



Ontario: Municipal Airport Automated Weather Observation System (AWOS)

Enhancing safety and efficiency



Case Study Summary

Application

Air ambulance, private jet traffic, and chartered flights

Location

Manitouwadge, Ontario, Canada

Products Used

AeroX Stream 200, SkyVUE8, CS125, CS140, CR1000X

Participating Organizations

Manitouwadge Municipal Airport

Measured Parameters

Visibility, precipitation type and intensity, cloud height

Background

Manitouwadge Municipal Airport is located 48 km (29.8 mi) north of highway 17 on Highway 614 in Ontario, Canada. The airport's asphalt runway is 1,097.3 m (3,600 ft) long by 30.48 m (100 ft) wide, and it features medium-intensity LED lighting and LNAV/LPV approaches. The airport serves a range of operations, including medical flights, fire services, mining, chartered flights, and private jet traffic. Given the diverse and critical nature of the flights it handles, the airport needed a reliable weather observation system to ensure operational safety and efficiency.

When the airport's previous AWOS system was struck by lightning and became inoperable, airport operators sought a more advanced and dependable solution from Campbell Scientific.



Improved Safety and Efficiency

Campbell Scientific's AWOS system provides Manitowadge Municipal Airport with the critical weather data necessary to support safe and efficient operations. The system includes several advanced components.

- ▶ The **AeroX™Stream 200 Field Data Collection Unit (FDCU)** serves as a central hub, collecting data from the sensors and sending it to the Data Processing Unit (DPU) for processing and distribution. The unit also manages power distribution and provides battery backup to ensure continuous operation during power outages.
- ▶ The **CS125 Present Weather and Visibility Sensor** and the **CS140 Background Luminance Sensor** provide accurate data on visibility, precipitation type, and intensity.
- ▶ The **SkyVue™8 LIDAR Ceilometer** measures cloud heights with precision, which is essential for safe landings in poor visibility.
- ▶ The **CR1000X Measurement and Control Datalogger** acts as the brain of the system, seamlessly collecting and transmitting data from all sensors to ensure that pilots and airport operation management always have access to real-time weather information.
- ▶ **CampbellAero™ Software** is Decision Support Software (DSS) that delivers real-time data reports for sharing with pilots via radio communication. This software is compliant with International Civil Aviation Organization (ICAO) and World Meteorological Organization (WMO) standards.

These sensors work together to deliver comprehensive weather data that enhance the decision-making process, whether for routine operations or critical emergency flights.

Confidence in the Sky

With the modernized AWOS in place, Manitowadge Municipal Airport has reduced the minimum descent altitude (MDA) from 304.8 m (1,000 ft) to 76.2 m (250 ft), which means that aircrafts can now land safely—even in low-visibility conditions. This is particularly critical for air ambulance flights where time is of the essence and for fire services, which operate under demanding and variable weather conditions.

The system also helps manage private jet traffic and chartered flights, ensuring that pilots always have the most accurate, up-to-date weather information. With the system's advanced sensors, pilots can confidently plan their approach and landing, reducing the risk of missed approaches or diversions due to unexpected weather changes.

Exceptional Service in Action

When one of the AWOS sensors malfunctioned during Christmastime, Manitowadge Municipal Airport's team reached out to Campbell Scientific for support. Despite the holiday season, the response was prompt and efficient. Here's

what two members of the airport team had to say about their experience:

Marcel DeMars, Manager of Bylaw Enforcement and Airport Services:

"Last Christmas, we had a unit stop transmitting, so we reached out to our technician at Campbell Scientific Canada. Even though he was on vacation and the Canadian office was closed for the holidays, we got an immediate response from a technician in the U.S. who remotely accessed the system and resolved the issue. That's the kind of service we appreciate. This is what sets Campbell apart for us—even though they're far away, they never leave us hanging."

Roland Smith, Airport Attendant:

"The one thing that really matters is the service. If you get a great deal upfront but poor service afterward, it doesn't matter how good the deal was—you'll regret it. But when you pay for quality and receive outstanding service, it's worth the investment. That's exactly what you should expect."

This swift and effective resolution showcased Campbell Scientific's commitment to customer support, even during the holidays, reinforcing the value of our reliable products.

Conclusion

Manitowadge Municipal Airport's upgrade to Campbell Scientific's AWOS system has enhanced their operational efficiency, safety, and weather information reliability. The system provides critical weather data to both airports and pilots, reducing risks and ensuring smoother flight operations. Paired with exceptional customer service—especially during times of unexpected challenges—this solution delivers long-term value for both routine and emergency operations at the Manitowadge Airport.



CampbellAero™ Software

View online at: www.campbellsci.ca/ontario-municipal-airport-awos 



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