Eruption in Eyjafjallajökull
Status Report: 21:00 GMT, 02 May 2010

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Compiled by: *MJR / MTG / FS / BO / SSJ / SH*

Based on: IMO seismic monitoring; IES-IMO GPS monitoring; IMO hydrological data; web cameras of the eruption site from Vodafone, Mila, and Múlakot; IMO weather radar measurements; information from scientists at Gígjökull.
[No scientific overflight today.]

Eruption plume:

Height (a.s.l.):	Estimated from web-camera views and observers on the ground at an elevation of 4–5.4 km (13–18,000 ft). Clouds of ash at lower elevations observed drifting south-east of the eruption site. No verifiable detections from the weather radar at Keflavík Airport.
Heading:	South-east from the eruption site. Plume track visible at least 200 km from the eruption site on MODIS (12:35 GMT) and EUMETSAT (17:15 GMT) satellite imagery.
Colour:	Dark grey (ash) clouds observed over the eruptive site. White (steam) plumes rising from Gígjökull, north of the eruption site.
Tephra fallout: located	Moderate ash-fall reported in the village of Vík (12:00 GMT), 40 km south-east of Eyjafjallajökull.
Lightning:	No detections today over the eruption site (18:00 GMT).
Noises:	Booming sounds heard during the night and throughout the day up to 40 km south-east of the eruption site.
Additional note:	Plumes of white steam extend partway down Gígjökull. Lava appears to have advanced further down Gígjökull overnight. Aerial observations at 18:25 GMT confirmed a dense cloud of ash between 3–3.3 km a.s.l. (10,000–11,000 ft) at 60° N, 16° W (~470 km south-east of Iceland). London VAAC have been informed about this siting.

Meltwater: Before 16:00 GMT, discharge levels at the old Markarfljóts bridge, ~18 km downstream from Gígjökull, were noticeably lower than yesterday's levels. Between 16:00–17:00 GMT, a meltwater pulse was detected at the bridge; the flood was comparable in size to earlier floods on 30 April. At 19:40 GMT, web-camera images of Gígjökull showed plumes of steam rising from the glacier edge. Additionally,

steam is rising from the delta that occupies the lake basin, suggesting the discharge of near-boiling meltwater.

Conditions at eruption site:
Explosive activity has increased somewhat over the last 2–3 days; mass flux in the plume is estimated at 10–20 tonnes s^{-1}. A scoria cone continues to form at the eruption site. Lava is propagating down Gígjökull and most of its energy is being used to melt ice. As lava advances down-glacier, the size of the ice canyon increases. Large plumes of steam are produced where lava is in contact with ice and meltwater.

Seismic tremor: During the last 30 hours, tremor levels have intensified. This intensification could be due to lava-ice interactions within Gígjökull, or conditions at the eruption site.

Earthquakes: No locatable seismicity detected beneath Eyjafjallajökull.

GPS deformation: Horizontal displacement towards the centre of the volcano, in addition to vertical subsidence. In the last couple of days increased subsidence has been observed at stations closest to the eruptive crater. These observations are consistent with deflation of a magma reservoir beneath Eyjafjallajökull, although the deformation pattern has changed somewhat.

Magma flow: See overall assessment.

Other remarks: No measurable geophysical changes within the Katla volcano.

Overall assessment:
The eruption is mixed, with the lava-producing phase being larger than the explosive phase. During the last 2–3 days, the plume has been darker and wider than in the preceding week. Tephra fall-out in the vicinity of Eyjafjallajökull has increased. From the location of the steam plume over Gígjökull, lava has advanced over 3 km north of the eruption. Steam plumes over the glacier edge from 19:40 GMT suggest that lava may have advanced even further. A rough order-of-magnitude estimate of lava volume can be obtained from the dimensions of the ice canyon. This estimate gives a lava production rate of-the-order 20 m^3 s^{-1} (i.e. 50 tonnes s^{-1}). The explosive phase may be 10–20 tonnes s^{-1}. The explosive phase has increased somewhat in intensity during the last few days. Presently, there are no measurable indications that the eruption is about to end.