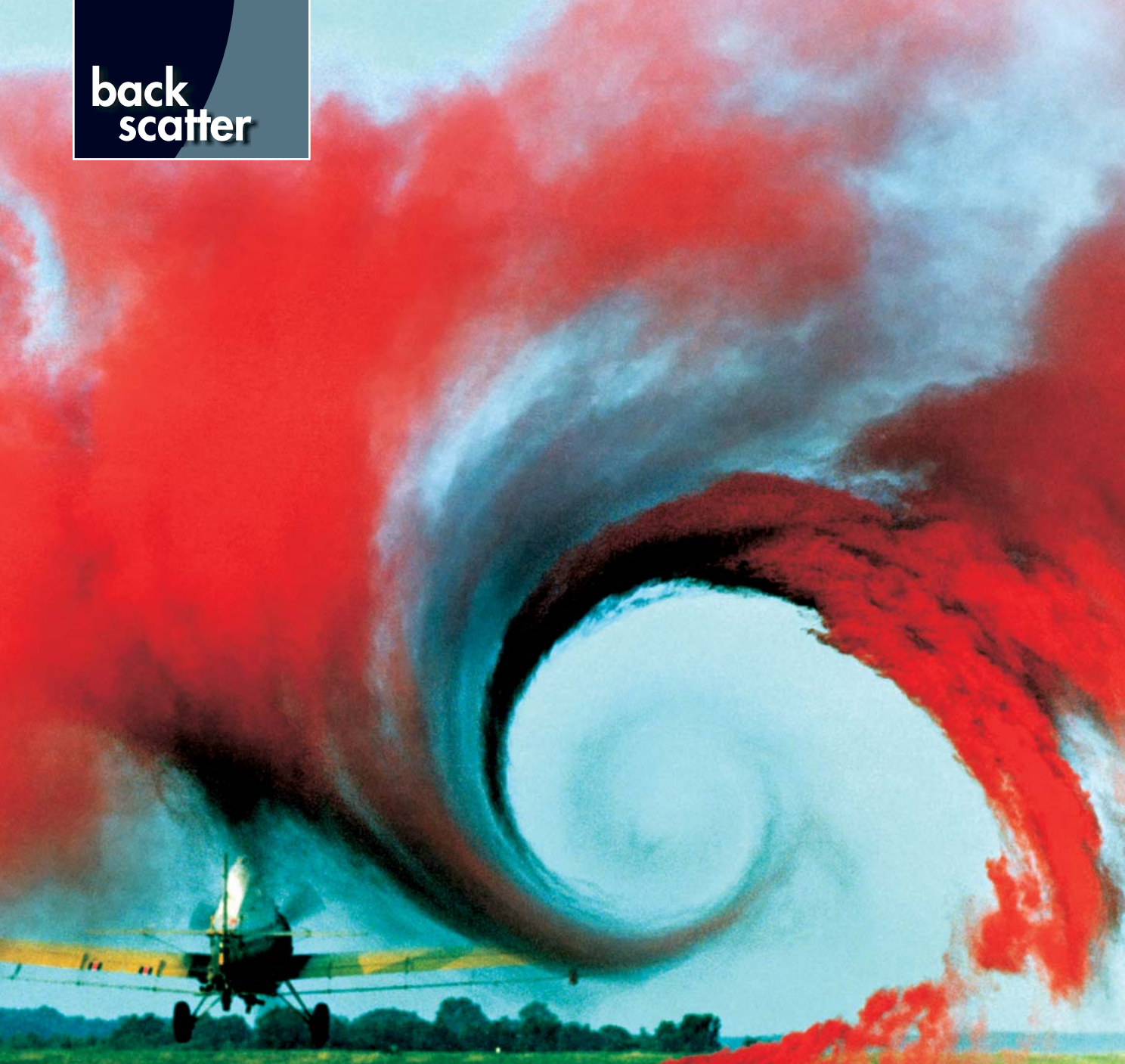




Airplane vortices

In addition to generating lift, airplane wings create spiraling vortices that trail horizontally behind the plane. (Such vortices are also produced by sails and keels on sailboats, as described in the article by Bryon Anderson on page 38.) A plane's vortex wake can produce dangerous but invisible turbulence for other planes flying through it, and is of special concern during takeoffs and landings since it can cause the encountering planes to lose control and possibly hit the ground. Wake vortices are thus a limiting factor for flight throughput at commercial airports.

Wind tunnels, supercomputer simulations, and flight tests are among the tools being brought to bear by numerous research groups to better understand wake vortices and how to minimize the hazard they create. Here, the vortex created by the wing of a small agricultural plane is revealed by colored smoke rising from the ground. (Courtesy of NASA Langley Research Center.)

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