

Press releases 2010

The volcano calls - measurement flights over Iceland

2 May 2010

+++ Update: 3 May 2010, 16:45 +++

The Falcon 20E research aircraft of the German Aerospace Center (DLR) has returned to the DLR research airport at Oberpfaffenhofen after its 'Volcanic ash investigation' mission over Iceland, landing at 15:28 CEST. On Saturday, 1 May, the Falcon took off from the airport of the Icelandic capital, Reykjavik, for a further measurement flight to investigate the plume of the Eyjafjallajökull volcano.



Measurement flight 'Volcanic ash investigation' mission flying over Eyjafjalla

Even before it landed at Keflavik (location of the the airport of the Icelandic capital, Reykjavik) at 20:30 CEST on 29 April 2010, the German Aerospace Center's (Deutsches Zentrum für Luft- und Raumfahrt; DLR) Falcon research aircraft had observed the volcanic ash cloud and carried out preliminary measurements. On Saturday, 1 May, the crew took off on another measurement flight over Iceland.

On 29th April, coming in from the Faroe Islands, the Falcon flew its 'Volcanic ash investigation' mission East to West along the southern coast of Iceland, at an altitude of about 8000 metres. Iceland was covered by continuous cloud, above which the volcanic plume of Eyjafjallajökull rose clearly. The Falcon also flew in the vicinity of Keflavik, some 70 kilometres South of the capital, this time at lower altitudes

of 5500 metres, 4200 metres and 2000 metres, to determine the vertical profile of ash concentration in the atmosphere.

First measurements...



In so doing, the lidar (Light Detection And Ranging: a remote sensing instrument on the Falcon that can measure the concentration of dust particles in the ash cloud using laser beams) detected layers of volcanic ash at altitudes of between 2000 to more than 5000 metres. High concentrations of small liquid droplets were found at an altitude of 5500 metres. "As always, flying directly into the vicinity of the concentrated ash plume is far too dangerous," said Prof. Ulrich Schumann, Director of the DLR Institute of Atmospheric Physics, about the situation. The particle-measuring devices attached to the wings of the Falcon were used at an altitude of 4200 metres, to one side of the axis of volcanic ash cloud. The measuring device, from the DLR Institute of Atmospheric Physics and the Laboratoire de Météorologie Physique at Blaise Pascal University in Clermont-Ferrand (France), detected tiny concentrations of large particles (3-800 micrometres). The measurement data obtained during the first flight were sent to those responsible in Iceland, to the German Weather Service (DWD) and to the Volcanic Ash Advisory Centre (VAAC) in England.

These first measurements gave the Icelandic air traffic control authority data to review flight-ban areas. Although it is clearly weaker than it was shortly after the start of the eruption, the volcano is still active and the volcanic ash is reaching altitudes of 5000 metres. Iceland's restricted airspace is currently at altitudes below Flight Level, 200 – about 6000 metres, and confined to a narrow area in the volcanic ash cloud.

On Friday, 30th April, no measurements could be carried out with the optical systems on the Falcon due to the presence of dense rain clouds.



Eyjafjallajökull volcanic ash cloud over Iceland on 1 May 2010

The story continues...

After the rain clouds cleared, the Falcon took off again at about 13:00 CEST on Saturday, 1 May, for a measurement flight over Iceland and to study the volcanic plume. Measurement conditions were almost ideal despite light cloud cover. The flight route led the Falcon directly past the Eyjafjallajökull volcano. At about 200 kilometres from the volcano, the aircraft flew over the volcanic ash cloud several times at roughly 6000 metres altitude. On the return flight, visual observations by the crew and measurements showed that Keflavik and Reykjavik were free from volcanic ash because of wind from the North-West. At 16:30 CEST, the Falcon landed at Keflavik again. Like every measurement flight in the past few days, a thorough examination of the engines followed. No damage was found; the Falcon is ready to take off for further measurements.

The DLR research aircraft is scheduled to return to Oberpfaffenhofen on Monday, 3 May 2010.

Related Contacts

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