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ABB drive makes British Airways Flight Simulator quieter

British Airways (BA) Pilots are benefiting from a quieter Flight Simulator environment following the installation of ABB drives in an Air Handling Unit (AHU) at their Flight Training Centre near London's Heathrow Airport.

The AHU is used to cool the flight deck and instruments on one of their Boeing 777 Flight Simulator's. Previously the AHU's fan motor was run at constant speed but generated high noise levels. By using a 5.5 kW ABB HVAC drive at 39 Hz, the same flow rate can be obtained at a lower motor speed, resulting in a reduction in noise from 80 dBA to 73 dBA. Reducing the unwanted background noise generated by the supply fan has made it easier for the crew to hear conversations and spoken instructions.

The critical nature of the Flight Simulators means that there are two AHUs: one in duty and the other in standby mode. Both AHUs are fitted with a 5.5 kW ABB HVAC drive. Supply ducts from each AHU feed air to the simulator. If the duty AHU fails or requires maintenance, a mechanical damper can be switched between the outlets of the AHUs to maintain airflow.

The switchover between AHUs is managed by a pressure signal to the building management system (BMS). This maintains a pressure of 860 Pa as the dampers are opened or closed, by ramping the speed of the motors up or down as required.

In addition to the noise reduction, the drives cut energy costs, with a payback of less than a year. Dennis Doody, Senior Engineer with BA Flight Training says: "As well as this initial project, we have also used ABB drives on two other AHU installations, with significant savings in energy costs."

Doody continues: "A major requirement for a Flight Simulator is its fidelity to the environment that pilots experience in the actual aircraft. The noise from the AHU is not present in the real aircraft so we had to find a way of removing the unwanted noise, to make training easier and make the experience more realistic and relevant."

The BA Flight Training Centre operates simulators for a number of Boeing and Airbus aircraft that are operated by them, providing flying training for its own aircrew and those of many other passenger and cargo carriers.

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Caption: British Airways pilots are benefiting from a quieter Flight Simulator environment following the installation of ABB drives in an air handling unit.

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