

Hydro One

Hydro One is celebrating 65 years of continuous helicopter operations in 2014.

That confirms its place as Canada's oldest helicopter operating business and the world's longest serving electric utility to own and fly helicopters.

Since 1949, the utility's helicopter fleet has crisscrossed the Ontario hinterland patrolling, maintaining and building a vast electrical grid that provides power to millions of households and residents.

Today, Hydro One operates a high-performance fleet of seven single-engine Airbus Helicopters AS350 B2 and AS350 B3 AStar's.

Turbine Helicopters

In the summer of 1959, Ontario Hydro took a major step when it became the first utility in North American to buy a turbine-powered Jet helicopter and second Canadian customer for the Alouette II.

Ontario Hydro bought a turbine powered Sud Aviation SE3130 Alouette II that featured a much larger cabin, more powerful engine and about twice the lifting capacity of a piston-engine helicopters.

The turbine-powered Alouette II attracted a lot of attention in Toronto in 1959 where the only turbine aircraft you could see were turboprop-powered airliners and jet powered military trainers and fighters.

First Airbus Helicopters

Through the 1970's and 1980's, Ontario Hydro expanded the use of helicopters to support its province wide operations.

New medium turbine helicopters helped to build wooden pole lines, high voltage transmission lines and precisely drop linemen onto live voltage lines and towers to perform maintenance and repairs.

In 1991, the utility became an important Airbus helicopter customer as it began renewing its light and heavy helicopter fleet.

The five-seat AS350 B2 AStar was selected and a heavy lift AS332 was added to expand the utility's capability to build new high voltage transmission lines and help maintain older lines.

The Super Puma operated for several years while the number of AStar fleet grew over 20 years to become the fleet standard.

Hydro One Today

Hydro One Networks Inc. was born in 1999 when Ontario Hydro's delivery and generation functions were divided into separate companies.

Today the utility operates a fleet of eight helicopters including four Airbus Helicopters' AS350 B2's and three AS350 B3's.

"We use helicopters as a force multiplier to provide efficiency and cost savings," explains Chief Pilot John Bosomworth. "They are used for power line inspection and maintenance work that is generated by our five-year work plan."

By Kenneth I Swartz

The AStar fleet fly from the main helicopter base at Lake Simcoe Regional Airport, north of Toronto and from four regional bases across the north of the province in Sudbury, Timmins, Thunder Bay and Dryden.

Hydro One has prime responsibility for 30,000 kilometers of high voltage transmission lines running to major centres and 120,000 km of distribution lines serving 1.2 million consumers.

The helicopter fleet has grown from six to eight aircraft in the past decade with the addition of three high power AS350 B3's and today flies a total of 4500 hours a year for a wide variety of missions including; inspection and maintenance of provincial high voltage transmission lines, forest and vegetation control work and a multitude of other tasks.

"The AStar has been a very good platform for us and we have had many successes with the aircraft over the past 23 years. The helicopter offers excellent visibility for the pilots and observers and the is extremely stable and reliable, which is absolutely essential for our external platform work."

"The aircraft provides excellent value in terms of utility and of weight capacity and the AS350 B3 with dual hydraulics has a higher lift capacity allowing us to lift external loads up to 2500 pounds."

"We've also seen a steady progression in the technology available in the helicopter and it has added real value in our job," Bosomworth. "We used to fly with large rolled maps and now all our transmission and distribution lines are uploaded to the AStar's GPS navigation system."

From May to September, two AS350 B2's are equipped with a platform that attaches outside the right passenger cabin. The platform allows linemen to work outside the aircraft on transmission lines from a hovering helicopter and it is also used to safely transfer linemen to and from the tops of poles and towers during a hover. This in-house program has grown to be very successful and is widely utilized across the province in remote areas.

Hydro One also utilizes the high payload capability of the AStar, especially the AS350 B3, to build wooden pole distribution and transmission lines. This includes flying work crews and their equipment to clear the right of way and dig the holes for the poles and using the helicopter's external hook to fly the 40 to 100 foot long poles to the site and place them in the ground, many times having to thread the pole through existing overhead wires.

Hydro One will take delivery of a new twin-engine Airbus AS355 NP helicopter in late 2014 to further enhance its operational capabilities. The physical configuration of the AS 355NP is identical to the AStar's used by line crews and the twin-engine will provide an additional margin of safety for missions.

The AStar fleet especially proves its worth when power to customers is interrupted by damage to a transmission or extensive distribution line caused by a storm, natural event or accident, especially in winter line crews also have snow and extreme temperatures to contend with.

When an ice storm knocked out power to more than 180,000 customers on December 23, 2013 the helicopters were part of the first response effort.

"The initial responsibility of the helicopter crews is to find the source of the problem. Once the problems were identified, the helicopters were used to transport work crews to the remote repair sites all of which were covered in snow."

The AStars also support Hydro One's brush control programs that control the regeneration of vegetation to ensure it will never threaten the overhead lines. The helicopters are used to regularly monitor the vegetation along the 230 and 500 Kilowatt right of ways and fly the work crews to the field that perform manual brush control.

"Using the helicopter provides time savings and enhances the workplace safety conditions for our crews working in remote areas," says Bosomworth.