



Cleveland's Stepped-up **SNOW CONTROL**



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Cleveland Hopkins has new equipment and a new plan for battling winter storms—so far, so good.

Cleveland Hopkins International Airport had its first snowfall of the winter in early December. It was mild by northern Ohio standards—about seven inches of accumulation all told. But it was enough for Cleveland’s operations team to get a read on the airport’s revamped snow control effort—and the results were overwhelmingly positive.

“We were doing runways in 60 minutes,” explained Cleveland Motor Vehicle Maintenance Manager Kevin Ferguson. “This time, we did one of our 9,000-foot runways in just 12 minutes.”

Two changes from winters past explain most of the efficiency gain: new equipment and a new strategy of deploying it.

By Sean Broderick

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Last fall, Cleveland took delivery of six pieces of snow control multi-function equipment (MFE)—each one an Oshkosh H2726-series chassis equipped with one of the company's 24-foot plows and towing an M-B Companies 4622-TTB-DB broom. The collection replaced more than a dozen front-mounted plows and brooms.

Used properly, the old equipment was effective. But that effectiveness came at a price: a lack of efficiency. Cleveland found that the job done by the brooms began to degrade once the machines exceeded about 20 miles per hour, Ferguson explained. The plows moved a bit faster, but didn't leave surfaces as pristine as the brooms. As a result, clearing the airport's two 9,000-foot runways often meant spending an hour on each one—and often triggering significant operational disruptions in the process.

The obvious answer was to get more efficient equipment, but the equally obvious hurdle was finding the money. Like most airports, Cleveland was hit hard in 2001, cutting its budget 20 percent “overnight” after 9/11, noted Cleveland Hopkins Airport Commissioner Fred Szabo. Over the next few years, Cleveland's dominant carrier, Continental Airlines, wasn't eager to absorb any unnecessary cost increases at the airport, and “we heard that message loud and clear,” Szabo said.

Over the last several years, however, U.S. carriers—including Continental—have been on much more solid financial ground. Continental reported a net income of \$343 million in 2006, part of what's expected to be an aggregate net profit of \$2 billion to \$3 billion for the year—excluding bankruptcy-related costs—for U.S. airlines, according to Air Transport Association projections. (U.S. carriers haven't posted a cumulative annual net profit since 2000.)

For airports, across-the-board airline profits often mean that carriers shift from a cutting-costs-at-any-cost mentality



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to one that at least considers the benefits of spending money to improve efficiency. Since airports aren't exactly at peak efficiency when runways are closed for snow removal, bolstering that capability is something that carriers can get behind when financial pressures ease. "Once there was some recovery, I think the airlines started to see the value of making a capital investment like this," Szabo said.

Once Cleveland set its sights on better snow-removal equipment, there was little doubt which way it wanted to go, airport officials said. MFE suppliers note that their equipment's popularity is gaining as operators and the airlines they serve realize that the equipment's higher expense can be offset in short order by cutting down on runway clearing times.

"The interest in multifunction equipment has been growing at North American airports in recent years from a purely economic standpoint," said Steve Karlin, snow removal product manager for Oshkosh Truck. "While testing in the past has proven that brooming only without plowing provides the best coefficient of friction on the

runway surface, conditions don't always allow that practice. So the trick is to maximize the cleaning ability of a multifunction unit by means of superior maneuverability and superior brooming."

Cleveland officials consulted colleagues at several MFE-equipped airports, including Chicago O'Hare and Newark. Szabo said the MFE users confirmed what Cleveland suspected: "it's hands-down the way to go."

The next step was to put several machines through their paces. Cleveland's Ferguson managed to get three MFE suppliers to loan his airport demo models at no cost. All three performed admirably, Ferguson said, but the Oshkosh package was the least expensive: \$453,000 per unit for six complete units. "Price was a big deal," Ferguson confirmed. "We felt the performance was a good value for the money."

The equipment isn't the only new thing in Cleveland's snow plan—in fact, the entire plan itself has changed. Following consultation with other airports and a very



informative snow symposium hosted by Cleveland in October 2005 and attended by representatives from seven other airports, Cleveland implemented a snow circuit plan.

Simply put, a circuit plan identifies specific strategies for clearing airfields based on certain variables, such as prevailing winds and traffic flow. Each strategy calls for runways to be cleared in a specific order, which allows the snow removal caravan to proceed on a pre-determined path around the airfield. The plan is crafted with input from all stakeholders—including the airlines and FAA—meaning that nobody is surprised come execution time.

The result, said Szabo, is a much more efficient operation. Not only are the snow crews on the same page from the start, but air traffic control is as well. That means potentially time-consuming tasks like runway crossings are handled more efficiently, since controllers can anticipate when the caravan will be ready to move from place to place by referring to the circuit plan.

“When we put the plan together, we developed it with everyone at the table,” Szabo said. “The first versions were very good, but once we started to test it, we started to work out some of the bugs. In a circuit, you have to end up at the right spot to keep it flowing.”

In the circuit plan, the MFE make two passes on each runway—one up and one down. Cleveland uses five of its new snow-removal machines at a time, saving the sixth as a spare. It expects to get 10-15 years of service out of each MFE.

“The number that we have is adequate for what we need,” said Szabo, noting that the early December storm didn’t exactly push his equipment to the limit. However, he added, “I’m confident that we’re going to be able to handle the big storm.”



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Typical cross section of runway or high speed turn-off. (Not to scale.)