six months. "There aren't

that many airports running a 100-percent propane autogas-fueled fleet to my knowledge," Swackhamer says. "When I get asked the question about how it's performing and our experience, I tell them we're satisfied with propane autogas and we don't regret our decision at all."



**Port Columbus' shuttle buses transport more than 2 million passengers a year.**

# SUSTAINABILITYREPORT

Continued from Page 27

could see a cost savings of up to 40 percent."

Using sustainable glycol in this process also impacts the environment in a positive way, adds Gary Lydiate, chief executive at Kilfrost. Though Lambert-St. Louis is still calculating its savings after the completion of its first full year with the bio-friendly deicing system, Kilfrost estimates that if an airport consumes 1 million liters of DF<sup>sustain</sup>, it will see a carbon reduction of around 6,500 tons.



## LAND

**PROJECT:** LIGHTING RETROFIT

**WHERE:** INDIANAPOLIS INTERNATIONAL AIRPORT PARKING GARAGE

**ENVIRONMENTAL SAVINGS:** REDUCED PARKING GARAGE ENERGY USE BY 50 PERCENT ON AVERAGE AND UP TO 65 PERCENT DURING TIMES OF PEAK USE.

Indianapolis International Airport's 2.5-million square-foot parking garage completed an energy facelift in 2011. The project took advantage of newly developed green lighting technologies that were not yet mainstream enough to make it into the original construction of this LEED-certified campus. Shortly after the project, the Indianapolis Airport Authority (IAA) completely retrofitted its existing high-intensity discharge (HID) metal halide fixtures with induction lamps.

After working with ECO Parking Lights of Fishers, Ind., to set up a long-term demonstration of the firm's domestic induction technology solution, airport officials determined it was time to move forward with the relighting project. ECO's solution, which includes Osram Sylvania 100-watt Icetron induction lamps and ballasts, consumed half the energy of the existing metal halide lamps and ballasts, which consumed 208 watts of energy per fixture.

IAA hired Walker Parking Consultants of Indianapolis to compile bid documents and performance standards that were to be met in

the change outs. The airport did not restrict the technology it would consider but advertised for a turnkey solution. The opportunity attracted bids for LED, fluorescent and induction lighting technologies. After testing various lighting systems, however, the airport ultimately decided on induction lighting.

The airport also updated the lighting in the Indianapolis Maintenance Center (IMC). The two projects combined, anchored by the garage project, accounts for an annual savings of more than \$250,000 in energy and maintenance costs due to reduced energy consumption and the longer life of the lamps. The energy savings reduced CO<sub>2</sub> emissions by 5,233 metric tons, the equivalent of taking 1,000 cars off the road annually.

Rather than replacing the fixtures, the solution included engineering a thermally designed retrofit kit to apply to the original fixtures. This option reduced landfill waste, while maintaining the look architects had originally envisioned. It also came with a new five-year parts and labor warranty fully backed by Osram Sylvania.

"Improving our efficiency through reduced energy consumption directly supports our mission of maintaining a viable airport system that supports and improves the quality of life in our region," says Mike Medvescek, IAA chief operating officer.

The project also included installing individual photo-

cells on perimeter fixtures, which are designed to turn lights off during daytime operation, additionally increasing energy savings.

In the two years since this installation, the domestic induction lamps by Sylvania have improved in both lumen output as well as lumen maintenance. Also, ECO Parking Lights developed the first and only fixture of its kind to accommodate multiple lighting technologies. The ECO FlexTech fixture, which recently won the 2013 Indiana Innovation Award for its technology agnostic design and non-glare LED solution, will accommodate induction, LED or Remote Phosphor LED lighting technologies.

"It is imperative for an owner to select a product that grows with them," says William Longardner, director of product development, ECO. He adds ECO's products can be updated over time to ensure maximum performance and efficiency.





# Environmental Considerations for FBO Operators

*How FBO operators can minimize their environmental liability*

**E**nvironmental issues relating to fuel contamination have become an increasingly important issue for FBOs when leasing space at an airport. Airport lease agreements, more often than not, include a clause stating the FBO is solely responsible and fully liable for any and all fuel leaks or spills, as well as any damage resulting from same. Many lease agreements also include indemnification clauses requiring FBOs to hold harmless and indemnify the airport, the city, the county, or any other governing entity, thereby effectively releasing these parties from liability for the FBOs' tenants' spills, and perhaps even spills that originate elsewhere on the airport property and migrate onto or under an FBO's leasehold. As fuel spills and leaks are a very real possibility, whether on an FBO's own leasehold or elsewhere at an airport, there are some important steps FBOs need to take to minimize their legal liability.

## ESTABLISH A BASELINE

Prior to signing a lease at an airport, familiarize yourself with the history of the airport. Specifically, research for what purpose(s) the land has been used in the past and whether there have been any previous fuel spills or other potential sources of contamination. The FBO should also conduct testing of the underlying

ground to establish a baseline contamination level with respect to its leasehold. Knowing whether contamination is present will allow the FBO to disclaim liability for any pre-existing conditions rather than being liable for contamination the FBO did not cause. If pre-existing contamination is present and not documented and disclaimed by the FBO at the outset of a

tenancy, it is possible that the FBO could be liable for the costs associated with remediation.

## KNOW ENVIRONMENTAL CONDITIONS

Underground contamination is a moving target, particularly if there is water flowing under a leasehold. Thus, it is important to be aware of waterflow patterns under your leasehold (if any), the environmental conditions surrounding your leasehold and the airport, and to be cognizant of whether those activities can impact your baseline contamination level. To this end, FBOs should consider establishing a periodic audit with respect to its own potential sources of contamination, as well as those potential sources external to it. FBOs should document identifiable fuel spills and contamination events on adjacent properties and, as required, undertake interim monitoring to determine if the same impact the soils and groundwaters under their own leaseholds.

## PUT A RESPONSE PLAN TOGETHER

An FBO that deals with fuel in any capacity needs procedures in place to address fuel spills. Knowledge of the local environmental regulations and compliance with same can protect the FBO from additional penalties and fines when a spill occurs. The FBO should have a written fuel response plan that is consistent with the local regulations with respect to reporting requirements, immediate clean-up and remediation, and post-incident monitoring. Lack of or insufficient environmental response procedures can expose the FBO to additional governmental penalties. Further, improper waste handling, storage and disposal can result in regulatory fines, as well as negative publicity for the FBO.

## LIMIT LIABILITY TO YOUR CONTAMINATION

**WHEN** negotiating the lease, limit your liability to the contamination you cause. Provide the airport with the results of the baseline testing in order to disclaim contamination caused by a previous tenant. Further, establish procedures for tracking the contamination you cause. In addition to the tracking your own contamination, FBOs should monitor changes on the airport as well as any other fuel spills.

The full text of this article is available online at [www.aviationpros.com](http://www.aviationpros.com).



# FOD:

## Three Letters That Can Spell Big Problems

*Boston Logan International Airport addresses potential FOD issues as it becomes the first U.S. airport to adopt an automated FOD detection system*

FODetect's close proximity to the pavement enables it to spot even the smallest of debris.

**A**t airports, there are three letters that can spell big problems: FOD.

Short for foreign object debris left behind on airport runways, taxiways and aprons, the fragments pose a significant risk that leads to damages in the billions of dollars for airports and airlines every year.

Left untouched or unnoticed, these three letters can represent another word too: Disaster.

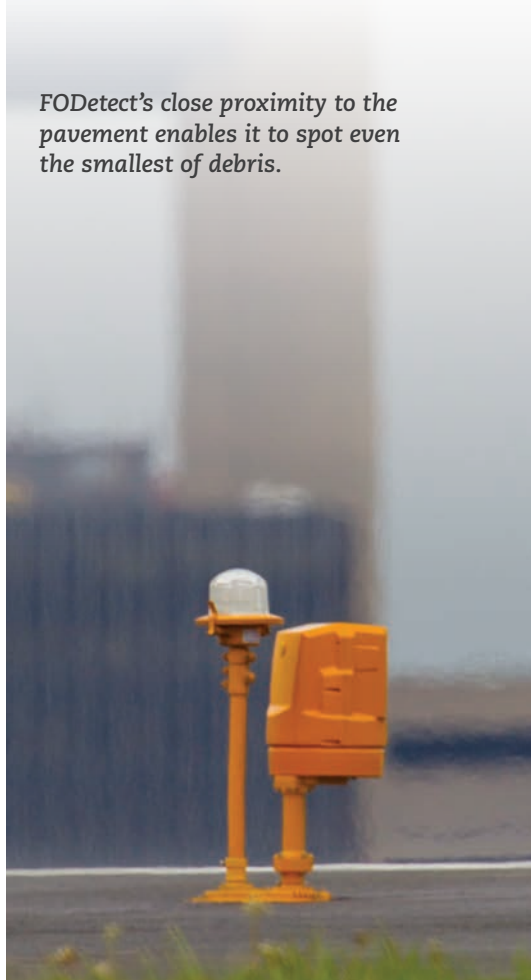
On July 25, 2000, a metal strip detached from a Continental Airlines plane and fell on the runway at Paris Charles de Gaulle Airport. This debris punctured the tire of a departing Air France Concord jet spewing bits of rubber into the air, some of which punctured the aircraft's fuel tanks causing the plane to crash shortly after take-off, killing 113 people.

In the years since, Bangkok Suvarnabhumi International Airport installed an automated FOD detection system from Xsight Systems, headquartered in Israel with

offices in Boston, Mass., to supplement the manual checks already being performed. Airports in Tel Aviv and Paris have also followed suit, according to Arik Fux, head of Xsight's U.S. office.

And in November, Boston Logan International Airport unveiled a \$1.7 million Xsight FODetect system on 09-27, the airport's busiest, 7,000-foot-long runway. This installation is the first of its kind in the United States. "We are honored to be selected for this installation, 13 years after the Concord crash," says Fux. "Massport [the Massachusetts Port Authority] is very proactive in adding cutting-edge technology that helps keep the airport as safe as possible."

The FAA funded \$900,000 of the project through the Airport Technology Research Program, under an agreement that enabled Massport to provide the remaining funding





and procure the Xsight technology. The agreement also calls for a one-year-study to evaluate the safety benefits of the automated detection system versus traditional FOD best practices, reports the FAA.

"Using technology to find and remove potentially damaging objects on the airfield takes safety up another notch at Boston Logan," said Christa Fornarotta, FAA associate administrator for airports, when the project was unveiled. "Massport has a long history of investing in cutting-edge technology and working with the FAA on important airport safety initiatives."

## THE CASE FOR AUTOMATION

Currently, the FAA requires airports to manually check their runways, taxiways and aprons at least once every 24 hours. But this is a regulation set decades ago when air traffic volumes were far smaller than they are today, according to Fux.

Airports traditionally use vehicles to scan pavement and rely on sweepers, vacuums and magnetic bars to clear the debris. Massport currently performs such checks three times a day, and will continue to do so even with the automated technology in place.

A manual inspection system works remarkably well, but is subject to human error. "An automated runway inspection by machine can do a better job than a human," Fux says. "There may be hundreds of takeoffs and landings in between every manual inspection. An automated system scans continuously."

Boston Logan's automated FODetect system features 68 sensors, mounted on runway light fixtures every 200 feet, which continuously scan 180 degrees along the length of the runway, looking for debris that might include things like dislodged airplane parts, chunks of

asphalt, metal shards, bolts, rocks and more. The system utilizes an integrated optic sensor with NIR illumination and millimeter-wave radar sensing technology to detect even the smallest FOD. The technology is supported by the company's proprietary image processing software, and the system's Surface Detection Units include a powerful local processing unit connected to the system server and operator interface, making it possible to scan runway surfaces in under a minute.

When the system spots an object—even one as small as a rivet, it activates an audio-visual alarm in the airport's control tower and sends live video feeds and GPS coordinates for the object to appropriate airport personnel, who evaluate whether the debris must be removed.

An operator views the live video of the detected object and receives physical data (size and location) to help him determine whether to take action in compliance with FAA AC 150/5210-24 Chapter 6.

"The system's FOD visualization and interrogation capabilities assist the operator in identifying the FOD, its location and its size to minimize false alarms," Fux says. "And if the FOD is determined a danger, operators can then use its GPS location, blinking closest edge light, and its number and laser line marker to pinpoint the FOD and quickly retrieve it."

FODetect is remarkably accurate, according to Fux. "The distance from the sensor to the area being scanned is 100 to 200 feet," he says. "It's a very close distance, allowing the operator to

## AIP FUNDS AVAILABLE FOR FOD DETECTION

**FOR** almost a decade, the FAA's Airport Safety Research and Development Section at the William J. Hughes Technical Center in New Jersey has explored technology to detect FOD at airports. Under this program, the FAA evaluated different technologies for a 12-month period, and produced an Advisory Circular "Airport Foreign Object Debris," which provides performance specifications for an automatic FOD detection system. Airports can use this performance specification to competitively procure FOD systems.

To date, four manufacturers have developed products:

**www.xsightsys.com** Boston, Mass.-based XSight's product is FODetect, and the system uses small detection units that contain both radar and camera units mounted near the runway edge. The units scan the area and send an alarm message to the operator when FOD has been located. It also sends a video image to easily retrieve the debris.

**www.trexenterprises.com** San Diego, Calif.-based Trex Enterprise's FODfinder is a mobile detection system that can be mounted to the roof of a vehicle. The system provides a radar and video image of the debris and once retrieved takes a photograph of the item and assigns a barcode for inventory purposes.

**www.tarsier.qinetiq.com** UK-based QinetiQ's Tarsier Radar uses tower-mounted radar units that continuously scan the pavement and alarm and send a message identifying the location of the FOD.

**www.stratechsystems.com** Singapore-based Stratech's iFerret system uses a high-resolution camera to scan the runway. The software adapts to changing lighting and surface conditions and sends an alarm signal when debris is found.

Airport Improvement Program (AIP) funds are available to help offset the costs of these FOD detection systems. The FAA paid for a portion of the system at Boston Logan International Airport and is providing an AIP grant to fund a portion of an FOD detection system at Miami International Airport.

—Courtesy of FAA Fact Sheet—Foreign Object Debris (FOD)

"Using technology to find and remove potentially damaging objects on the airfield takes safety up another notch at Boston Logan."

**CHRISTA FORNAROTTA, ASSOCIATE ADMINISTRATOR FOR AIRPORTS, FAA**

An automated system can help pinpoint which aircraft the FOD came from.



zoom in to obtain a clear image of what's going on." He explains that if the sensors were located further away, both inclement weather conditions and objects would stand between the sensor and the pavement being scanned.

"Because we're co-located with the runway edge lights, there is nothing between the sensors and the runway," he says. "We have a very clear view that gives us the best conditions possible to monitor the runway."

In evaluations with the FAA, Fux says the system was able to locate even the smallest of screws. But airports can set thresholds at levels that work for them. "It's based on a risk analysis perspective, based on what they want to react to, balanced by the need to close the runway when they react to something," Fux says. "The system is configurable in a way that allows them to set the threshold at the levels they require."

FODetect is also a great tool to detect dead

birds or wildlife on the runway, which is monitored by the U.S. Department of Agriculture. The system provides pinpointed information, in terms of where a bird strike occurred and which aircraft was involved. "It's very easy for them to tie a bird strike to a specific aircraft," Fux says.

The system also archives event data and images for future analysis. This allows airport officials to perform timely debris detection, which means they can identify the aircraft involved and the piece located on the runway. For example, if an aircraft loses a fuel cap as it lands, airport officials can identify which aircraft and notify personnel about the missing fuel cap by the time the aircraft pulls into the gate.

## INSTALLATION DECISIONS

Deciding where to put the system might be the most difficult part of the installation process.

Boston Logan selected 09-27 because it

**"There may be hundreds of takeoffs and landings in between every manual inspection. An automated system scans continuously."**

**ARIK FUX, HEAD, XSIGHT U.S. OFFICE**

was its most heavily used runway. Massport is contemplating adding the system to other runways in the future.

"It makes sense for airports to have FOD detection systems for all surfaces," says Fux. "It makes sense for airports to



# RUNWAYMANAGEMENT

start with the heaviest used runways first."

Once it's agreed that a system like this is needed, funding becomes the next hurdle to clear. According to Fux, the FODetect system is Airport Improvement Program (AIP) eligible. In fact, Miami International Airport just obtained AIP funding for \$2.5 million of a \$5 million FOD system. The remaining portion will be paid for by the airport, says Fux.

Once a project like this is approved, it takes just a few months to get it operational, according to Fux.

The first step is working on the design of the infrastructure in the installation. Because the Xsight system uses existing infrastructure—runway lights—the installation involves using cables in the existing conduit system.

"No trenching or major civil engineering work is needed on the airfield," says Fux. "After the design phase is concluded, which typically takes just a few weeks, installing the infrastructure takes about two months, and has no impact on airport operations. The work is done during the night or at other times when the runway is not in use."

The final phase is to install the actual units then test and commission the system with airport operations and the project management

team. It also involves training personnel to use the system, which Fux says is very intuitive to use. The man-machine interface is based on an airport map, with icons on it that show the location of the units. Operators simply double click on the sensor they wish to view in order to retrieve the available video and make decisions on what they see.

"Our experience has been that within a couple of hours, the employee knows everything they need to know to operate the system," he says.

With the FODetect system in place, FOD may someday become a three letter abbreviation that stands for "detected" foreign object debris. Automating this process can have a positive effect on both the top and bottom line of an airport, through greater efficiencies and improved safety.

"FODetect is a paradigm change to how runway surfaces are managed," says Fux. "We are optimistic that other airports around the country will adopt this important technology."



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## ADINDEX

Advertiser .....	Page #
Astronics DME .....	16
AviationPros LIVE.....	17
Daimler Vans USA, LLC.....	36
Ford Commercial Truck.....	2-3
Lektro .....	16
Nissan NV Passenger Van .....	35
Schweiss .....	33
VP Buildings.....	6

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# FINAL ANALYSIS



## DFW PROMOTES HEALTHY HABITS

If Dallas-Fort Worth International Airport has its way, the healthiest airport in the entire world will one day be found in the Lone Star State. The airport's new "Eat Healthy at DFW" program is designed to appeal to travelers tired of pizza slices and burgers and fries. DFW has tasked its restaurants and vendors with adding at least one low-calorie, low-fat, low-sodium, cholesterol-free, plant-based or high-fiber option. With a walking path to the airport, a yoga studio within its walls, and healthier food options this airport in the Big D is well on its way to capturing the World's Healthiest Airport title.

320,000  
THE NUMBER OF  
PASSENGERS USING  
DALLAS/FORT WORTH  
INTERNATIONAL  
AIRPORT'S AUTOMATED  
PASSPORT CONTROL  
SYSTEM SINCE  
OCTOBER 2013.

"The most  
modern airports  
and ports are in  
other parts of  
the world."

VICE PRESIDENT  
JOE BIDEN  
BLASTING JFK  
AND LAGUARDIA  
AIRPORTS FOR  
LAGGING BEHIND  
THEIR FOREIGN  
COMPETITORS

# \$1,000

The cost of celebrating your nuptials at Burlington International Airport, which opened its space to wedding celebrations in 2014. The first couple will wed on the airport's second-floor mezzanine on April 12.

DECEASED, AGE 65



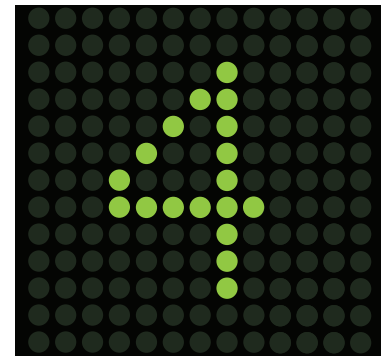
**HENRY M. OGRODZINSKI**  
President/CEO,  
National Association of  
State Aviation Officials  
(NASAO)

"Tired, dated terminals are gradually disappearing and going the way of the Dodo bird. In their place, passengers will increasingly find bright, sparkling new facilities bursting with concessions and, of course, an ample amount of retailers. ... it's imperative that the 'passenger experience' be considered in all terminal projects going forward."

MARY KIRBY, FOUNDER AND EDITOR,  
RUNWAY GIRL NETWORK,  
IN AN INTERVIEW WITH CNBC

## \$8 BILLION

The amount delegated to upgrade the New York region's three top airports. Updates include redeveloping LaGuardia Airport's main terminal building, demolishing Terminal 3 at JFK International Airport, and extending the PATH train to connect with the Air Train servicing Newark Liberty International Airport.



The number of airports offering yoga studios as a way for travelers to pass the time. Travelers can get into their downward-facing dog at airports in Chicago, Ill.; Burlington, Vt.; Dallas, Texas; and San Francisco, Calif.



**BRETT RYDEN**  
Publisher,  
Cygnus Aviation Group

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CHIEF COMMERCIAL OFFICER MOHAMMED AL BULOOKI TO GUESTS  
AT THE MARKETING LAUNCH FOR ABU DHABI AIRPORT'S  
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<sup>1</sup>Available feature. <sup>2</sup>Ward's Large Van segment, '13 NV3500 Passenger vs. '12 competitors. Air bags are only a supplemental restraint system; always wear your seat belt. Rear-facing child restraints should not be placed in the front passenger's seat. All children 12 and under should ride in a 2nd-, 3rd- or 4th-row seat properly secured in child restraints, booster seats or seat belts, according to their size. Air bags will only inflate in certain accidents. See your owner's manual for details. Always wear your seat belt, and please don't drink and drive. ©2013 Nissan North America, Inc.

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<sup>1</sup> Lane Keeping Assist may be insufficient to alert a fatigued or distracted driver of lane drift and cannot be relied on to avoid an accident or serious injury. <sup>2</sup> Blind Spot Assist may not be sufficient to avoid all accidents involving vehicles in your blind spot and does not estimate the speed of approaching vehicles. It should not be used as a sole substitute for driver awareness and checking of surrounding traffic conditions. <sup>3</sup> COLLISION PREVENTION ASSIST may not be sufficient to avoid an accident. It does not react to certain stationary objects, nor recognize or predict the curvature and/or lane layout of the road or every movement of vehicles ahead. It is the driver's responsibility at all times to be attentive to traffic and road conditions, and to provide the steering, braking and other driving inputs necessary to retain control of the vehicle. Drivers are cautioned not to wait for the system's alerts before braking, as that may not afford sufficient time and distance to brake safely. Options shown. Not all options are available in the U.S.



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