LANDING GEAR. Messier-Dowty teamed up with Airbus early in the A350 XWB program, enabling it to develop a highly innovative landing gear for this new-generation widebody twinjet.

GEARING UP FOR THE A350 XWB

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The Airbus A350 XWB was one of the stars at the 10th Dubai airshow in November 2007, logging 80 firm orders during the show to bring the total to over 300. Messier-Dowty, a Safran Group company, is in charge of main landing gear design, development, testing, production and support. The A350's main gear features state-of-the-art technology to satisfy a very demanding set of specifications, as Chris Morgan, the program director at Messier-Dowty, explains: "The main innovation on this landing gear is the extensive use of titanium, a material that combines light weight with high strength and corrosion resistance." These qualities translate into lower operating costs for the airline.

A long-standing partnership with Airbus

The collaboration between Messier-Dowty and the European planemaker reaches back a long way. "We have worked on all Airbus airplanes," notes Morgan with pride. But the A350 marks the first time that Messier-Dowty joined the program so early in the process. Teams from the two companies started working together on the aircraft's design in 2005, in particular to optimize the layout of the landing gear bay in the fuselage. "This is a much more efficient way of working," explains John Roberts, vice president of program engineering at Messier-Dowty's Airbus and European Programs business unit. "All of the teams work on the same production platform. We can discuss things, explain where we need more room for example, and work together to come up with solutions. The upshot is that we can reduce our costs and develop the lightest possible landing gear. At the same time, we used the extensive feedback from our customer support network to make sure this product matched the airlines' real needs."

The main landing gear is of course perfectly integrated in the aircraft, whether the four-wheel version for the A350-800 and -900 models, or the six-wheel version for the A350-1000 (takeoff weight of 300 metric tons/660,000 lb). "Early integration also allows us to carry out more tests to guarantee reliability," adds Chris Morgan. This helps Messier-Dowty meet the objectives set by Airbus for the new A350 XWB, namely design an aircraft that is as economical, light and reliable as possible.

Lighter, quieter

The new design of the A350 landing gear incorporates concrete solutions to protect the environment. For example, the traditional use of chrome or cadmium coatings is eliminated, and replaced by other processes and materials, such as the naturally corrosion-resistant titanium. John Roberts emphasizes that "The landing gear's design offers improved performance during approach, in particular lower noise to address one of today's most pressing concerns. This is also a logical next step as the jet engines themselves become quieter than ever."

As the designer of the main landing gear on the A350 XWB, Messier-Dowty has stepped up its relationship with Airbus. Not only does the new-generation landing gear feature technical solutions that can be reused on new aircraft, it also helped develop more efficient joint working methods with Airbus.

With the delivery of the first landing gear slated for April 2011, the technical and methodological innovations developed for the A350 are very promising. The potential market for this type of aircraft is projected at 7,000 through 2030. And production of the A350 XWB will stretch over at least the next 25 years, making this a very important program indeed for Messier-Dowty. ■

A. PAPEGUAY

ADVANTAGES OF THE A350 XWB LANDING GEAR

› **Weight savings:** based on materials such as titanium.

› **Lower operating cost:** based on reliability, corrosion resistance.

› **Environmental friendliness:** elimination of polluting materials in production (cadmium and chromium), and reduced noise during approach.

› **Optimized integrated design:** Messier-Dowty's integrated product teams (IPT) work directly with counterparts at Airbus. Each IPT groups engineering, program management, production and customer support staff.

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TOTAL PACKAGE

Messier-Bugatti (Safran Group) has also been selected by Airbus to supply all "ATA32" landing and braking control systems for all versions of the A350 XWB.

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