

Mallory and Irvine: Did extreme weather cause their disappearance?

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The north side of Mount Everest is the area believed to be consumed by extreme storms during the Mallory & Irvine expedition. Credit: Dr John Semple

Their legend has inspired generations of mountaineers since their ill-fated attempt to climb Everest over 80 years ago, and now a team of scientists believe they have discovered another important part of the puzzle as to why George Mallory and Andrew Irvine never returned from their pioneering expedition. The research, published in *Weather*, explores the unsolved mystery and uses newly uncovered historical data collected during their expedition to suggest that extreme weather may have contributed to their disappearance.

George Mallory and Andrew 'Sandy' Irvine disappeared during their historic 1924 attempt to reach the summit of Everest. The pair were last

seen on June 8th on Everest's Northeast Ridge, before vanishing into the clouds and into the history books. For decades a vigorous debate has raged regarding their climb, their disappearance and if they were successful in reaching the summit.

"The disappearance of Mallory and Irvine is one of the most enduring mysteries of the 20th century, yet throughout the debates surrounding their disappearance the issue of the weather has never really been addressed," said lead author Professor G.W.K Moore of the Physics Department at the University of Toronto. "Until we completed our study the only information available was an observation by mountaineer Noel Odell, who was climbing behind Mallory and Irvine, who claimed that a blizzard occurred on the afternoon that they disappeared."

Many writers have since ignored the storm as Odell believed it had only lasted a short time. However the size and extreme height of Everest mean that Odell's observations have always been difficult to place into context, making the blizzard potentially more significant than first realised.

This latest research focuses on meteorological measurements from the 1924 expedition which the authors uncovered at the Royal Geographical Society library in London. Although the data was published as a table in a 1926 report on the expedition, it was never analysed for information on the disappearance of Mallory and Irvine until this study.

"We analysed the barometric pressure measurements and found out that during the Mallory and Irvine summit attempt, there was a drop in barometric pressure at base camp of approximately 18mbar. This is quite a large drop, in comparison the deadly 1996 'Into Thin Air' storm had a pressure drop at the summit of approximately 8 mbar," said Moore. "We concluded that Mallory and Irvine most likely encountered a very intense storm as they made their way towards the summit."

"Mount Everest is so high that there is barely enough oxygen near its summit to sustain life and a drop of pressure of 4 mbar at the summit is sufficient to drive individuals into a hypoxic state," said Dr. John Semple an experienced mountaineer and the Chief of Surgery at Women's College Hospital in Toronto.

The authors conclude that with the additional stresses they were under with extreme cold, high winds and the uncertainty of their route, the pressure drop and the ensuing hypoxia contributed to the Mallory and Irving's death.

This research not only contributes a new, and perhaps final, chapter to the Mallory legend, but is also of importance to modern mountain climbers as the same types of storms and hypoxic stresses continue to confront those who take on the world's great mountains.

The Mallory and Irvine storm serves as both an example and a warning of the magnitude of the pressure drops that can occur and the severe physiological impact they can have.

"Over the 8 decades since Mallory and Irvine died we have learned a lot about Mount Everest and the risks that climbers attempting to climb it face", concluded Moore. "The weather is perhaps the greatest unknown and we hope that this line of research will help educate modern climbers as to the risks that they face."

More information: Moore G.W.K, Semple J.L, Sikka D.R, "Mallory and Irvine on Mount Everest: Did extreme weather play a role in their disappearance?" Weather, Wiley-Blackwell, 2010, [DOI: 10.1002/wea.590](https://doi.org/10.1002/wea.590)

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