



# Is It Time?

CONAIR'S ANSWER TO THE FUTURE OF AERIAL FIREFIGHTING

Photo Credit: Herve Dermoune

## IS IT TIME TO ENHANCE CURRENT AERIAL FIREFIGHTING RESOURCES?

The wildfire landscape is changing globally. Fire seasons are longer, and the number of wildfires is increasing, larger in size and verocity. As a result of these changes, there are associated losses, of life, infrastructure and resources. In many regions it is time to augment or diversify available aerial firefighting resources, increasing capacity and capability to meet future demands in wildfire control.

For over 50 years Conair has made strides to lead the industry, continually investing in better ways to support wildfire management, partnering with government agencies, firefighters on the ground, and communities. The company recognizes that the time has come to make a committed step towards creating a versatile aerial firefighting airtanker that can augment existing fleets, both their own as well as their customers. Conair's answer to the future of aerial firefighting is the Q400AT, the most advanced airtanker in the world.

When evaluating over 29 different aircraft types, Conair looked for a land-based airtanker that could serve as a perfect complement to an amphibious airtanker fleet, with the Q400AT laying long lines of retardant to slow the spread of flames while a pair of amphibious aircraft douse the interior of the perimeter with water, cooling fire progression to enable ground crews to advance towards extinguishing. The airtankers do not put out wildfires, firefighters on the ground do.

Purchasing or contracting a new aircraft is a considerable investment, particularly for jurisdictions with shorter fire seasons. To maximize the return, the Q400AT is able to be modified into a Q400MR, featuring a multi-role ability to quickly be reconfigured for either airtanker, cargo, passenger, combi-transport, or medical evacuation missions. This enables the aircraft to be used year-round for a multitude of missions, outside of the fire season.

## IS IT TIME MODERNIZE AERIAL FIREFIGHTING RESOURCES?

Planes used to fight wildfires as airtankers are generally converted from older model aircraft. Often these airframes have flown long hours over a period of decades in military or commercial use before being retired from service. The aircraft are then repurposed into airtankers, outfitted with special tanks to drop retardant, water or gel on flames. Although aerial firefighting airtankers fly less hours than in their previous capacity, they are flown into more demanding scenarios, scenarios they were not originally designed to do. Continuously dropping low, unloading the weight of a payload, and rapidly climbing adds stress to the aircraft. It is natural for the metal components to start to wear after extended periods of use. Even the smallest fissure, unseen by the human eye, can lead to an incident.

At Conair, we go to ever-increasing lengths to ensure our airtankers can withstand the added pressure of another fire season. For example, each airtanker undergoes extensive annual testing and inspection processes to identify metal fatigue, including more sophisticated processes such as x-rays to locate

sub-surface cracks without harming the integrity of the aircraft structure. Over time, appropriate and advanced testing will locate more and more maintenance requirements in aircraft designed to obsolete standards, amounting to increased risk, costly repairs, limited replacement parts, and time away from fighting fires.

Conair is proactive in their response to the need to modernize fleets, keeping firetrucks in the sky when the call comes. The company's Q400AT is the newest aerial firefighting airtanker in the world. While its mission is fire suppression, it is the Q400's environmental performance that is setting the standard for future aerial firefighting aircraft. The latest generation of turboprop offers composite propulsion with advanced swept blade propeller design, efficient lift systems, effective aerodynamics, and a light but robust frame, all contributing to lower emissions, fuel burn and noise, reducing its environmental impact compared to airtankers of similar capacity. Fast, fuel efficient and flexible, the specialized Q400 airtanker produces 30 percent less emissions than aircraft of similar size.



But its sustainable features do not come at a cost to aerial firefighting performance. The high capacity, Canadian-made, de Havilland aircraft is outfitted by Conair with a custom, purpose-built tank. The team of Conair engineers designed the tank to deliver a 10,000 litre payload with the ability to provide multiple coverage levels from a single drop. With a quick response on dispatch, the Q400 is holder of three 'Climb to Time" turbo-prop records. The fast climb to cruise time means reduced time from base to fire and return. The aircraft is designed for both Initial Attack as well as Support Actions, offering tactical flexibility, capable of consistent drop speeds even in steep, rugged terrain and diverse geography.

To enhance its superior aerial firefighting performance, the Q400AT flight deck is equipped with a specialized Flight Envelope Awareness System, which provides the pilots with enhanced safety awareness information, such as slow speed awareness and angle of attack detail. Conair places safety of crew first and foremost, proactively improving management systems with innovative technologies that go beyond regulatory compliance.

Conair believes that the Q400 airtanker is the answer to creating a modern airtanker fleet, a specialized aircraft that offers a sustainable, long-term aerial firefighting solution.

Photo Credit: Mathieu Ranc





Photo Credit: Tom McKibbin

## IS IT TIME TO OUTSOURCE OWNERSHIP AND/OR OPERATIONAL SUPPORT FOR AERIAL FIREFIGHTING FLEETS?

Some government agencies own their fleet of aerial firefighting aircraft, with many managing operational support such as maintenance and flight crews. By doing so, they must manage the operational risks of aging aircraft, which often leads to unexpected costs when heavy maintenance is required, such as replacement of engines or landing gear. These large spikes in expenses are challenging for governments to absorb. To complicate matters, aerial firefighting aircraft need replacing over time, or increased fire behavior dictates the need for additional aircraft, placing further stress on already cash-strapped agencies.

A long-term partnership approach can place the financial risk on Conair. All maintenance forecasted and unforecasted, including overhaul of major aircraft components, can be included in a multi-year contract, leaving the government agency to pay for only time-in-use.

This solution would take the onus off governments to maintain costly infrastructure year-round or maintain a large spare parts inventory. Recruitment and staffing would also be the responsibility of Conair under a partnership approach, ensuring consistent delivery of services, with faster response times, enhanced training, and safer outcomes.

Governments benefit from access to advanced and reliable aerial firefighting services. This partnership format allows governments to move into the future of aerial firefighting while taking advantage of the economies of scale a larger private operator provides. With a contract arrangement in place, the government agency remains in control of their wildfire program while alleviating the unpredictability of aircraft ownership.