15 YEARS IN THE SERVICE OF SCIENCE: LUFTHANSA AIRBUS CELEBRATES RESEARCH ANNIVERSARY

News / Airlines, Manufacturer

Lufthansa Airbus A340-300, named after the city of "Viersen", is celebrating a special anniversary: When the long-haul jet is scheduled to operate flight LH405 from New York to Frankfurt from July 7 to July 8, 2026, it will have been collecting important data for climate research in scheduled service for exactly 15 years to the day. On July 8, 2011, the aircraft with the registration "D-AIGT" added a new mission to its passenger flights: for the first time, it also took to the skies in the service of climate research – from Frankfurt to Lagos in Nigeria. At the time, Lufthansa, together with Forschungszentrum Jülich, became the world's first airline to launch a novel long-term observation of the Earth's atmosphere via scheduled flights, based on the measurement system of the research program IAGOS (In-service Aircraft for a Global Observing System; https://www.iagos.org/).

The Lufthansa Group’s commitment to climate research dates back even further. The IAGOS predecessor system MOZAIC was already installed on two Lufthansa Airbus A340-300s and reliably collected measurement data during cruising flight from 1994 to 2014. This marks over

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three decades of Lufthansa Group’s support for atmospheric and climate research.

Up to three Lufthansa Group aircraft in daily service for climate research

Since then, the Lufthansa Group has continuously expanded its commitment. In February 2015, the second IAGOS system was installed on the Lufthansa Airbus A330-300 with the registration "D-AIKO", which today flies for Discover Airlines. In November 2022, the "D-AIKE", another Airbus A330-300 operated by Discover Airlines, became the third IAGOS aircraft in the Group's fleet. Today, up to three Lufthansa Group aircraft collect atmospheric data daily – the "Viersen" with Lufthansa, as well as two long-haul aircraft with Discover Airlines, on flight routes around the globe.

Around 400 organizations worldwide use the measurement data for research

The compact measurement system is permanently installed beneath the aircraft cockpit. Outside air reaches the measuring instruments via two probes built into the aircraft fuselage. After each flight, the data is automatically transmitted to the central database of the research center CNRS (Centre National de la Recherche Scientifique) in Toulouse, a key IAGOS partner of Forschungszentrum Jülich. The data is freely available to the global research community and is currently used by around 400 organizations worldwide to identify long-term changes in the atmosphere, refine climate models and improve weather forecasts. In addition, IAGOS is one of the central pillars of the World Meteorological Organization's global aircraft-based observation system.

Through its measurements on regular passenger flights, the Lufthansa Group supports the IAGOS research infrastructure – one of the most important European programs for studying the Earth's atmosphere. Coordinated by Forschungszentrum Jülich, the project brings together the expertise of partners from research, meteorological services, the aviation industry and airlines. The initiative is funded by Germany’s Federal Ministry for Research, Technology and Space (BMFTR).

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More than 37,500 measurement flights completed

The use of passenger aircraft allows the collection of measurement data at a volume and resolution that would not be possible with dedicated research aircraft or satellites. The data collected by the aircraft during cruising flight at altitudes of nine to thirteen kilometers is of great significance for atmospheric and climate research. This region is particularly relevant because it is where processes occur that affect the Earth's radiation budget and climate. The Lufthansa Group has already completed more than 37,500 measurement flights since 1994 on regular passenger flights using MOZAIC and IAGOS measurement equipment. The recorded values have made a significant contribution to building one of the world's most extensive datasets on ozone and water vapor content in the atmosphere. Today, ten aircraft operated by eight airlines worldwide are equipped with the IAGOS system.

Supporting atmospheric and climate research is part of the Lufthansa Group's broad sustainability commitment. Together with partners from science and research, the Lufthansa Group is working to better understand the impact of aviation on the atmosphere and climate, and to make scientific findings applicable to the further development of flight operations. In addition to IAGOS, this includes research activities on non-CO? effects, climate-optimized flight planning, and more precise weather data in operational use.

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