Schwank Case Study:
Improved comfort with 65% energy and carbon footprint reduction

"The benefits for Air Canada have been improved working conditions, greater efficiency, and the ability to reduce aircraft maintenance costs."

Brian Sikorski,
Project Manager,
E-Factor Engineering Inc.

Equipment
supraSchwank
TruTemp infrared thermostat

Facility
55,000 square-foot aircraft maintenance hangar

Results
- Over $200,000 in annual energy costs within first year
- 65% energy and carbon footprint reduction

The Facility

Air Canada, Hangar 101 located in Calgary International Airport, AB, is a 55,000 square-foot aircraft maintenance and operations facility with an average ceiling height over 64 feet, 1.33 air changes, and an estimated heat loss of 7,200 Btuh.

Air Canada is a full-service airline and the largest provider of scheduled passenger services in the Canadian market, the Canada-U.S. transborder market, and in the international market to and from Canada. Together with its regional affiliate Jazz, Air Canada serves over 33 million customers annually and provides direct passenger service to over 170 destinations on five continents. Air Canada is a founding member of Star Alliance, and offers the world's most comprehensive air transportation network.

The Issue

Air Canada was aggressively looking for ways to improve and satisfy employee comfort, reduce costs, and conserve energy. Air Canada contracted the services of E-Factor Engineering, an energy contractor specializing in HVAC design and energy retrofits, to complete an operational review of its Calgary aircraft maintenance facilities and to make recommendations to improve comfort while saving energy.

Schwank luminous [high intensity] heaters were selected, as they provide the most energy-efficient comfort to large industrial facilities, such as aircraft hangars, that have larger energy requirements (Btuh/Sq Ft) due to large infiltration loads, vehicle access requirements, poor insulation, and high ceilings.

Schwank
INNOVATIVE HEATING SOLUTIONS

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AIR CANADA

Implementation

Working in cooperation with E-Factor Engineering, Schwank designed, and implemented a major heating system upgrade for Air Canada's hangar 101. Forty eight supraSchwank luminous heaters [high intensity] were installed. In addition, a new BMS system, including five TruTemp infrared thermostats with automatic setback and recovery capability, replaced the existing 1980's vintage controls.

Only Schwank luminous heaters can eliminate "cold spots" in hangars, because they do not heat air directly, and are not subject to air stratification. They are also less affected by open doors and high infiltration or air exchange rates.

Results

The installation of high-efficiency luminous infrared heaters, along with revisions to the control strategies saves Air Canada over $200,000 in annual energy costs. In the first year alone, fuel costs for hangar 101 were reduced from $333,000 to $120,000. Air Canada also achieved a major reduction in CO_2 emissions from 1,400 tons to 500 tons.

Additional reported benefits included improved comfort, reduced personnel complaints, improved indoor air quality, and extended equipment life with reduced maintenance and low life cycle cost.

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