Trade Winds

In the 15th century, Europeans wanted to find a way to sail to India, but the winds, which blew in the wrong direction, thwarted the sailors. Eventually, some clever Europeans found a way to use the wind belts to their advantage. How can trade winds and westerlies be used to sail from Europe to India and back?

Planetary winds have long dictated the course of world exploration. In the 15th century, during the Age of Exploration, Europeans were desperate for a sea route to the riches of India. The challenges of sailing around Africa had long stymied the best seafarers.

Several ships sailed out of the Mediterranean and caught the Atlantic trade winds to the Canary Islands west of Africa. The trade winds always blow in the same direction, however, which made it difficult to get home.

In the early 15th century, Portuguese sailors learned a trick called volta do mar, or “bend in the sea.” Today it is known as tacking. Bartolomeu Dias used this technique in 1488 and successfully sailed around the southern tip of Africa. He might have reached India, but his crew revolted and forced him home.

Sailing south near the African coast, Dias encountered southerly trade winds. He decided to tack southwest into the wind, thereby gaining distance to the south as well as to the west. This westward sailing might have seemed counterproductive, as it took his ship farther from India, not closer. It did, however, take him to a wind belt starting at 30 degrees south latitude with prevailing westerly winds. These winds blew Dias east around the tip of Africa.

Vasco da Gama finally opened the ocean trade route to India in 1497. His four ships reached the Cape of Good Hope by sailing three times the distance Columbus sailed to reach the New World. Da Gama sailed southwest on the trade winds for

**Extension**

Consider the ways that modern technology makes ocean sailing easier today. Are today’s sailors still affected by planetary winds? What equipment would you send back in time to Vasco da Gama if you could? Explain why.

Explore how our understanding of global winds has improved over time.

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