PLANES TECHNICA —

Airbus has its own airline—sort of...

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JAN TEGLER - 1/26/2017, 5:45 AM

The Airbus A350 XWB during a demonstration flight at Farnborough, UK. Airbus | P. Pigyere | Master Films



Commercial aircraft giant Airbus has come up with a way to mature its aircraft faster. The French manufacturer has created its own simulated airline to replicate the way the world's commercial carriers use and look after their airplanes. Dubbed AIRLINE1, the concept was introduced in 2013 to speed development of Airbus' new A350 XWB (a Boeing 787/777 competitor) by reducing the technical issues that typically surface after new airliners enter service.

In essence, AIRLINE1 is a new way of developing Airbus airliners—a system that allows the flight test team to think and operate as an airline would during flight testing and certification. An airline maintenance control center in a dedicated hangar at Airbus' Flight Test Center in Toulouse, France is its main component. As the A350 flight test program unfolds, the company's test team does real-time maintenance, support, and repair operations on test aircraft using the procedures and even the documentation Airbus customer airlines use.

"Our flight test team, the planning team, the production team, the quality team, the engineering teams, they all manage the airplane and its data like an airline does," says Philippe Garnier, Airbus' vice president of A350XWB maturity and operability. "We try to operate the aircraft like an airline would. We monitor its systems and use airline technical documentation to maintain the aircraft just like an airline."

The AIRLINE1 concept was first tried on the A350-900, the debut model for Airbus' A350 XWB family of airliners. The five A350-900 test aircraft involved in the model's flight test program in 2013-2014 were guinea pigs of sorts for the idea. It was an experiment that worked, says Garnier. That's why Airbus has relaunched AIRLINE1 for development of the next A350 model, the larger A350-1000, and will apply the simulation to all of its future aircraft.

In the Flight Test Center's airline-modeled maintenance control center, the various flight test teams conduct "flight watching," monitoring A350-1000 components and systems via the airplane's onboard maintenance system. The system and this kind of monitoring are a departure from past

flight test programs wherein special telemetry equipment was fitted to new airliners to monitor and send tech data to the test team. The A350 XWB performs this function on its own, "announcing" system or part failures to the cockpit crew and sending the notification to the test teams. It's a process A350 XWB customer airlines will use when they put the aircraft into service.

"If we have a failure we try to understand it to see if it is a maturity issue or not," Garnier explains. "Then we take action during the flight test campaign as an airline would in normal in-service operations. If you have a technical issue in-service you need to identify the issue and then identify the solution. We do that by flight-watching the aircraft, capturing all failures in real time and then we launch an investigation. When you've identified a fix, you install it and test it, using the technical processes the airlines use. That allows you to better develop or mature an aircraft for airlines."

Garnier notes that AIRLINE1 is as much a change in the culture for the flight test teams as it is a bundle of airline procedures and practices.

"It's a cultural change for us. We've made progress from A350-900 to A350-1000. We've discovered new things, adapting the process, and we're thinking more and more like an airline, learning what we need to do as an airline would. Now it's really becoming a habit to work on the aircraft like an airline."

AIRLINE1 tenets will be more thoroughly applied to the three A350-1000 test aircraft, Garnier says, with sharper focus on visual inspections of the A350-1000's airframe and the cabin, employing airline-standard operating procedures for preflight and cockpit preparation as well as referring to airline technical documentation for troubleshooting.

"We're trying to be much more exhaustive in capturing details as an airline will, everything from working on the aircraft itself to the support systems we are developing for our customers," Garnier emphasizes. "AIRLINE1 changes our focus from aircraft development exclusively in a flight test environment to aircraft development in an airline environment."

Listing image by Airbus | P. Pigyere | Master Films

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