

## **Third Place: Nonfiction**

"T-15 Crashes: A Disastrous History of Aviation Safety"

By Blake Williams

Flight is, undeniably, a modern marvel. Humanity may have first achieved a brief flight at any point in our history in which we resided close to a cliff, but controlled flight, the kind that you survive, is certainly new. It has since become a stand-by mode of transportation in late-capitalism. Yet, every time I take off into the sky in a cheap metal tube with jet engines strapped to the side, roaring with explosions and gale-force winds, I cannot help but to feel two things. First, awe, at the world made small below me, and, second, dread, with the certainty that the engines will fail and my bones and meat will be dashed to the ground like craps dice at a casino. Fortunately for my anxiety, we are in the safest era of flight in history. From 2011 to 2020, there were only an average of 1.4 deaths per year in the USA, compared to 69.7 from the decade prior (although this figure is noticeably inflated due to the 531 deaths in 2001, most of which come from the many deaths on September 11th) and 98.4 during the 1990s, all according to the Bureau of Transportation Statistics<sup>1</sup>.

As that data implies, flight has not always been as safe as it is today. Although we may now think of the Wright brothers as the fathers of aviation, and they certainly were the first to fly a powered plane, their achievements only tell so much of the story<sup>2</sup>. I wouldn't be soaring far above the Appalachian Mountains and the vast forests of the south or the great plains of the west on board a flight I paid, on average, about 142 dollars for, if the story ended there<sup>3</sup>. No, the story is much, much longer than that, and much deadlier. To tell the story of aviation, you have to tell the story of aviation disasters, and that is exactly what I intend to do.

The first death in our journey is that of a man named Pilâtre de Roziers, who, according to the French author Fulgence Marion, “was the first to trust himself to the wide space of the sky,” when he prepared to cross the Channel in a modified “Aero-Montgolfière” balloon<sup>4</sup>. De Roziers and his brother set off on the 15th of June in 1785 and, less than 30 minutes later, the balloon caught fire and the pair plummeted from the sky. De Roziers was found dead on impact, but, allegedly, his brother survived for a few minutes longer, making De Roziers the first death in aviation, at least that I could find a reputable source for.

To find our first airplane related death, we need to jump forward more than a hundred years, to reunite with the Wright Brothers in Fort Myer in Arlington County, VA. In mid-September 1908, Orville Wright was flying a demonstration flight for the United States Army<sup>5</sup>. The plane had been modified, according to the Air Force Historical Support Division (an unnecessarily long title, if I might add) and Orville crashed it, seriously injuring himself. The army’s observer, Lt. Thomas Selfridge, was killed. This led to the postponement of some of the Army’s aviation development, but it didn’t slow the development of flight overall, as the St. Petersburg-Tampa Airboat Line would bring the first commercial passenger flight just six years later, on New Year’s Day 1914<sup>6</sup>. Just five years later, John Alcock and Arthur Brown set off from St. John’s, Newfoundland on the first nonstop transatlantic flight<sup>7</sup>. Fittingly, their flight ended with a crash in Ireland, from which both men walked away uninjured.

With progress must eventually come safety, and safety came at the hands of the city of Los Angeles. On April 7, 1920, LA issued the first ever fine for violating aviation safety<sup>6</sup>. The fine was for “reckless aerial driving” and the violator, Ormer Locklear, was a well-known aerial stunt

man who gained his notoriety while in the Army for completing the first ever in-flight transfer between two planes. Locklear blew up across the US afterward, allegedly eloping with an actress, dropping a baseball to the LA Angels on opening day, and signing deals with movie studios to star in their films. He'd even starred in a film, called "*The Great Air Robbery*," all within a year of being discharged from the military. It all came crashing down for Locklear just months after his \$25 fine. On August 2nd of 1920, while filming for another movie, entitled "*The Skyway Man*," Ormer Locklear, along with his copilot, Milton Elliot, died during a stunt<sup>8</sup>. With their deaths, America saw one of its first celebrity plane crash deaths,

Not even Locklear's death, though, caught America's eye as much as the death of Notre Dame football coach Knute Rockne. On March 31st, 1931, just 11 years after Locklear's stunt death, Transcontinental and Western Airlines Flight 5 crashed just outside of a small town in Kansas<sup>9</sup>. Later investigation revealed that, as best as anyone could tell, the laminated wood covering the wings of Rockne's Fokker F-10 had come unglued from the wing mid-flight, dooming all eight passengers on board. Their investigation was complicated by Rockne's fame, which spurred both heavy media coverage and souvenir-hungry scavengers. By the time the government made it to the crash, the vast majority of the plane had been picked away. This crash was critical for three reasons. First, it was some of the most extensive media coverage a plane crash had received to date. Second, it led to the grounding of all Fokker F-10s, which spurred the adoption of Boeing 247s and Douglas DC-2s, both of which were metal clad. Finally, while the results of investigations had not previously been released, the public were hungry enough for answers that the Bureau of Air Commerce released the results of their investigation into the Rockne crash, setting a critical precedent for passenger awareness.

The second critical disaster of the 1930's happened just five years later, on May 6, 1935<sup>9</sup>. On that day, a Douglas DC-2 carrying Senator Bronson Cutting (R-NM) crashed outside Atlanta, MO. Senator Cutting was killed, which drew ire towards the Bureau of Air Commerce from Congress. A sub-committee was created, headed by Senator Royal Copeland (D-NY) to investigate the Bureau, not just its handling of the Cutting crash, but all of its operations. Copeland's committee blamed the crash on Bureau mismanagement, particularly by providing insufficient funding for navigation aids. You see, the DC-2 had a radio navigation aid, but it was malfunctioning, dooming the plane to crash in the dark and foggy Missouri night. The committee's report led to the Air Commerce Act of 1938, creating the Civil Aeronautics Authority, which would later become the Civil Aeronautics Agency after Roosevelt split off the Civil Aeronautics Board to control safety and economic regulations, as well as accident investigation<sup>6</sup>.

The 1940's were marked by war, which, while important in the development of aviation technology, is not what we are here to investigate. The first major crash of the 1950's was actually three crashes, all in the same town, in three months. On December 16, 1951, a Curtiss C-46 crashed in Elizabeth, NJ, killing all of its passengers<sup>9</sup>. On January 22, 1952, a Convair CV-240 crashed, again in Elizabeth, NJ, killing all of its passengers and seven bystanders on the ground below<sup>10</sup>. Finally, on February 11, 1952, a DC-6 crashed, once more in Elizabeth, NJ, killing 29 passengers and 4 bystanders<sup>9</sup>. These tragedies, so close together, led not only to the temporary closure of nearby Newark Airport, but to the "Doolittle Report," penned by Jimmy Doolittle on orders from President Eisenhower. The report led to many of the features that pushed us closer to modern aviation, including the creation of clear zones on the approach of runways and increased navigation tools.

Four years later, and on the other side of the country, a DC-7 and a Lockheed L-1049 collided over the Grand Canyon<sup>2</sup>. All 128 aboard the two planes died. Both planes had just left Los Angeles Airport, LAX, triggering two major changes for the future of aviation. First, \$250 million dollars was invested in the Air Traffic Control system. Second, the federal government created the Federal Aviation Agency, the body we now know as the FAA. By December 31st, 1958, just two years after the mid-air Grand Canyon crash, the FAA assumed its full duties<sup>6</sup>. Thanks to this new organization, and the aforementioned ATC improvements, there have been no mid-air collisions in the US, at least according to Aviator Insider<sup>2</sup>.

There were more crashes throughout the 1960s, leading to some important improvements, namely the mandating of cockpit voice recorders, but our next stop doesn't come until the late 1970s<sup>9</sup>. It is impossible to discuss the history of air disasters without discussing the Tenerife disaster of 1977. On March 27th, a bomb was set off at Las Palmas airport, in Spain<sup>11</sup>. Due to this, two flights, a Pan Am 747 and a KLM 747, were both diverted to Spain's Los Rodeos Airport in the Canary Islands. Here are the confounding factors: the runway, as is typical for the area, was foggy, reducing visibility; the two panes weren't supposed to be at the airport in the first place; finally, the Dutch pilot of the KLM jet could not understand the accent of the Spanish flight controllers, and took off before the Pan Am flight was able to clear the runway. The two planes collided, killing 583 passengers and crew onboard both flights, making the Tenerife disaster the deadliest collision to that point.

Six years later, an Air Canada DC-9 would erupt into another fireball, not caused by a collision this time, but instead by a fire in the lavatory<sup>9</sup>. Because of the unregulated fireproofing, the spread through the gap between the outer and inner walls of the plane, as well as disabling the instrumentation. The pilot was able to divert and successfully land at Cincinnati and begin an

evacuation of the plane. 90 seconds after the doors opened, however, a flash fire erupted in the cabin, killing the remaining half of the 46 passengers in the plane. The FAA took action, mandating smoke detectors and automatic fire extinguishers in lavatories, retrofitted fire-insulation and floor lighting, and the requirement for new planes, built after 1988, to have better fire-resistance in the interior of planes<sup>12</sup>.

The FAA would introduce more fire-prevention measures in 1996, after the ValuJet flight 592 crash on May 11th<sup>12</sup>. Illegally packed oxygen generators were being stored in the plane's cargo hold and, after one was accidentally set off, the plane burst into flames. Unlike 1983's Air Canada disaster, the pilots of ValuJet 592 were unable to land the plane in time, and the plane crashed into the Florida everglades, killing 110 people. The FAA implemented similar rules for cargo holds as they did for lavatories in 1983, as well as reinforcing their rules against hazardous cargo.

More fire-proofing rules were implemented after the September 2, 1998 crash of Swissair Flight 111<sup>12</sup>. Swissair 111 was flying over the Atlantic Ocean after leaving New York City when wires in the McDonnell Douglas MD-11's in-flight entertainment system arced, creating a fire that spread throughout the plane's mylar insulation. The plane diverted toward Halifax, in Canada, but was unable to make it to land, crashing into the Atlantic and killing all 229 onboard. The FAA again took rapid action, ordering the mylar insulation to be replaced with fire-resistant insulation.

The final stop on our journey comes in New York City, in 2001. As an American, I know the story of September 11th, 2001 well. I would wager that we all do, whether we remember the moment from our own lives, or because we saw footage and heard testimonials year in and year out on the anniversary of that harrowing day. After the terrorist group Al Qaeda hijacked four airliners, they crashed them in targeted locations, save one, Flight 93, where the plane's passengers

fought back and crashed the plane in western Pennsylvania rather than its intended destination, Washington D.C.<sup>13</sup>. The other three made their destinations, crashing into the North and South towers of the World Trade Center, as well as the Pentagon. According to the 9/11 Memorial, nearly 3,000 people died that day, making the September 11th attacks, when viewed as one disaster, the deadliest aviation disaster in history.

That same day, the FAA halted all air traffic for, as the FAA themselves say, the first time in their history<sup>6</sup>. By the end of the year, the Transportation Security Act had been passed, creating the TSA, everyone's favorite part of visiting the airport. The TSA, according to the act, was the division of the DoT to be responsible for airport security. This includes, as any airplane traveler can tell you, bag searches, pat downs, x-rays, and controlled movement from check-ins to gates. Whether these practices have worked is beyond my reckoning, but it certainly makes us feel safer when at the airport.

Airplane crashes and other aviation disasters have, over the course of many years, made flying, objectively, safe. From the creations of various federal regulatory agencies like the CAA and CAB, up to the FAA, to the continual upgrading of fire safety and air traffic control, flight has become radically safer since its inception. What was once a dangerous and revolutionary new technology is now one of the basic ways to travel long distances. Thanks to the improvements made after these terrible disasters, mid-air collisions and cargo hold fires are, largely, things of the past. I don't suppose that knowledge will help much as we land, though. We rocket towards the ground, you and I, in a pilot's controlled downward spiral. Then we pull out, screaming down in a straight line towards the unforgiving concrete runway. This is where those clear zones come in handy. We clear the fence, the grass before the runway, and the plane's tires crash into the ground. They scream out against the concrete as we grind to a halt. Then it's done. We're fine. About

100,000 planes do this every day and, thanks to the tireless work of the FAA and other aviation regulators across the world, all their passengers can rest, knowing that they're safe in the skies<sup>14</sup>.

Citations (in order of appearance)

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