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A de-icing operation by KLM at Amsterdam's Schiphol Airport. KLM was founded in 1919, making it the oldest carrier in the world still operating under its original name.

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Amsterdam's Schiphol Airport Recycling Waste Glycol

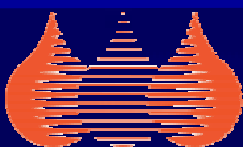
In May 2006, Amsterdam's Schiphol Airport started recycling waste aircraft deicing fluid using Inland Technologies' Glycol Concentrator. Results of the pilot project have clean water going back to the storm water system and reclaimed glycol being used as heat transfer fluid in Europe.

Evides Industriewater, the operator of the Schiphol wastewater treatment plant, recognized the issues around treating waste aircraft deicing fluid glycols some time ago and started looking for technology-based solutions to deal with the problem. After a search for proven glycol recycling systems, Inland Technologies' Glycol Concentrator was selected as the system that

would be part of the pilot study.

"Initial results have been positive and we expect to recycle five million liters of glycol contaminated effluent per year using the Glycol Concentrator," said Bert van Rooij, Evides' plant manager at Schiphol. "We will use this system to recycle the effluent containing the most waste chemical – typically fluid with more than 5% glycol," he adds.

On the operations side, Schiphol's airport authority has taken aggressive steps to contain the waste chemical used during de-icing operations. These measures include limiting the number of places where deicing can take place and expanding the reservoir holding capacity for glycol effluent. .../2



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...Schiphol [continued]

“The beginning stages of the pilot study presented some challenges,” said Momo Starcevic, Inland’s senior engineer on this project. “Each airport where we provide services is unique but Amsterdam was a very special case in that the carriers use 100% Type II thickened de-icing fluid,” he said.

Due to the presence of these thickening chemicals, a pre-treatment system to remove the polymers was tested and implemented before full recycling commenced. “The result is a customized solution that works for this airport,” said Starcevic. “We are looking forward to getting some longer term results as we continue but are optimistic about the project going forward,” he adds. ✱



Commissioning of the Glycol Concentrator at Schiphol. The unit can process about five million liters of glycol effluent in a year.

Did you know....

- ✱ At four meters below sea level, Schiphol is the world's lowest major commercial airport.
- ✱ Last year, the airport ranked fourth in Europe in terms of passenger traffic with over 44 million passengers.



Rob Alvarez, Inland's Site Supervisor at Washington's Reagan Airport, uses a T-bar handle to open the GlycolGuard™ drain. The drains are closed prior to de-icing taking place and opened once weather permits.

GlycolGuard™ Drain Blocks

Based on input from customers and years of field experience, Inland is now manufacturing the GlycolGuard™ drain block inserts. “Our primary goals were to maximize containment of glycol effluent and minimize maintenance,” said Mike Svedruzic, Inland’s US Operations Manager.

“One feature we wanted was a downward opening valve in order to avoid clogging and debris build-up,” Svedruzic added. These are very long life units and the design limits the maintenance to an annual inspection of the valve assembly and a leak test.

Another key design feature is the shallow basin. “Typically, we are able to recover fluid inside the grate with the Glycol Recovery Vehicle or wandering hose attachment without removing the cover,” said Svedruzic. This level of effluent recovery ensures that even the strictest environmental regulations can be met.

While initially developed to provide environmental protection against waste aircraft de-icing fluid, the units work year-round to provide containment for liquid spills of any type. ✱

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Aerial view of Vancouver International Airport.

Located in the mouth of the Fraser River, the airport has three main de-icing pad areas. The south pad [coloured blue] was added recently to reduce wait times during heavy de-icing periods.

During the November 2006 snow storms, the new pad resulted in reduced wait times for the carriers while the airport maintained 100% compliance with environmental legislation that limits glycol runoff.

New De-icing Pad Improves YVR Winter Operations

A newly constructed de-icing pad at Vancouver International Airport has reduced wait times associated with aircraft winter operations. In an area where winter weather seldom hits with any force, the new “south pad,” as it is known, was used extensively during heavy snow conditions experienced in November 2006.

“The recent stormy weather was the trial run for the new pad and everything went according to plan,” said Greg Lang, duty manager for WestJet, one user of the new common-use pad. “The new pad was developed from a collaborative process with the various airport stakeholders and the results have been very positive,” he adds.

The south pad development process started at a Ramp Operating Committee meeting at Vancouver airport. The concept was raised ▶

to address the capacity issues that can come up during periods of heavy de-icing. When the large east and west pads are both being used, long taxi times can be experienced. This is complicated by the fact that there are several de-icing service providers at the airport.

“The south pad development included inputs from several operational areas to ensure all aspects of the implementation were covered,” said Lang.

Vancouver airport’s east pad was designed to accommodate aircraft gated on the East Chevron of the International Terminal Building. The west pad was designed primarily to handle aircraft gated on the West Wing of the International Terminal Building and on the C and B Piers of the Domestic Terminal.

The new south pad was designed for aircraft gated on the A and B Piers of the Domestic Terminal Building.

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Photo: G. Lang

The “fit test” of the new south de-icing pads at YVR. First, operational safety was verified with all winter operations equipment onsite. Second, containment of waste glycol was planned for. Containment berms, drain blocks and a collection tank were installed to ensure legislation governing glycol runoff was followed.

...Vancouver [continued]

The Vancouver Airport Authority approached WestJet regarding the project and after the site was selected, a “fit test” of the area was carried out with the chief pilot, Paul Ysselmuiden. “Safety was everyone’s first priority,” said Ysselmuiden. “We had to be 100% certain the area would work operationally with aircraft and de-icing equipment in the same area,” he added.

To recover the waste effluent following de-icing, Inland uses a combination of vacuum trucks and Glycol Recovery Vehicles to ensure the area stays within the limits set out in Canada’s federal environmental legislation.

Outfall testing after the 25-year storm at the end of November showed that all results were well within the limits set out by the Canadian Environmental Protection Act.

“We were happy to participate in the development of a safe and operationally efficient pad,” said Lang. “During the recent storm, the south pad helped alleviate traffic, reduce delays and ultimately save money.” *

Editors Note:

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