

Liebherr LR 1600/2 crawler crane hoists Airbus A-300

- Riga Mainz solves major challenge for hoisting an aircraft using sophisticated attachment equipment
- An electric hoist made it possible to change the angle of the attached load
- The Airbus had been used for 15 years as the "Zero-G" parabolic aircraft for generating weightlessness

Ehingen / Donau (Germany) September 2015 – The service life of the "Zero-G" parabolic aircraft came to an end with a spectacular hoist over the fence at Cologne-Bonn Airport. The heavy load experts from Riga Mainz hoisted the 82-tonne Airbus A-300 from the airport's apron using a Liebherr LR 1600/2 crawler crane and a sophisticated combination of attachment equipment. The aircraft will now become a museum exhibit on show to the general public.

Uwe Langer, Managing Director of Riga Mainz, had six months of planning and meetings behind him when the "Zero-G" former research aircraft was finally hoisted off the Cologne-Bonn Airport site in August. Both the specifications for the crane job at the airport, such as its limited set-up height, and the requirements for attaching the sensitive load were very stringent. In fact there are only three attachment points on the entire aircraft with the required load capacity – both main sets of landing gear and an area at the front of the Airbus' fuselage. Here, level with the front door, where three straps were used, are the load-bearing frames used in the aircraft construction.

The attachment equipment weighed a total of 19 tonnes and included two cross beams and three load spreaders developed by Riga Mainz. A remote controlled chain hoist was used to adjust the crane hook precisely over the overall centre of gravity, even when it was loaded. This made it possible to adjust the required angle of the aircraft to the horizontal to generate no upthrust in the event of wind and inflows from the front. This solution satisfied a major requirement specified by the customer.

"Zero-G" required around one hour for its last "flight" over the airport security fence. With holding ropes secured on two sides to telescopic loaders, the seven-man team from Mainz turned the A-300, which measures around 54 metres in length, through

around 180 degrees during the slewing process. Extreme caution was required for this because a gust of wind could have pressed the elevator at the rear against the crawler crane's main boom. The Airbus was turned almost imperceptibly slowly into its final position. The LR 1600/2 with its curious load then covered a distance of around 20 metres on a specially laid gravel bed.

Placing the future museum exhibit on three foundation points proved to be something of a long-winded procedure. Minor corrections had to be made to the construction before the crane driver Markus Knabe was able to position his unusual load with millimetre precision. Airport manager Michael Garvens did not hold back with his praise after the job had been successfully completed: "Absolute precision work and a great result."

Of the 43 years of service that the Airbus has completed, the last 15 have been in the interests of research and science. The aircraft performed so-called parabolic flights for astronaut training and experiments for customers including the German Aerospace Centre (DLR). The "Zero-G" completed a total of around 13,000 parabolic flights, simulating weightlessness for around 22 seconds on each occasion in the empty airspace between Scotland and Norway.

Caption

liebherr-lr-1600-2-riga-airbus-1.jpg

Sophisticated hanging gear: the combination of cross beams and spreaders was able to adjust its angle to the appropriate centre of gravity using an electric chain hoist.

liebherr-lr-1600-2-riga-airbus-2.jpg

Mighty attachment equipment: the hanging gear for the Airbus weighed 19 tonnes on its own.

liebherr-lr-1600-2-riga-airbus-3.jpg

The attachment points for the main landing gear could only be accessed by opening the wings.

liebherr-lr-1600-2-riga-airbus-4.jpg

Full concentration: Wolfgang Schubach from Riga Mainz monitors the hoisting process from the destination.

liebherr-lr-1600-2-riga-airbus-5.jpg

Job done: the holding ropes on the front landing gear of the aircraft are removed.

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