Magma-ficent Disruption

The Grand Visit Of The Volcanic Plume Puts Aviation Affairs On Hold Globally

BREAKING NEWS!!! Several flights cancelled as Ethiopian volcanic ash drifts towards India. The Hayli Gubbi volcano erupted for the first time in nearly 12,000 years, sending thick ash plumes across the Red Sea toward Yemen and Oman. The cloud has now stretched over the northern Arabian Sea.

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Once upon a time in a land that lay south-west to India, stood a great volcano. For many millennia it stood stoic. But then, something unexpected took place. On November 23, 2025, the Hayli Gubbi volcano erupted - possibly for the first time in 12,000 years.

ACT I: The volcano that refused to stay quiet

Belonging to the Erta Ale Volcano Range located in the Afar region of Ethiopia, the volcano is surrounded by instability. It is situated at the edge of the East African rift – where the Arabian and African tectonic plates are drifting apart at an alarming rate of 0.4-0.6 inches per year. The increasing separation of the plates caused the hot mantle rock to rise, melt, and accumulate into a magma chamber located under Hayli Gubbi. Over a millennia, silica-rich magma trapped gases and volatile substances, built pressure until the crust could no longer contain it. When it finally erupted, the volcano expelled a dense ash plume consisting of volcanic ash, sulphur dioxide, and tiny particles of glass and rock - after all, one can only stay quiet for so long! The eruption didn't affect any civilians directly, but it is said to soon affect the lives of local pastoralists due to streams and soil now being defiled with magma content. Most of its impact is limited to the atmosphere, adding to the already stressed global air.

ACT II: The great airborne traveller

Apparently, even volcanic ash needs a vacation after staying inside the 'burrow' for so long. With all its might, the dramatic explosion sent the ash 14 kms up into the atmosphere, making it international news. The ash reached the upper troposphere/lower stratosphere, resulting in the particles entering a domain where the laws of large-scale atmospheric flows dominate. Their voyage set afoot - the eastward jet stream carried volcanic plumes all the way from the Red Sea to the Arabian Sea. It even drifted towards Yemen, Oman, and Iran. The EU, using their observation programme Copernicus, detected the ash cloud blowing east over the Arabian sea to reach India. It reached India's western border on November 24 at 5:50 pm and was out of its hair a day later by 10:30 p.m. Moving at around 100-120 km/hour at an altitude of 15,000 to 25,000 feet, the plume travelled over Rajasthan, parts of Gujarat, Delhi-NCR, Punjab, and Uttar Pradesh before crossing over to China.

ACT III: The airport drama (Starring: your flight)

While in India, the ash cloud made sure to make its short stay worthwhile, leaving flight cancellations in its wake. Since ash contamination can't be detected by regular radar, airlines were advised to take precautions and avoid the affected areas. Akasa cancelled some of its flights that were scheduled to fly to the Middle East. Similarly, Air India cancelled eleven of its flights. It also conducted precautionary checks on the airplanes which got close to the ash, examining them for potential damage. But what exactly are these potential damages? As the ash has the tendency to melt inside the jet engines upon contact, they are at the highest risk of failure. Apart from causing severe abrasion of aircraft exteriors, ash clouds can also obscure pilot vision. Moreover, particles also interfere with sensors and cockpit instruments. With the great cancellation of flights comes an even greater aftermath: a congested airport. Delayed plans frustrated passengers to no end. Just ask the 1.2 million passengers who were stranded each day in Europe when the Eyjafjallajokull volcano in Iceland erupted continuously between March-June 2010, leading to cancellation of 95000 flights.

ACT IV: Delhi wonders: A mask for this too?

The ash was luckier than most of us, for it got to meet its friends – smoke and polluted air. Together, they seem to be making history. However, raising the AQI seems like something the ash didn't intend on contributing to, though it did carry with itself sulphur-rich gases that took refuge in the Himalayas. The ash cloud's immediate traces were prettier, taking the form of hazy skies, colourful sunsets and a 'weird' sky colour - effects common when volcanic ash high in the atmosphere scatters light. The ash, however, won't have enough time to enter our breathing atmosphere. At cruising altitude, it disrupts aviation far more than ground-level air. But Delhi's smog? Well, it has its own agenda.

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