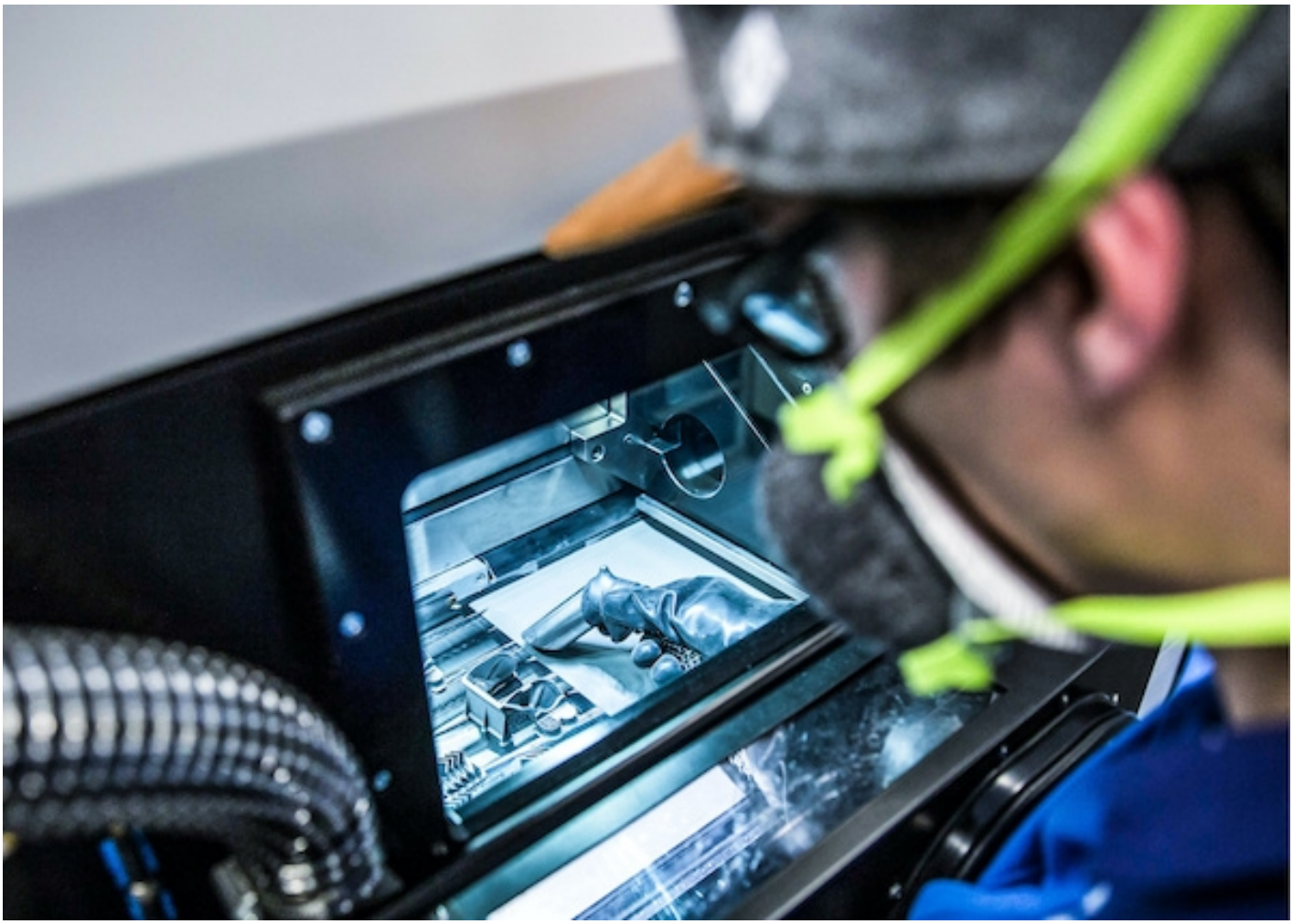
TRANSFORM, DEVELOP, SUSTAIN - LIEBHERR AT PARIS AIR SHOW 2023

News / Manufacturer



The transformation of the aviation industry is in full swing. It is not only the post-pandemic recovery and the drive to reduce emissions that are setting the direction. The requirements for digital solutions across the entire value chain and for the next generations of aircraft with their new aerodynamic concepts and propulsion technologies also require rethinking. Liebherr-Aerospace will be present at the 54th Paris Air Show. On display will be the latest innovations such as electric air conditioning systems, modular electro-mechanical actuators, solutions for local, decentralized hydraulic supply or fuel cell technology for on-board energy supply.

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Under the motto "transform.develop.sustain.", Liebherr-Aerospace's presence at this year's trade show demonstrates that the company has accepted the challenges and is ready for these industry transformations. With investments in research and technology far above the industry average, Liebherr is making a significant contribution to the development of efficient and environmentally friendly air transport.

Many years of experience in the design and integration of air management, flight control and actuation systems, landing gears and in the field of signal and power electronics make Liebherr an indispensable partner to aircraft manufacturers.

Based on its core competencies, however, Liebherr is continuously looking beyond the limits of what is feasible today. Electrification, 3D printing or hydrogen technologies can make a huge contribution here. Qualified employees are key in this transformation process and contribute significantly to Liebherr's success. That is why the company is highlighting career opportunities and inviting dialog both on its commercial booth and on a smaller booth area as part of "L'Avion des Métiers" in the Concorde Hall.

Long wingspan with folding mechanism for improved aerodynamics

Even from a distance, the Boeing 777X's folding wingtip "beckons" visitors to the Liebherr booth. The moving mock-up (scale 1:1.5) shows how the wingtip of the long wing can be folded upward to better fit the airport infrastructure. Components of the mechanism, such as the angle gearbox, the power drive unit and numerous actuators, are from Liebherr and will be on display at the booth. Innovative designs of thinner and longer wings support more CO2-efficient flying. Liebherr offers reliable folding mechanisms for future more efficient aircraft platforms.

Leader in the development of electromechanical actuators

Liebherr-Aerospace has always been a leader in the research and development of electromechanical actuators for medium to large commercial aircraft. Now the company is also adding smaller actuators to its portfolio.
The new concept specifically addresses the emerging Advanced Air Mobility sector and also covers smaller aircraft, business jets and helicopters. Liebherr's EMA family concept benefits from the experience gained from millions of flight hours in numerous aircraft programs with actuators and associated electronics over the past decades.
The development approach offers scalability for small installation spaces, a favorable power-to-weight ratio and high reliability.

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Positioned for the future with electrification and decarbonization

Liebherr has also been driving forward the electrification of today's aircraft for many years and also offers successful applications for the future in this area. In aircraft that will be more electric in the future, the engine will be decoupled from onboard power consumers for increased efficiency. Electric power will replace bleed air or hydraulic systems and enable the introduction of electric air management and actuation systems. Liebherr's exhibits show that the company can already master these requirements today: Electromechanical actuators, the high-efficiency power pack, the electric motor pump and the electric air-conditioning system (eECS), among others, are on display.

Furthermore, future more sustainable aircraft will require autonomous electrical power generation. Liebherr is working to ensure that hydrogen technology can be used to power elemental, non-propulsion electrical systems on board future aircraft using fuel cells. At the same time, thermal management of the whole, i.e. fuel cells and electrical systems, is being ensured.

3D printing and digitization expand possibilities

3D printing in aerospace is no longer a dream of the future. 3D-printed components from Liebherr are already flying every day. The company is constantly developing its capabilities and extending them to towards multiple applications. On display at the Paris Air Show is the additively manufactured housing of a secondary locking actuator. According to in-depth tests, the aerospace-

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certified housing is of lower weight, and its performance is 100% equivalent to that of a conventionally manufactured component.
In addition, digital means are revolutionizing the way Liebherr designs, builds and maintains aircraft systems. On its way to becoming a model-based company, Liebherr is exchanging models with customers as early as possible to contribute to more efficient aircraft design and development. With the help of special glasses, trade show visitors can get an impression of a Liebherr landing gear using an augmented reality application.

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