

## French Startups Strive To Innovate Firefighting Aircraft in Europe

- > CANADIAN OR U.S.-MADE TYPES DOMINATE EUROPEAN FLEETS
- > COMPANIES ARE ADAPTING THE ATR 72 FOR LAND-BASED AND SCOOPER FIREFIGHTING MISSIONS

**Tony Osborne** Rome

**A**mid growing concerns about the worsening wildfire threat, several French startups have embarked on an effort to develop homegrown European firefighting aircraft.

Two companies plan to adapt the Franco-Italian ATR 72 regional turbo-prop as firebombers, and the third wants to develop a more capable clean-sheet water-scooping amphibian to replace the popular Canadair CL-215/415.

Canadian and U.S.-built airframes dominate the aerial firefighting fleets of Europe's governments. In addition to the CL-215/415s, they operate De Havilland Canada Dash 8-400s and conversions of Air Tractor and Thrush agricultural aircraft.

The startups aim to reverse that dependency. They assert that the European Union's decision to support the restart of Canadian amphibian production was shortsighted. Two years ago, the European Commission committed €600 million (\$704 million) to help six countries acquire the De Havilland Canada DHC-515, a modernized Canadair derivative. The startups contend that funding should have been used to develop a European alternative instead. Despite this, their efforts are gaining traction, supported by early funding, industrial backing and customer interest.

Among the most eye-catching concepts is that of Toulouse-based Positive Aviation, which is developing a family of ATR 72-based firefighting aircraft. Its land-based FF72 Tanker is complemented by the FF72 Scooper, which replaces the aircraft's conventional landing gear with a pair of 18-m (59-ft.) composite floats. The company plans to roll out a Scooper demonstrator by year-end; flight testing is scheduled for 2027.

Meanwhile, Keplair Evolution is preparing to roll out the first prototype of its land-based ATR 72 Forest Keeper this year, targeting service entry in 2027. Hynaero, based in Istres,

France, is pursuing a more ambitious route, developing the clean-sheet Fregate-F100 amphibian, designed as a successor to the CL-415, with the ability to drop around 10 metric tons of water at speeds of up to 250 kt.

Across the industry, debate continues over the best approach to next-generation firefighting aircraft. Some assert that the market remains too niche to justify clean-sheet developments. Others counter that the grow-



**Positive Aviation plans to convert an ATR 72-200 into a float-equipped demonstrator this year.**

ing wildfire threat—combined with rising interest from commercial operators—will expand the market considerably. So far, DHC-515 sales have been limited to government customers.

The niche-market argument underpins Positive Aviation's decision to adapt the ATR 72 after evaluating several platforms. The company estimates that, once equipped with floats, the aircraft would cost roughly half as much as a DHC-515—estimated to be around €50 million, based on the European Union deal—and have a payload capacity of around 8 metric tons, compared with 6 tons for the Canadian amphibian.

The popularity of the ATR 72 makes it a good fit for an affordable firefighting aircraft.

"The ATR is a completely modern aircraft," Positive Aviation President and CEO Laurent Schmitt told Aviation Week at the Aerial Fire Fighting (AFF) Conference held here in March.

"There are 1,200 in service, spare parts and mechanics are available everywhere, and it is still in production."

Schmitt, a former Airbus chief engineer on the A330neo and Corporate Jets programs, spent two years assessing whether the ATR 72 could operate on floats.

Few comparable efforts exist in Europe. The last aircraft of similar size to be fitted with floats dates back to World War II, when Italy's Cantieri Riuniti dell'Adriatico developed the four-engine Z.511 seaplane.

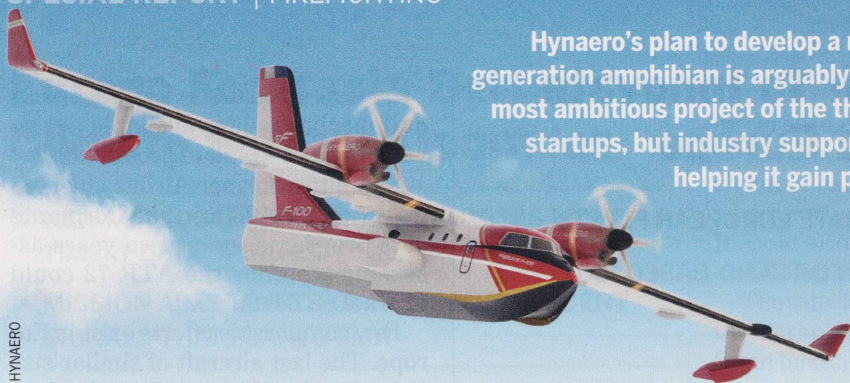
Positive Aviation has frozen the FF72 Scooper configuration. Its demonstrator, designated FF72-X1, will use floats built by Vannes, France-based Multiplast, known for high-performance racing yachts. Float deliveries are expected in August and October.

Passenger-configured ATR 72-600s are preferred for conversion; freighter

variants, with their larger cargo doors, complicate float integration. To reduce weight, the conversion removes about 2.8 metric tons from the baseline aircraft—including the landing gear, pressurization system, seating and cabin equipment—rendering the aircraft unpressurized. The anti-icing system is also removed, limiting operations in icing conditions. The aircraft will be fitted with an 11,000-L (2,900 gal.) tank, but operational capacity will be limited to about 8,000 L.

The floats incorporate a redesigned landing gear system that retains the ATR's wheels and brakes. Additional horizontal and vertical stabilizers improve stability. On production aircraft the midfuselage-mounted floats will house water scoops to channel water into fuselage tanks during low-level skimming. The demonstrator will not include this system.

Initial testing will begin in Toulouse and then move to Marseille Provence



HYNAERO

Hynaero's plan to develop a new-generation amphibian is arguably the most ambitious project of the three startups, but industry support is helping it gain pace.

Airport for water operations on the Etang de Berre lagoon.

Positive Aviation has secured orders for 10 scoopers from Bridger Aerospace, the only U.S. operator of the CL-415.

"The Palisades Fire in Los Angeles was a wake-up call," Schmitt said. "Operators are realizing they need a mix of retardant aircraft and scoopers to protect critical areas."

Keplair Evolution, meanwhile, also plans a pair of ATR 72 conversion options. One is a dedicated firefighting version that could drop up to 8.5 metric tons of water or retardant. The multirole version is being designed to carry up to 7.5 metric tons. An advantage of Keplair's concept is that the multirole version could still be used for cargo operations. Although the tank system is not fully roll-on/roll-off, Keplair President David Joubert says it can be removed within two days, allowing the aircraft to return to freight service.

This flexibility could appeal to commercial operators that do not require dedicated firefighting aircraft year-round. Aircraft configured for firefighting during the summer season could revert to cargo operations in winter.

A prerequisite for the conversion is the installation of a large cargo door developed by Swiss company IPR Conversions. This modification is already certified by the European Union Aviation Safety Agency (EASA) and Transport Canada. Aircraft conversions will be carried out by French modification specialist Aerotec & Concept. Joubert says up to 400 conversions could be ordered over the next 20 years for both government and private operators.

France's Securite Civile has seen the potential for the aircraft as a replacement for its Dash 8-400-based fire-bombers. Keplair has secured eight letters of intent, including from Securite Civile and Amelia, a charter and

aircraft, crew, maintenance and insurance operator, for two aircraft to be deployed in the French department of Reunion, off the coast of Madagascar.

Keplair also has secured a letter of support from ATR and plans to convert ATR 72-500 and -600 series aircraft for production. The prototype will be based on an ATR 72-200, however.

Hynaero's Fregate-F100 program gained momentum in March after securing €110 million in funding. "This is a major step in the program," co-founder and President David Pincet said at the AFF conference. Designed with what Pincet says is "low techno-

logical risk," the aircraft will use proven systems, including Pratt & Whitney Canada PW150 engines mounted above the wing. The F100 is expected to cruise at 250 kt. and deliver 10 tons of water. The funding is set to support a 12-month initial concept phase, followed by progression to a preliminary design review about 15-18 months later.

industrial partners including Airbus Defense and Space. The French interior ministry, of which Securite Civile is a part, is in discussions with Leonardo, Safran, Thales and Turkish Aerospace Industries. Airbus is contributing some 20 engineers to optimize the design under a memorandum of understanding signed last year.

Around 74 CL-215/415 aircraft remain in service across Europe, figures released by De Havilland Canada at the AFF conference reveal, and Pincet estimates demand for approximately 100 replacements. Unlike current procurement trends, the F100 is expected to appeal to both government and commercial operators.

Hynaero has begun hiring and secured facilities at the Jean Sarrail aeronautics cluster in Istres, where it will use part of the former Dassault Mercure assembly hall. Production could reach 10 aircraft annually by the mid-2030s. The company has planned two prototypes. First flight is targeted for 2030 and service entry for 2032.



**Keplair's water bomber ATR 72 is slated to deliver water in two modes of operation, a blast mode—releasing the full payload in seconds—or a constant-flow mode to create retardant barriers.**

KEPLAIR EVOLUTION

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Hynaero has secured backing from France's Securite Civile and from in-

Certification remains a major challenge, notably for the two amphibians. EASA has never certified an amphibious aircraft, which raises additional hurdles, particularly for clean-sheet designs. "We know the path to first flight will be bumpy, but we are patient and resilient," Pincet said.

"There are some aspects of certification we want to challenge and others we want to improve for applicability," Positive Aviation's Schmitt said. ☛