

AIR TAP Briefings

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Special Fall Forum Issue: This issue of AirTAP *Briefings* features extended coverage of the 2009 AirTAP Fall Forum, held September 28 and 29 in Mankato, Minnesota.

Annual fall forum highlights ‘year in the life’ of airports

More than 70 individuals from general aviation airports and community government across Minnesota attended the sixth annual AirTAP Fall Forum, held September 28 and 29 in Mankato, Minnesota. AirTAP director Jim Grothaus noted that the theme of this year’s forum was “A Year in the Life of an Airport” and that sessions were divided according to the seasons of typical maintenance and administrative tasks at airports.



Christopher Roy

In opening remarks, Christopher Roy, who had recently joined the Minnesota Department of Transportation (Mn/DOT) Office of Aeronautics as director, said he was excited to get involved with all that



Harold Van Leeuwen Jr.

was happening with the state’s airports. Harold Van Leeuwen Jr., Bemidji Regional Airport manager and Minnesota Council of Airports president, mentioned recent negative publicity airports have received in the national news. Airport managers, he said, need to avoid becoming a target of criticism, “and the way we do that is to spend our money and do our jobs really well, and make the public aware of what they get from their airports.” The AirTAP Fall Forum is one way to do that, he added. “It gives us the opportunity to talk to other people who work at airports and learn how to tell that story.”

New CIP system will give airports ‘one-stop shop’

In the forum’s first session, **Cathy Huebsch**, assistant north region engineer with Mn/DOT, demonstrated the prototype for the agency’s new online Capital Improvement Plan, called Mn/CIP. The system is expected to launch late summer of 2010. Huebsch said the new system will allow Mn/DOT to better manage data from the 136 Minnesota airports submitting annual CIP information and therefore, better allocate funds.



Cathy Huebsch

Forum attendees were encouraged to try the system at computer kiosks set up for that purpose, as Mn/DOT is interested in getting feedback on the process before it goes live.

The CIP is used to plan and program for construction projects that develop and preserve the public-owned system of Minnesota airports. Eligible projects include planning, land acquisition, paving, lighting, navigational aids, obstruction removal, equipment purchase, fencing, noise mitigation, and other needs.

Mn/DOT’s goal for the Mn/CIP process,

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Pavement management protects an airport’s largest asset

In a session geared toward spring airport tasks, **Dan Boerner** of Mn/DOT’s Office of Aeronautics and **Bill Weiss** of Applied Research Associates (ARA) described Minnesota’s airport pavement management system (APMS), which underwent significant updates over the past year.



Bill Weiss

Mn/DOT reports on airport pavement on a system-wide level annually, Boerner said. The goal is to have at least 86 percent of pavements rated at a “good” level or better (meaning a pavement condition index, or PCI, of at least 55). Fewer than 4 percent of pavements should be at a level of “poor” or worse (with a PCI less than 40). So far, Mn/DOT has been meeting this goal, Boerner said.

In 2008, Mn/DOT contracted with ARA to update the APMS. Weiss began by explaining that pavement management is a systematic and objective approach used to track pavement inventory, assess the condition of a pavement network, identify current and projected repair needs, and develop a prioritized repair strategy that includes a budget. A documented procedure is used

for assessing pavement, Weiss said. “It’s not just me going out there and saying ‘That’s good.’”

The main objective for any APMS is to apply the right treatment, at the right time, to the right pavement. “Pavement is going to wear out... Even if you didn’t have any traffic on it, it’s going to deteriorate. The idea is to catch [problems] before reconstruction is your only option,” Weiss said. The challenge, he added, is determining the best timeline for repair.

Weiss cautioned that the APMS is not intended to replace the sound engineering judgment of decision makers. “[The system] can’t just spit out a solution,” he said. It’s also not meant to provide detailed design information, to remain a static database, or to provide a “worst first” management approach for project selection.

Weiss said the output from the system is a PCI between 0 and 100. From that, the system can prepare maintenance and repair budget scenarios—minor things such as crack sealing or patching, or more extensive repairs such as mill and overlays, he said.

“Anyone who owns or manages a network of pavement knows it’s the largest asset you have,” Weiss said. In a tough

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Safe fueling operations rely on regular inspections

In this panel session focusing on airport fueling operations, Joshua Brown, Edward Puchtel, and Craig Holmquist of O'Day Equipment discussed fuel storage, tank inspection, fuel dispensation, and other recommended user practices.

The panel began by emphasizing the importance of checking a fuel tank's vents—both the operating and the emergency vents. These tests are most important in the fall, when the weather turns colder, leading to condensation on inner tank walls; however, vents should be tested on a regular basis. The panel noted that most tanks are designed to be pressurized at three pounds per square inch (psi)—less than the tires on most four-wheelers—which is why venting is so critical. Another vital task for ensuring a safe gas tank is checking for water infiltration, which commonly occurs due to condensation in the tank or pipes. These checks can be administered either by the fuel provider or by the airport maintenance crew. The important thing is to have a mutual agreement on who is responsible, Holmquist said.

Cathodic protection (CP) is another key element of maintaining safe fuel-storage systems. If the charge of your tank becomes positive, it will begin to lose particles, which manifests as rust. The anode, which is added after the manufacture of a tank, acts as a sacrificial metal that helps keep a tank at the appropriate charge. Depending on the soil, an anode can last between 5 and 50 years. Some tanks will allow airport maintenance crews to conduct CP tests on their own; others will require a third party.

The panel noted the advantage of conducting these tests during the spring or summer, when ground water is high and the cost of a test is low. If a CP test reveals that an anode needs to be replaced, action should be taken as quickly as possible. The Minnesota Pollution Control Agency requires that airports keep a written record of their CP tests.

Next, the panel discussed the importance of removing water from fuel tanks. With water come bacteria, and although there are chemicals to destroy these bacteria, some are not suitable for aviation fluid. Fuel can be treated with these chemicals, called "biocides," at the airport or by the suppliers, but again the key is to have a mutual agreement on who assumes this responsibility, the panel said. When the diesel industry changed to a low-sulfur fuel, for example, it was determined that suppliers would add the biocide to keep in-fuel bacteria levels low. Airports should consider writing fuel-quality maintenance into the contracts they maintain with their suppliers.

Airports should also regularly inspect fuel filters. The panel suggested that maintenance crews verify that pump pressure does not exceed the limits for which the filter elements were designed. Filter elements should be changed on a calendar schedule, which will reduce the chance for biological growth within the fuel and water trapped in the filter.

It's helpful for airports to be familiar with the brand of fuel their suppliers are using. Some brands inject their own anti-icing agents; others don't. This is another quality-control measure that can be written

into supplier contracts.

The panel then discussed the basic guidelines of fuel dispensation. Jet fuel at rural airports is usually pumped from a truck at a rate of about 40 gallons per minute, whereas the flow into cars at a gas station is less than 10 gallons per minute. A static charge is created when fuel flows through a system, which is why grounding is so important.

Airports should also conduct regular hose inspections, from the most basic, daily inspection of checking for wear-and-tear to the recommended every-six-month inspection of testing hoses to maximum pressure. The panel said it is acceptable practice to reverse a hose when it begins to show signs of wear. Reversing the hose can extend its life, as most hoses are used primarily on only one end.

Finally, Holmquist, Brown, and Puchtel touched on fuel-storage maintenance. They stressed that even though most airports are relatively small fuel-storage centers, they must prioritize meeting these safety recommendations and requirements. The inspections can be conducted on several levels—by the suppliers, the fixed-base operators (FBOs), or the airport maintenance crews—and responsibility for these inspections should be explicit in FBO contracts. In addition, the panel stressed that most airports will need to update their Spill Prevention, Control, and Countermeasure (SPCC) plans, many of which were written in the mid-1990s. Any airport storing more than 1,320 gallons of fuel must have an SPCC plan, and any airport that has added fueling products or methods must update its plan.

Accuracy, timeliness critical when reporting conditions

In a panel discussion focusing on winter pavement surface condition reporting, Dave Beaver of Owatonna Degner Regional Airport, Brian Thompson of Rochester International, Kevin Baker of Mankato Regional Airport, and Jim Anderson of the Metropolitan Airports Commission agreed on the need to communicate accurate and timely information about the airport's surface conditions to pilots, although methods may vary.

Thompson said his first priority is to notify the tower about pavement conditions, then the air carriers, rather than issuing a NOTAM (Notice to Airmen). "During a winter snow event, the condition changes just like that," he said. Thus a NOTAM might be obsolete almost as soon as it's issued.

Baker said he has no experience yet using the electronic system (e-NOTAM) for issuing NOTAMs, and it seems it's being used more by airports with air service. The Mankato airport purchased a friction meter several years ago because many commercial pilots were looking for a mu reading, he said, although general aviation pilots often prefer ratings of "good," "fair," or "poor." The drawback of the friction meter is the high cost of annual calibration, Baker added.

Beaver said his airport doesn't issue mu readings. Rather, experience helps him to identify pavement conditions. "It does change quite a bit. You have to be on top of it," he said. "I try to describe it beyond just good, fair, or poor...[such as noting] if there's slushy snow, or a layer of ice." Beaver and Thompson both said they tend to be conservative when they issue pavement reports. "If it's fair to poor, I'd go with poor," Thompson said.

Beaver said he liked the e-NOTAM system because it allows the issuer to enter information directly rather than having to explain it to a briefer. The documentation is readily available, and the issuer receives quick confirmation. "You can forward the e-mail on to your users. You used to have to write it down in a binder and fax it out to everyone, and by then conditions may have changed," he said.

"But there are still a lot of challenges."

Anderson said the e-NOTAM system has made significant progress since it debuted. He encouraged users to call the hotline set up by Lockheed Martin Flight Services, which administers the e-NOTAM system, and report issues they've experienced.

Rochester International uses an online system, created by Corporate Web Services, to report conditions from a laptop on the airfield. "It's not free, but it's worth the money if you're concerned about getting that information out, without having to send 5,000 e-mails to airport users," Thompson said. The system is comprehensive because it's built on a database using every field condition report the airport has generated in the last three years. As a result, the airport is exceeding FAA requirements for record retention, he said.



Jim Anderson, Dave Beaver, Brian Thompson, and Kevin Baker

economic environment, airports need to make the best use of every dollar, and pavement management provides a cost-effective approach for tracking critical infrastructure. "If you defer maintenance, eventually you'll need to do a reconstruction, which is the most expensive option," he said.

Weiss then described a plan to slow the rate of deterioration for a newly reconstructed pavement. Ideally, he said, crack sealing would take place two to five years out, and slurry seals on asphalt pavement about three to six years out. Since additional cracks will show up, Weiss recommended annual routine maintenance after a few years.

"In general, you can expect the original pavement to last 20 years or so," he said, adding that there are many factors to consider, such as geometrics and the extension of the runway.

When Mn/DOT is evaluating pavement, its first task is to collect sources of pavement history information and begin contacting airports about pavement inspections, Weiss explained. Next, inspectors visually assess the pavement surface and the current conditions, which include the

structural integrity and the impact on operations. The third task is for inspectors to update the APMS database, organizing and summarizing the data collected. Mn/DOT then develops engineering models from the information brought back from the field. PCI prediction models are used to estimate future PCI, not distress, Weiss said.

Mn/DOT provides two types of recommendations in the report: near-term maintenance (within one year from inspection) and major rehabilitation (projected five-year plan). For near-term maintenance, treatment is most cost-effective when it's applied to pavements in generally good condition (with a PCI greater than 50) and on sections with little or no structural distress, Weiss said. Recommendations for major rehabilitation would identify sections in need of substantial repairs and costs based

on projected PCI.

Weiss closed by urging airports to keep a monthly inspection log to demonstrate that an effective pavement management system is in place.

Following Weiss, Ann Johnson of Professional Engineering Services led a group exercise on how to use Airport Pavement Evaluation reports to develop a five-year plan for an airport's pavement.



Ann Johnson helped groups work on a sample pavement evaluation report.

Huebsch explained, is to build a "one-stop shop" for airports to manage their CIPs, giving them 24-7 access, greater control of project selection, and earlier notice of funding. "It will be a very powerful tool," she said.

This new system will also enhance budget planning at the local level, give airports guidance on project planning to improve their project scoping, and provide airports with the ability to better manage their CIP requests, Huebsch said.

Huebsch explained some of the process changes for the system. The online information will be entered by the airport or its con-

sultant at any time; only the airport, however, can submit the request. The form will ask for more detailed information than in the past, and the system will also employ new terminology, distinguishing *projects* from *requests*. A project is the overall objective (such as new grading and paving), while a request is a piece of the project that's funded, Huebsch said. "We fund requests, not projects. That's kind of the big difference," she added, noting that this categorization will help Mn/DOT organize related CIP requests and help airports plan projects better by reducing common oversights.

The final step is for an airport to ensure it has actually submitted the information, Huebsch said. After a request has been submitted, it can still be edited, such as to update costs.

Mn/DOT's process will be performed annually, and requests submitted after the CIP deadline will be included in the following year's CIP. Initial priority will be based on project type—for example, pavement preservation will always score higher than a lawn mower, Huebsch said. Final priority will be based on Mn/DOT's review.

Airport managers balance technical, 'people' skills

Jeff Hamiel, executive director of the Metropolitan Airports Commission, returned to the conference, this time sharing thoughts on how to be an effective airport manager. Hamiel prefaced his talk by highlighting the importance of the public decision-making



Jeff Hamiel

process. Government is often criticized for being slow-acting, overly bureaucratic, and wasteful, he said, but "slowness is built into the process to make sure things are done properly." Airport managers, like government regulators, secure public safety; they serve a necessary function in a democracy, he said.

Engineers and pilots master certain technical skills in order to do their job. Airport managers have the same task, though their technical skill set is less visible, Hamiel continued. Among other abilities, effective administrators must learn to scrutinize and assess how money is spent, prioritize expenditures, and interpret laws and legislation. In addition, he said, administrators must possess political acumen and "human skills." He emphasized the importance of drawing

useful feedback from staff members and other colleagues and noted that self-awareness is key. Effective administrators must also master the art of conveying genuine gratitude. "Recognize the positive contributions of others," he said.

Conceptual skills are equally important. "Where will we be 5, 10 years from now?" Hamiel asked. This question, he said, should inform every decision an airport manager makes.

Administrators must be responsive to democratic institutions. "Citizens are our boss," Hamiel said. To be effective, airport managers must contribute to open debate. Decision making in the world of airport administration is a public process, and it is the duty of lifetime administrators to communicate their expertise both to policymakers and to the public, he said.

Hamiel also emphasized that airport managers should put the focus on results. "If you don't get things done, you're not doing your job," he said. Airport managers are paid to deliver products: well-maintained airports, safe travel, and efficient transfers.

Hamiel concluded by highlighting the huge responsibility that airport managers carry. "In our business, you can't make a mistake more than once," he said. "You are a public employee who has been chosen to manage an important public asset."

Hamiel then fielded questions from attendees, including one about local commercial air service. Small, outstate airports wanting to attract commercial service need to take a realistic look at their community and economics and ask who is going to buy tickets, he responded. "Do I have enough demand in this community, year to year, and potential for growth, to make [an airline] provide service to this community? Can I offer a financial incentive? If you can't do that, then you have to have the guts to face reality," he said.

When asked whether he feels Delta has lived up to its promise regarding providing service to outstate Minnesota, Hamiel said "yes." He noted that Delta has 10,000 employees in Minnesota and has struck the correct balance of large and small airplanes in its fleet.

