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What Happened to Flight 370

Christine Negroni investigates the world's most mysterious crashes—including the disappearance of Amelia Earhart's twin-engine Lockheed Electra—in "The Crash Detectives."



A mural memorializing the disappearance of Malaysia Airlines MH370 in Kuala Lumpur, Malaysia. PHOTO: GETTY IMAGES

By Edward Kosner
Sept. 30, 2016 12:13 pm ET

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A colleague once wrote a book about plane crashes based on investigative reconstructions and transcripts of the recovered cockpit recordings. He discovered two things: Most crashes were the result not simply of pilot error, bad weather or mechanical malfunction but of rare coincidental sequences of such factors; and, invariably, the doomed pilots' last words were, "Oh, s—!"

The safety of commercial airline flight is one of the wonders of human ingenuity. By one reckoning, a domestic airline passenger has one chance in seven million (or 0.000014%) of dying in the crash of any flight, many times better odds than being killed by a lightning bolt in the backyard. Still, few people experience moist palms, dry throat and rapid heartbeat when they cinch up their seat belts in the family SUV the way some do when the engines on their jetliner rev and the plane accelerates down the runway on its takeoff roll.

Reading Christine Negroni's fascinating "The Crash Detectives" might dry some of those sweaty palms but nibble at the confidence of other ticketed passengers. An aviation writer and sometimes crash investigator herself, Ms. Negroni is especially adept at delineating the intricacies of the modern airliner's linked technologies and, consequently, all the things that have gone wrong and inevitably will go wrong again. She explores aviation calamities as legendary as the disappearance of Amelia Earhart in her twin-engine Lockheed Electra over the Pacific 79 years ago and as fresh as Malaysia Airlines Flight 370, a mammoth Boeing 777 that vanished with 239 souls, presumably over the Indian Ocean, in March 2014.

THE CRASH DETECTIVES

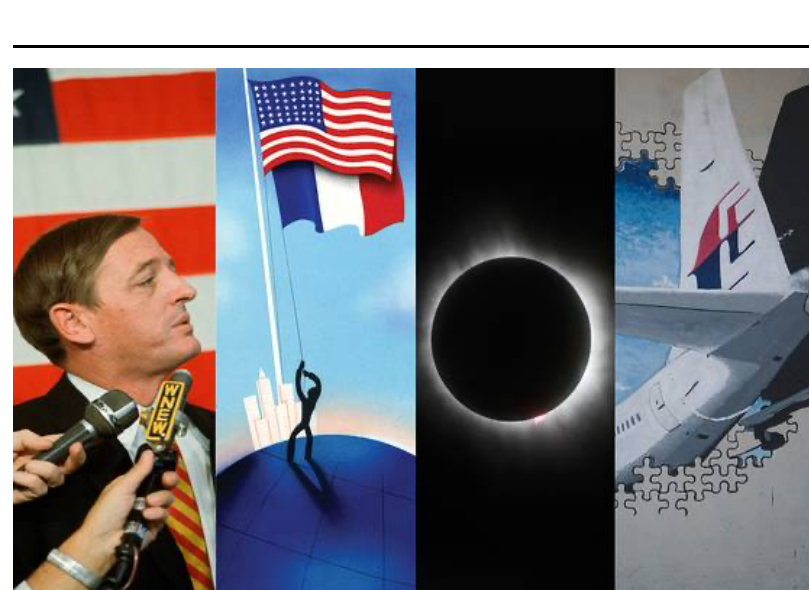
By Christine Negroni

Penguin, 276 pages, \$17

Ms. Negroni's theory of what happened to Flight 370 is the most intriguing part of her book. The plane's disappearance has been blamed on everything from a missile strike to pilot suicide, not to mention hijacking, both physical and electronic. One lunatic theory has it that the U.S. military captured the plane and secreted it,

its crew and passengers on the Indian Ocean outpost of Diego Garcia. Another has the jetliner swallowed up by a black hole. Veteran pilot Zaharie Ahmad Shah's home flight simulator supposedly had a test route resembling the vanished plane's course programmed in it. And he was disconsolate over his failing marriage. Or he was a fanatic allied with a disgranded Malaysian politician. Or something.

Applying Occam's razor to records of voice and other transmissions from the plane and its electronic status reports to an aviation satellite, Ms. Negroni offers a far simpler solution to the mystery. In her scenario, Flight 370 suffers a sudden and cataclysmic—but unexplained in the book—depressurization at 35,000 feet about 40 minutes after takeoff while Capt. Shah is taking a bathroom break and the big jet is in the hands of the inexperienced, 27-year-old first officer, Fariq Abdul Hamid.



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Papers and debris whirl around the moist cockpit, which fills with white mist as the frigid air rushes in and Hamid struggles to don his emergency oxygen mask, send a distress call and dive to a lower altitude. The problem is that he has only about 15 seconds before hypoxia—oxygen deprivation—renders him all but senseless. Capt. Shah is already too far gone to get back into the cockpit to help. Lapsing in and out of consciousness, Hamid mistakenly turns off the plane's transponder, which transmits its identity, location and other data. He changes course several times—perhaps in a befuddled effort to find a place to land. Finally he passes out for good and—according to satellite transmissions—Flight 370 flies on for five hours until it runs out of fuel and falls into the Indian Ocean.

The absence of wreckage in the South China Sea beneath the spot where the plane was stricken, Ms. Negroni writes, rules out a bomb or missile strike. Indeed, confirmed debris from Flight 370 that washed ashore in southeast Africa is consistent with the idea that the plane, its tanks empty, ended in the Indian Ocean.

Her explanation inevitably builds inference on inference. She determines whether Shah or Hamid was at the controls at any point by assuming that the other is handling voice communications. She assumes that Hamid mistakenly turned off the transponder by fiddling with the wrong knob while oxygen deprived. She dismisses reports that the plane made a series of abrupt climbs and dives by calculating that it could never have flown on as long as it did unless fuel was conserved by maintaining a steady cruising altitude. Still, her scenario is persuasive, at least to the non-specialist.

The vanished MH 370 is just one of the aviation mysteries Ms. Negroni parses. There is the still unexplained disappearance without a trace of a Pan Am Clipper flying boat—the intercontinental 777 of its time—78 years ago near the Philippines on the final leg of an island-hopping five-day journey from San Francisco. In 1961, a United Nations–chartered DC-6 crashed approaching an airport in what is now Zambia during a civil war in the former Belgian Congo just to the north. The body of one of the passengers was found propped against an anthill. It turned out to be Dag Hammarskjöld, the U.N.'s secretary-general, and he had been shot. The crash has been investigated four times, but the cause of the incident—and Hammarskjöld's wound—have never been satisfactorily explained. "Ambiguity may be the best cover-up of all," Ms. Negroni concludes.

One coverup she demystifies involves an Air New Zealand DC-10 that crashed into the 12,000-foot Mount Erebus volcano in clear weather during a sightseeing junket to Antarctica in 1979, killing all 257 aboard. Airline executives fished documents and otherwise tried to hide the truth about the accident. As it happened, the pilot had been given altered navigational data to program into the plane's guidance system that took the flight over the mountain rather than McMurdo Sound. Sunlight diffused off the bright white ice shelf temporarily blinded the pilots, and they flew right into the volcano that wasn't supposed to be there.

And then there are the innovations in airplane design and technology that make flying safer—unless they turn out to be hidden catastrophic hazards, "unknown unknowns," in the term of art. There was a deadly flap handle on the DC-8; a flyaway cargo door on the DC-10; rudder controls on the Boeing 737 that reversed themselves; and, most notoriously, the mammoth fuel tank mishap on the Boeing 747. The Boeing 747 tank was for some reason located over air-handling equipment that could heat the fuel and fumes in the chamber into a potentially explosive mixture ignitable by a single spark. Such a spark touched off the catastrophe that broke apart TWA Flight 800 off Long Island in 1996, killing all 230 passengers and crew. Crash investigations led to fixes on all these dangerous parts, but the evolution of jetliners into ever more complex, computer-driven behemoths guarantees that future "unknown unknowns" lurk in the specs.

Ms. Negroni loves pilots and their heroics. The last portion of her book is devoted to the men (and fewer women) entrusted with \$300 million aircraft and the hundreds of lives filling the seats. She examines the culture and sometimes deadly politesse of the cockpit, the myth and reality of airmen with "the right stuff," efforts to improve the selection and training of pilots, and techniques to keep them alert on long-haul flights essentially flown by computers.

Everyone by now knows the saga of Chesley "Sully" Sullenberger, the 57-year-old US Airways pilot who guided his Airbus A320 with 155 aboard safely into the Hudson River seven years ago when Canada geese flew into the plane's jet engines after takeoff from LaGuardia. Ms. Negroni also has less familiar tales of pilots who relied on past experience, "right-stuff" instinct or dumb luck to rescue their craft from disaster.

The authority of the veteran airline captain is so pervasive that co-pilots and other lesser beings hesitate to correct the man at the yoke even in extremis. Many pilots, as it happens, do have that mystical "right stuff" to save the day, but some are just screwing up. Similarly, the complexity of modern airliners makes it essential that cockpit crew, air controllers, maintenance workers and others learn how to focus, backstop one another and function in a crisis to avert disaster.

For all the horror stories in "The Crash Detectives," the reasonable reader will be able to bring some sanguine about modern commercial airline travel than before. As a probably apocryphal veteran pilot in the book tells his passengers as they pull up to the gate: "Welcome to your destination, ladies and gentlemen. The safest part of your journey has come to an end."

—Mr. Kosner is the former editor of Newsweek, New York, Esquire and the New York Daily News.

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SHOW CONVERSATION (13)

Comments section with 13 entries.

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