



CONAIR TRAINING + TACTICS CENTRE

THE WORLD'S LARGEST AND MOST COMPREHENSIVE
AERIAL FIREFIGHTING TRAINING FACILITY

Photo Credit: Alexandre Dubath

“One of our most recent innovations is our Training and Tactics Centre. It is the first commercial aviation mission-based training system built to the standards of military mission simulation and debriefing. It was built to provide our pilots the ability to perform mission-based procedures within the safe environment of flight simulators. Everyone learns by doing and the repetitive practice of using real-life scenarios in a controlled setting creates pilots that are better prepared for fighting fires in the real world.” says Jeff Berry, Director Business Development at Conair Aerial Firefighting.

PHASE ONE

Phase one was completed with the construction of the K Barry Marsden Training Centre, housing a Transport Canada Level D certified RJ85 full motion simulator, including specialized airtanker systems in the cockpit plus aerial fire specific graphics including smoke, fire, and retardant lines. This specialized enhancement gives pilots the ability to practice mission-based training in a setting that more accurately reflects the conditions aircrews face in real-life.



Protecting Our World

PHASE TWO

Phase two included certification of the Level 5 AT802 Flight Training Device (FTD) by Transport Canada, with both wheels and floats. This FTD is one of the only two certified AT802F simulators in the world.

Conair's simulator is convertible, designed to mimic the performance of both the amphibious Fire Boss and wheeled Air Tractor AT802, providing pilots with a virtual training platform that offers true-to-life flight scenarios, including firefighting missions.

Equipped with real avionics, a KAWAK throttle quadrant and Retardant Delivery System, the simulator has displays identical to the cockpit of the actual aircraft. Flight control feedback and all instrumentation react to changing environments, with wind speed, visibility, temperature, clouds and turbulence being controlled on the master Instructor Operating Station.

The FTD also features a 180-degree high-definition visual display, vibration system and programable firefighting scenarios, enabling pilots to practice a range of fire suppression techniques within immersive and dynamic circumstances. A key advantage of the simulator is that it offers the pilot the ability to practice drops and scoops in complex, and often unpredictable, conditions. In addition, pilots have the opportunity to exercise emergency procedures within a safe setting that significantly reduces the risk to both the pilot and the aircraft.



PHASE THREE

The third phase has been completed. It is the Mission Training System (MTS) and is the first in the world of its kind. This specialized simulator platform incorporates multiple integrated FTDs, with pilots operating together in a synthetic wildfire environment. Both Bird Dogs, or lead planes, and airtankers practice together over a simulated fire, mimicking the complex aerial arena real life conditions create.

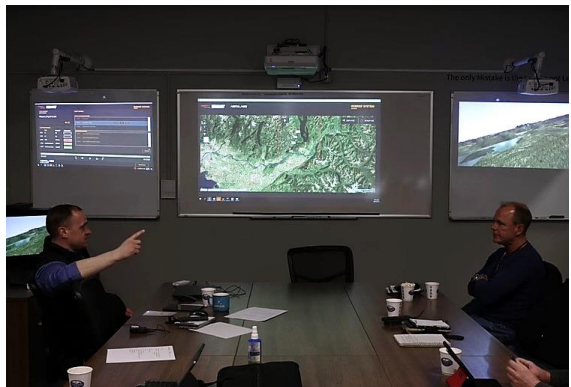
FTD types for the MTS include the Dash 8-400, RJ85, C-208, TC-690B and AT802, wheeled and Fire Boss. The FTDs have extremely high-resolution graphics with a 200 degree by 45 degree field of view. All FTDs can be engaged in the same mission at the same time, with all pilots being able to see and communicate with each other during the simulation, exactly as they would in reality. Very high fidelity tactical training devices, with a level of realism and functionality comparable to a level 5 FTD or full flight simulators, ensure the maximum all-round training benefit for both pilots and Air Attack personnel.

Fire behavior is created using algorithms which take into account relative humidity, terrain, wind, fuel type and temperature producing an accurate visual representation of forest fire behaviour.

Training scenarios are created to immerse the flight crew into situations that would be otherwise impossible to replicate due to the inherent danger of the situation. Pilots train with the Government customer counterparts (Air Attack Officers) to enhance the crew resource management necessary when operating in a dynamic environment.

THE DEBRIEF

The most important aspect of mission-based training is the debriefing, where errors are identified, and lessons are learned. Audio and video from every mission is recorded so that the instructor can playback the mission for the group debrief from the vantage point of the cockpit of any of the aircraft from a camera within each FTD, from the outside of any aircraft at any angle, or from a "God's eye" or tactical view. The playback is synced with the communications so that all pilots and Air Attack officers can see and hear what was happening at any given moment during the exercise. It is designed to teach the crews the situational awareness that is nearly impossible to replicate in practice without a real fire and busy airspace.





A QUANTUM SHIFT IN AERIAL FIREFIGHTING TRAINING

Troy White, BC Wildfire Service Air Attack Officer, commented “Wildfire simulation training involving multiple agencies and staff, particularly pilots and air attack officers, provides greater benefits than single-agency training. The relationship between professional pilots and aerial firefighters is critical for safe and effective aerial wildfire suppression operations. The use of flight simulators that incorporate additional wildfire simulation software provides a learning environment free from the stress and risk associated with using aircraft in low-level flight operations. The simulation exercises offer a cost-effective method to build skills and strengthen procedural competencies. The greatest limitations in wildfire simulation training are the initial investment and annual maintenance costs to support the simulator program. However, the alternative is far more costly — both financially and in exposure to risk.”

Looking into the future, Conair envisions supporting & connecting agencies around the globe to protect our world.

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TACTICS CENTRE**