



# AIR TAP Briefings

A publication of the Airport Technical Assistance Program of the Center for Transportation Studies at the University of Minnesota

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**Special Fall Forum Issue:** This issue of AirTAP *Briefings* features extended coverage of the 2013 AirTAP Fall Forum.

## Fall forum offers look inside MSP's operations, economic impacts

The 2013 Fall Forum, held September 26 and 27 at the Metropolitan Airports Commission (MAC) facilities in Minneapolis, drew attendees from across the state to learn from each other and the aviation experts who presented.

Jim Grothaus, AirTAP director, kicked off the forum by welcoming attendees. "The most important thing over the next two days is getting to know people, mak-

ing connections, and getting some phone numbers so when you have a problem you know someone you can call."

The forum was sponsored by Minnesota AirTAP (housed within the Center for Transportation Studies) and the Minnesota Department of Transportation (MnDOT) Office of Aeronautics, in cooperation with the Minnesota Council of Airports.



The fall forum included a tour of MSP's maintenance facilities and other sites on the airfield.

## Behind the scenes of an international airport

If attendees from Minnesota's smaller airports have wondered what it takes to run a larger operation, they got a chance to learn during a tour of MAC operations at Minneapolis-St. Paul International Airport (MSP).

MSP is the 13th busiest airfield in North America and operates much like a small city in terms of the size and scope of its operation.



Paul Sichko narrated the driving tour of MSP.

"We are essentially a public works department," said Paul Sichko, assistant director for MSP maintenance and airside operations. Sichko led a tour for Fall Forum attendees aboard a bus traveling inside the airport's 16 miles of security fence (which has been heavily reinforced since 9/11).

The MAC operates MSP and six general aviation airports in the Twin Cities area. Its staff includes 111 individuals authorized in the field maintenance department and 16 in the airside operations department. That full-time staff is augmented with 28 heavy equipment operators in the winter who work on call and 8 laborers who shovel snow in front of the terminals, Sichko said.

Along the route, the group got a look at how the airport handles the snow and ice that's part of a typical Minnesota winter: massive snow blowers, numerous deicing pads, and three in-ground snow melters that can liquefy 120 tons of snow per hour.

"It's much more efficient to melt the snow than to haul it out," Sichko said. Because the runoff contains glycol (the chemical used in deicing), it goes directly into the airport's reclamation facility. Sichko also noted that MSP was one of the first airports to use end-of-runway deicing—a safety improvement that allows a plane to taxi immediately from the deicing pads to departure and runway.

In addition to maintaining the airport surfaces, MAC staff maintains areas outside the fence: all the public roadways, the frontage roads, 34th Avenue (with Bloomington), and 28th Avenue (with Minneapolis). Staff are also responsible for all the landscaping—three-quarters of a million square feet of landscape beds on the campus, Sichko noted.

On route, the group viewed an out-of-commission DC-9 aircraft on the airfield now used for training purposes—for example, it was filled with smoke for an emergency exercise, and it's been used for deicing training.

As the bus traveled through one of the airport's six tunnels, Sichko noted that its construction in 2006 was "the best \$51 million we've ever spent." Previously, vehicles had to either cross three taxiways and a runway, or drive the entire perimeter of the airport to go from the maintenance



Airport snow removal equipment

facility to Terminal 1 (also known as the Lindbergh Terminal), he said, adding that from a safety standpoint, the "4-22" tunnel has eliminated conflicts between vehicles and airplanes.

During the tour, Sichko explained that aircraft are fueled directly by pipeline from Pine Bend Refinery, near Rosemount, Minn. Four million-gallon tanks feed an underground hydrant system with access



Trucks and equipment at MSP Fire Station 1

for every aircraft parked at Terminals 1 and 2. (The Fed Ex and UPS ramps are still fueled by tankers.) A driver can pull up to the aircraft with a hose, hook up the system with the stationary cart, read the meter, and hand the airline a bill.

As the bus passed Terminal 2 (also known as the Humphrey Terminal), Sichko pointed out that the terminal is all common use now, which means the MAC can assign gates to any airline. "That's the beauty of this thing. If we have to do construction, we can move people around. It's not like Terminal 1, which is all gates [with] 30-year leases," he said. "If you took the passengers that came through [Terminal 2] it'd be the 27th busiest airport in the country. It's not just 'spring flings' nowadays, especially with Southwest Airlines coming in."

Parking is the largest source of revenue for the MAC, Sichko said; revenue has been as high as \$70 million annually. He said that although the MAC has taxation

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# Minimum standards protect airport and operators

Andy Peek, assistant manager for the FAA's Airports District Office, opened the forum's first session with an overview of why airports need minimum standards, how they relate to airport sponsors and the consultant community, and what can happen when you don't have them.

Minimum standards set the required conditions all operators must meet to provide a commercial service on an airport. These standards are meant to ensure safe, efficient operations and compliance with FAA rules and regulations; prevent discrimination; protect the investment of those who provide aeronautics services from competition that might not be making similar investments; and provide opportunities for newcomers to offer their services within the market. Standards ensure all players are treated fairly and the playing field is level. "Unfair treatment is the number-one complaint," Peek said. "If you don't have any rules, how do you figure out what's fair and what isn't?"

Minimum standards are directly tied to grant assurances: when airport owners or sponsors, planning agencies, or other organizations accept funds from FAA-administered airport financial assistance programs, they must agree to certain obligations, or assurances. These obligations require the recipients to maintain and operate their facilities safely and efficiently and in accordance with specified conditions, Peek explained.

"When you get out of compliance, the amount of work to get back in compliance is quite substantial," he cautioned.

Although the FAA's role isn't to develop standards for airports, it offers help through advisory circulars and will review what an airport creates to ensure it is not violating grant assurances.

Peek said the most common issues with minimum standards involve self-service fueling, lease rates, and access to the airport. Complaints the FAA receives are often a result of a communications breakdown, Peek said. "Communication at the local level is our recommended best practice." Peek said from his experience, 9 out of 10 conflicts could be resolved if the airport had minimum standards in place.

Next, Kelly Gerads, assistant director of MAC's reliever airports, talked about the process of creating minimum standards. She cited a situation in the late 1980s when

a charter operator wanted to operate from a small hangar at the St. Paul downtown airport, and despite several significant drawbacks, "we didn't have a way to say no, because we didn't have any minimum standards in place."

The airport adopted standards in 1992, when it had 40 existing commercial operators and a number of other requests. As part of the process, it looked at FAA ACs, the FAA airport compliance manual, and Minnesota statutes. It also collected examples from across the country.

The MAC's overall goal in developing minimum standards was to "promote the efficient, safe, and economic handling of air commerce." In the process of implementing the standards, the airport issued status letters to all operators "letting them know where they stood," she said. "For those who didn't meet the requirements, we conducted 10 to 15 variance hearings. We didn't put anyone out of business during this process, [but] we may have changed the way they did business—changed the location, or amended their lease."

About 10 years ago, an increase in corporate traffic, runway extensions, and other changes at the relievers began to necessitate updated standards. Among the considerations are the infrastructure and use of MAC facilities, the fleet mix (including aircraft design), the profile of each reliever airport, the make-up of commercial operators, and space available for development.

Following Gerads, Marty Lens, airport director for Rochester International and former director of Outagamie County Regional Airport (ATW) in Appleton, Wisconsin, offered the small airport perspective on minimum standards.

When Lens arrived at ATW, its minimum standards were clearly outdated. Violations were present, and "some of our biggest violators were our biggest tenants," he said. The airport took what he described as a volatile action by hiring a contractor to manage the fixed-base operator (FBO) services on behalf of the airport, and the FBO was moved off the field. "You have an obligation to what your master plan says you're doing or will do. You have to follow through," he said.

Of all the changes the airport made to spur growth and regenerate aviation, the minimum standards were an important document to set the tone, "but not to be used as a hammer," Lens said.

His advice to airports creating minimum standards is to take the necessary time (in his case it was roughly 12 months), consider using a consultant, and review what others have done. Also consider asking your

liability carrier to weigh in, he said.

Finally, be sure to educate and communicate with everyone, Lens said, "from your county boards to your city councils.... because in a small town everyone knows everyone. Bring them into the fold and get their feedback. That's really stakeholder engagement."

## Report shows MSP's economic impact

In another forum session, Jeff Hamiel, executive director of the MAC, discussed findings from a recently completed economic impact study of MSP conducted by InterVISTAS Consulting. The study found that MSP supports more than 76,000 jobs, \$10.1 billion in business revenue, \$3 billion in personal income, \$1.9 billion in



Jeff Hamiel talked about the economic benefits of Minnesota's aviation system.

local purchases, and \$611 million in state and local taxes, Hamiel noted.

Between Chicago and Seattle, and as far south as St. Louis, there's not another piece of real estate—3,400 acres—that produces anywhere near \$10 billion in economic vitality, Hamiel said. "The bottom line is we're contributing to the overall economic stability of the region and the state."

In 2012, MSP served 33 million passengers and accommodated 425,332 landings and takeoffs, making it 16th in North America for the number of travelers served. The 3.8 million annual domestic visitors spend \$1.9 billion when they're here. "People come to the Twin Cities, they stay in hotels, they buy food, they buy gifts, they spend their dollars, then they go back home again," he said.

MSP is ninth among U.S. cities in number of nonstop markets overall; when ranked per capita, it's fifth. "What we have essentially is air service that's phenomenal. That's partly because we're home to 19 Fortune 500 corporations," Hamiel said. "If you don't have connectivity with your customers and your markets, you're not going to be here. I think that's a testament to the state of Minnesota—and the way we operate our businesses—that in fact this is a valued place."

Hamiel noted that MSP has received

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For more information on developing airport minimum standards:

- AC 150/5190-6, *Exclusive Rights at Federally Obligated Airports*
- AC 150/5190-7, *Minimum Standards for Commercial Aeronautical Activities* (FAA ACs are available at [www.faa.gov/airports\\_airtraffic/airports/resources/advisory\\_circulars](http://www.faa.gov/airports_airtraffic/airports/resources/advisory_circulars))
- *Airport Sponsors Guide to Minimum Standards and Airport Rules and Regulations* ([www.nata.aero/data/files/gia/airport\\_misc/minstdsguidefinal.pdf](http://www.nata.aero/data/files/gia/airport_misc/minstdsguidefinal.pdf))

# An airport's story: Minneapolis–St. Paul

The Minneapolis–St. Paul International Airport (MSP) is one of the largest and busiest airports in the United States. Nestled among two major metropolitan cities and surrounding suburbs, the airport averages about 500,000 landings and take-offs and serves nearly 35 million passengers each year.

The airport is managed and run by the Metropolitan Airports Commission (MAC), a public corporation established in 1943 by the Minnesota legislature.

“Being an airport commission has divorced us from a lot of the politics that many airports face if they’re city or county operated,” said Patrick Hogan, public



MSP's Patrick Hogan shared the history of MSP.

affairs and marketing director for the MAC.

Today, the airport sits on about 3,400 acres located nearly 12 miles from downtown Minneapolis and includes two major terminals. Terminal 1 (the Lindbergh Terminal) is the larger of the two, with 2.8 million square feet and 114 gates. Terminal 2 (Humphrey) has about 531,700 square feet and 10 gates. Passengers can travel between the two terminals using the city's light-rail transit system.

MSP was originally an automobile speedway that held its first race in 1915.

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authority in the seven-county metro area, the last time a tax was proposed to support operation of the airport was 1969. The MAC has been self-sufficient since that time—no tax dollars are used to operate the facility; rather, user fees and internally generated revenue account for 100 percent of its funding.

Construction is taking place at several areas at MSP. At one site, Sichko noted how the air operations area (AOA) fence was put on Jersey barriers so the construction project is outside of airport security. “If anyone has that option...it eliminates a lot of problems,” he said.

A stop at one of the airport's two fire stations highlighted the vehicles and equipment capable of suppressing aviation jet



The speedway was unsuccessful and was later sold to an aeronautics club, which constructed the first wooden hangar on the property in 1920 to accommodate airmail service. The area became known as Wold-Chamberlain Field, named after two local pilots who died in combat during World War I. During this time, the airport also became the home of Northwest Airlines, which carried its first paying passenger in 1927.

Throughout the late 1920s and early 1930s, the Minneapolis Park Board purchased Wold-Chamberlain Field and renamed it the Minneapolis Municipal Airport. During this time, the airport continued to grow with the establishment of military units on the property, and Northwest Airways created the nation's first air-rail link connecting Minneapolis and Chicago.

The Minneapolis Municipal Airport nearly doubled in size throughout the 1940s, extending runways and expanding military reserve units. In 1942, Minneapolis and St. Paul combined air operations at the Wold-Chamberlain site and began plans to construct a larger airport. Then, in 1947, the airport became international, offering service to Tokyo, Seoul, Shanghai, and Manila.

In 1958, construction began on a 600,000-square-foot terminal, which eventually became Terminal 1. It opened in 1962 with 24 aircraft gates and two concourses. Throughout the 1960s and 1970s, the airport underwent further expansion with new concourses, more parking spaces, and new hangars.

In 1996, the MAC commissioned the “Building a Better Airport” program, a \$3.2 billion initiative that resulted in 30

Airport's story continued on page 4

fuel fires—and occasionally, an oil fire at the local refinery. Because the airport is located close to several lakes and rivers, the station houses an airboat for water rescues as well. Most calls for fire department personnel, however, are to the terminal buildings, where they've saved the lives of numerous passengers, Sichko said.

Sichko pointed out how several other agencies are using MAC property, including MnDOT's truck station, which houses repair and replacement equipment as well as salt storage, and the Richfield Public Works facilities.

Inside the MAC's Trades Building, attendees toured the carpentry, signage, painting, electrical, and plumbing operations. On hand were staff who create signage for all seven MAC airports, make and monitor keys for every lock, and paint markings on all airport pavement—including 20 runways and more than 21,000 parking stalls.

The tour included a stop at the MAC's driver training center, where attendees could try the snowplow driving simulator.

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kudos from several industry groups that have called it the “best airport in America” and the most efficiently managed airport in North America.

MSP is served by every major U.S. airline except Jet Blue. The MAC has been successful in efforts to attract air carriers and since 2008 has added Alaska Air, Southwest Airlines, Great Lakes Aviation, Spirit, and Air France.

Delta Airlines accounts for 76 percent of MSP's operation—and MSP is fortunate for that, Hamiel said. “We are one of [Delta's] most profitable markets. They're a reliable company. They're financially sound... We will continue to be a major hub of Delta Airlines for a long time. I think that's good from the standpoint of business and passenger connectivity. We just need to provide competition to keep the fares down.”

Of the more than 76,000 jobs MSP generates, 19,800 are directly tied to airport operations (and are at the airport), 17,100 are induced by MSP operations, 1,540 are tied to airport capital development improvements, and 24,500 are generated by visitor spending. In terms of direct jobs, 9,600 are employed by passenger airlines. Total employment of the MAC (police, fire, field maintenance, operations management, etc.) is 574—which is small relative to other comparable organizations running U.S. airports.

Hamiel said the findings of the economic impact study are relevant beyond MSP; the state's smaller airports and the communities they serve thrive “because in part there's an aviation system that supports the connectivity of the customers and consultants and businesses and so forth—it's all important to all of us.”

## Mark your calendar!

- **2014 Minnesota Airports Conference**, April 16–18, Bemidji. This conference focuses on airport management, operations, and maintenance. Learn more at [www.dot.state.mn.us/aero/events/airportsconference/index.html](http://www.dot.state.mn.us/aero/events/airportsconference/index.html).
- **Unmanned Aircraft Systems (UAS) forum**, April 30, University of Minnesota St. Paul campus. This one-day forum will bring government, academic, and industry leaders together to discuss the rapidly growing UAS industry and how Minnesota can prepare. Learn more at [www.airtap.umn.edu/events](http://www.airtap.umn.edu/events).
- **AirTAP Part 139 Wildlife Training Course**, May 14, MSP Drivers' Training Center, Minneapolis. This workshop is open to airport staff interested in learning best practices and participating in classroom sessions, field training, and hands-on demonstrations. See [www.airtap.umn.edu/events](http://www.airtap.umn.edu/events).

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# Being prepared means knowing your risks

In the forum's final session, Kristi Rollwagen, manager of emergency programs for the MAC at MSP, offered advice



Kristi Rollwagen

for hazard planning and emergency preparation. Doing so requires that airports know their risks and develop a plan to minimize them. "You're never going to be able to get rid of all risk...but you can learn to manage [it]."

The emergency management cycle, Rollwagen explained, is an open-ended process with four phases: mitigation, preparedness, response, and recovery. Mitigation is an ongoing effort to limit or prevent the effects of a disaster—for example, by buying out flooded homes or installing safe rooms. "Mitigation should be at the beginning and end—that's the smart way to do emergency management," she said. "But mitigation costs a lot of money, and it's a hard sell with all the other requests for funds."

Preparedness is planning how to respond in case a disaster happens, she continued. This includes a variety of measures aimed at ensuring the community is prepared to react to any threatening hazard. Examples include airport emergency plans, triannual exercises, and active shooter training. The MAC also participates in an Emergency Preparedness Day, April's Severe Weather Awareness Week, and Winter Hazard Awareness Week and distributes personal family disaster supply kits for employees.

Rollwagen defined response as action taken immediately before, during, and after a disaster or major emergency.

This includes training responders to be safe in their response. The goal of the responder is to save lives, minimize property damage, and enhance the beginning of recovery from the incident. In the area of response, different approaches include warnings and notifications, evacuation plans, shelter-in-place, emergency operations centers, survivor centers, family assistance centers (working closely with the airlines), and temporary morgues.

Something she's seen in emergency management over the last 10 years, Rollwagen said, is "a very large expectation from the community at large that we will begin our recovery efforts at almost the same time as we're dealing with the middle of response."

The goal of recovery is to return a community to whatever level of "normal" can be achieved, Rollwagen said, adding that this issue received a lot of attention after Hurricanes Katrina and Sandy. "We're an economic engine for the metro area. It's imperative that we are functioning," she said. "And I think any of the relievers [airports] would say the same thing—they are their own communities' economic engines."

"We have a lot of expectation from the community as well as the stakeholders here at the airport that we are going to recover and come back," she continued. "So it's not just about infrastructure...Part of our recovery is how do we take care of our people?" For example, she said, what is the right amount of time for people to come back to work after an incident?

"This is a daunting phase of emergency management because it requires personal and community motivation," Rollwagen said. Specific recovery efforts include assessing damage, removing debris, decontaminating the site, setting up assistance

centers (for family members or others), conducting psychological first aid and critical incident stress management, and reestablishing continuity of operations.

Rollwagen then described a full-scale exercise conducted by the MAC at MSP in 2012 that focused on airfield and terminal response to a tornado. (The FAA requires a full-scale exercise every three years for Part 139 airports.) Such exercises provide a no-fault learning environment and help with planning improvements.

In closing, Rollwagen urged every organization to conduct active shooter training with its employees. She recommended a free FEMA course, IS-907, geared for non-law-enforcement employees and managers and a Department of Homeland Security video called *Run. Hide. Fight*. "It's my opinion that every employer has an obligation to train their folks in this right now... That's the threat du jour we're facing."



The MAC's mobile command unit

**Airport's story** continued from page 3

new regional gates, 12 new jet gates, the light-rail transport system, and underground trams.

"Virtually every part of the airport was updated because of the...program," Hogan said.

The airport, already a major generator of jobs and economic revenue in the Midwest, plans to spend nearly \$2.5 billion to further expand services. Airport officials hope to serve more than 50 million passengers by 2030 and add 20 to 30 new airport gates and 18,000 new parking spaces.

"The expansion will be demand-driven," Hogan said. "We'll do it in stages and only as demand warrants."



A retired DC-9 is used for training on the airport.

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