

# BOEING 727-200 POSITIVE PRESSURE VENTILATION TESTS CONDUCTED AT ONTARIO INTERNATIONAL AIRPORT

by  
ASO Dan Pierce C.M.F., Ontario International Airport (California)  
John Thompson, Operations Manager Tempest Technologies

## TEST OBJECTIVES

Aircraft Rescue Fire Fighting (ARFF) personnel are working to adapt currently produced stair trucks into 'Aircraft Interior Access Vehicles' (AIAV) for ARFF operations since aircraft are getting larger and carrying more passengers. Airport firefighters must have the ability to rapidly access the aircraft cabin interior to rescue incapacitated passengers and crew, and also perform timely fire suppression. Due to the size of existing aircraft like the B747 and newer aircraft such as the A380, airport firefighters are severely challenged in minimizing casualties in the event of an interior cabin fire.

On June 22, 2006, positive pressure ventilation (PPV) tests were conducted at Ontario International Air-



ONT STAIR 150



TEMPEST 27-INCH HYDRAULIC BLOWER

port (ONT). The tests were conducted to examine the effectiveness of aircraft PPV and also to compare two new Tempest Technologies hydraulic blower models for operation and performance. An Ontair Accessair Stair Truck provided a platform for the blowers. One hydraulic blower was a 24" blower with a standard shroud and the other an extended 27" shroud.

## VENTILATION TO SAVE LIVES

The concept for using PPV to ventilate aircraft is to mount a hydraulic blower on top of the AIAV platform to provide positive pressure ventilation (PPV) for firefighters. This must be done without blocking the work area or ingress/egress to and/or from the aircraft cabin. Additionally, the tests were conducted to determine the possible characteristics of PPV smoke removal in an aircraft with all doors and hatches opened simultaneously. There was concern that the more openings being used, the less smoke and heat would be removed instead of having fewer openings in the fuselage. The only way to understand this smoke behavior was to actually create smoke in the aircraft cabin interior by using smoke generators to run a series of tests.

Captain Michael Allomong, Airport Safety Officer (ASO) Danny Pierce, both from ONT ARFF, and Dexter Coffman of Tempest Technologies were able to use an ONT owned B727-200 aircraft to facilitate the tests.