



Traffic Cops of the Skies

Flying has never been more accident-free, thanks to the **unsung heroes** of air traffic control

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Every day, about 32,000 commercial flights zip across the sky in the United States, tracing a dense web of crisscrossing paths. Factor in storms, turbulence, occasional equipment malfunctions, and increased traffic, and it's a marvel that flights arrive at their destinations without a mishap, let alone on time. And yet commercial aviation has the lowest accident rate of all forms of mass transit.

Precise aerial choreography is all in a day's work for the nation's 15,000 air traffic controllers. Some orchestrate passage of planes at high altitude through designated airspaces; others regulate arrivals and departures at individual airports. All work together in a seamless network to guide your flight safely and efficiently from gate to gate. Here's a sample coast-to-coast flight showing how the system works.

1 TAKEOFF

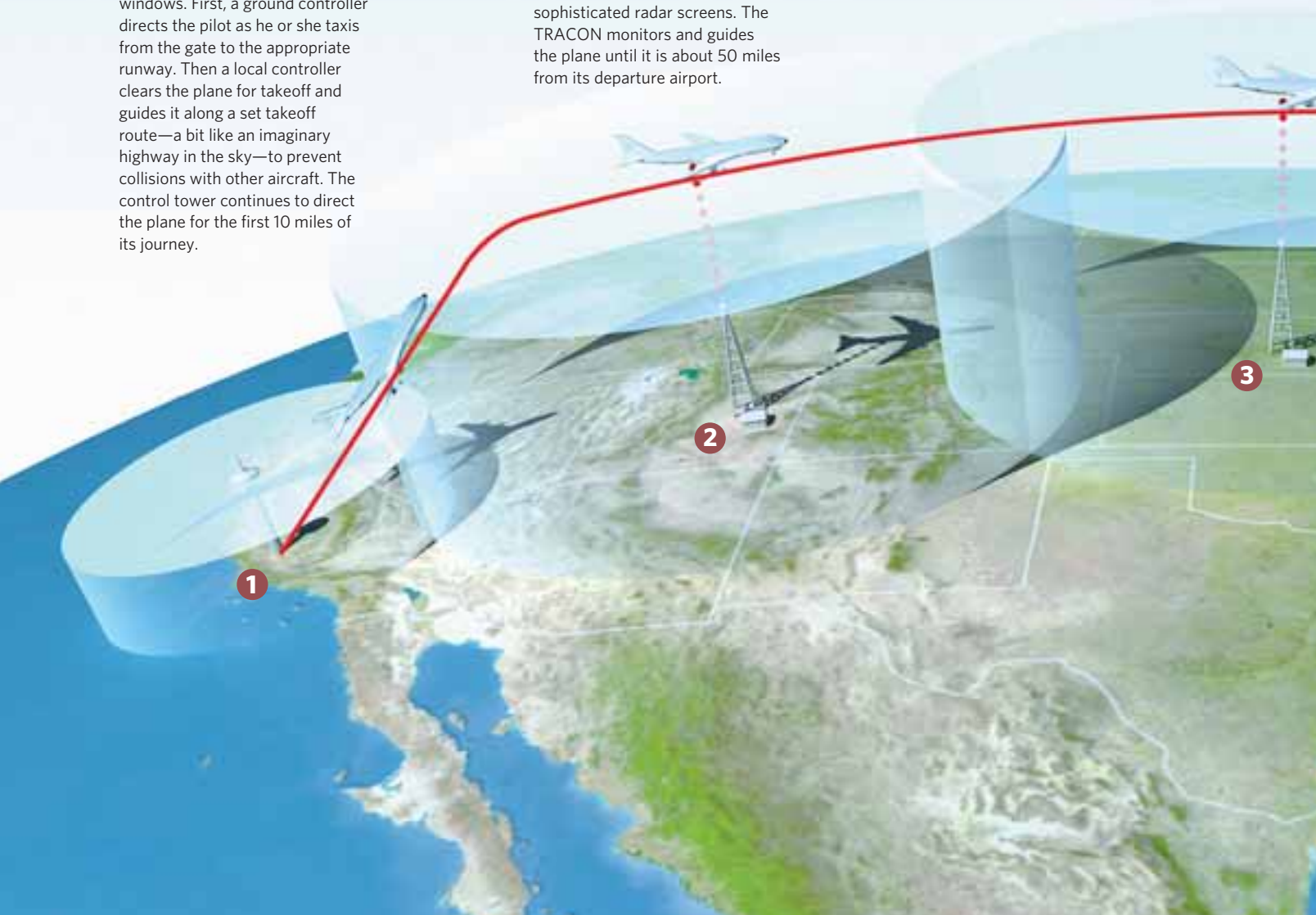
Controllers who work at the airport—perched high above ground in a **control tower**—help guide the plane into the air. They monitor the aircraft's position both by looking at a computer screen and by direct observation through the tower's giant windows. First, a ground controller directs the pilot as he or she taxis from the gate to the appropriate runway. Then a local controller clears the plane for takeoff and guides it along a set takeoff route—a bit like an imaginary highway in the sky—to prevent collisions with other aircraft. The control tower continues to direct the plane for the first 10 miles of its journey.

2 ASCENT TO CRUISING ALTITUDE

When the plane leaves the tower's controlled airspace, a **Terminal Radar Approach Control (TRACON)** facility takes over. The job of a TRACON, which may have several airports within its airspace, is to help planes navigate skyward to their ultimate cruising altitude. TRACON controllers work in dark, windowless rooms, tracking aircraft using sophisticated radar screens. The TRACON monitors and guides the plane until it is about 50 miles from its departure airport.

3 HIGH-ALTITUDE FLIGHT

As the plane leaves TRACON airspace, an **En Route Center** takes the baton. U.S. airspace is divided into 21 zones (see map facing page), each with its own En Route Center, whose controllers direct high-altitude air traffic. As a plane crosses the country, it is passed smoothly from one En Route Center to the next.

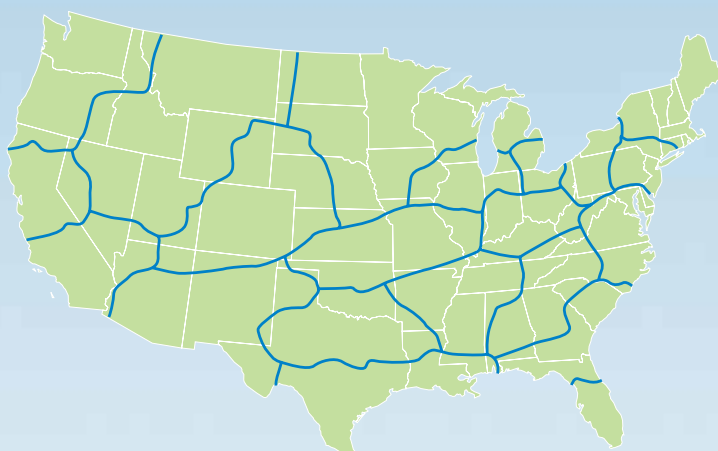




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AIR TRAFFIC CONTROL ZONES

The country is divided into 21 zones (above right), each with an air traffic control center where controllers work in darkened rooms (top left). They track every plane in their assigned air-space using advanced computer and radar technology (left).

4 DESCENT AND APPROACH
When the plane begins to descend toward the airport, it once again enters **TRACON** territory. A controller at the local TRACON takes the reins, guiding the flight along the “in-sky” approach route and helping the pilot position the aircraft for arrival.

5 LANDING
When the plane is within 10 miles of the airport, a controller at the **airport tower** checks the runway to make sure it’s clear, helps the pilot align the plane with the runway, and then gives clearance to land.

