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A350 XWB: A NEW ASSEMBLY PROCESS FOR A COMPLETELY NEW AIRCRAFT

The A350 XWB Final Assembly Line (FAL) has been set up close to the A330 final assembly line in Toulouse, in order to optimise the industrial processes associated with an entirely new FAL by making the most of Airbus' existing long-range installations..

The A350 XWB "Roger Béteille" FAL is the "greenest" ever built by Airbus (natural lighting wherever possible, photovoltaic roof producing 55% of the power needed for the building to function...).

The A350 XWB final assembly has been thought out with efficiency in mind, in order to reduce the assembly time compared to current programmes and enable a more effective test programme.

Unlike Airbus' current series programmes, the landing gear and systems are installed in parallel with the assembly of the fuselage, wings and tailplane, along with the first step in the cabin installation operations. The functional tests can therefore start earlier on the A350 XWB programme than they do for the other programmes.

The A350 XWB sections arrive at the FAL from the various Airbus sites in Europe already fitted out and tested, reducing the amount of work required on the systems in the FAL.

The galleys and crew rest compartments are first of all installed inside each of the three fuselage sections at Station 59, before aircraft final assembly begins.

Final assembly starts at Station 50, with the joining together of the forward, centre and aft fuselage sections inside which the fitting out tasks can be carried out while the sections are being assembled. The nose landing gear is also installed at this station.

During the next step, at Station 40, during the wing-fuselage-junction, and the installation of the tailplane (horizontal and vertical fins), tailcone as well as main landing gear and engine pylons, he first phase of cabin fitting out is also carried out.. The aircraft also has its first power-on, enabling the functional tests to begin before the end of wing/fuselage mating.

Assembly continues at Station 30, with ground testing of mechanical, electrical and avionics systems, and furnishing of the cabin (seats and main pieces of equipment).

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The aircraft is then moved to the A330 Final Assembly Line. The external tests are performed here at Station 18 (cabin pressurisation, communication systems, calibration and testing of the fuel gauges, cargo and passenger doors).

The next step consists of painting the aircraft. In Toulouse there are four paint halls dedicated to the Long Range family (A330 / A350 XWB / A380) – three on the Clément Ader site and one on the Jean-Luc Lagardère site. The paint used complies with environmental regulations: polyurethane paints and solvents with a low VOC (Volatile Organic Compound) content. The paint operators use spray guns with an electrostatic spray system. Because it is more evenly spread, less paint is used, enabling weight savings on the aircraft.

The last step, at Station 20, consists of cabin furnishing completion (In Flight Entertainment, curtains, safety equipment, etc.), cockpit fitting out and engine installation.

The aircraft then makes its first flight, before being delivered to the customer airline at the Henri Ziegler Delivery Center in Toulouse.

When A350 XWB production reaches full capacity, the complete process, from the beginning of final assembly through to delivery to the customer, will take two and a half months, which represents a 30% time-saving compared with the other programmes.

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