

# Delta Air Lines Flight 191

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## Delta Air Lines Flight 191



CG render of N726DA

### Accident summary

<b>Date</b>	August 2, 1985
<b>Type</b>	<a href="#">Pilot error/wind shear/Microburst</a>
<b>Site</b>	<a href="#">Dallas-Fort Worth International Airport, Texas</a>
<b>Passengers</b>	152
<b>Crew</b>	11
<b>Injuries</b>	27
<b>Fatalities</b>	135 (1 on the ground)
<b>Survivors</b>	27
<b>Aircraft type</b>	<a href="#">Lockheed L-1011-385-1 TriStar</a>
<b>Operator</b>	<a href="#">Delta Air Lines</a>



As the aircraft flew over Louisiana, a thunderstorm formed directly in its path. The aircraft began its descent procedures over Louisiana, heading over the planned descent route. Captain Connors then recognized the forming thunderstorm and took action to change the plane's heading to avoid the turbulent weather.

At Dallas-Fort Worth International Airport, weather was also poor and an isolated thunderstorm developed near DFW. The Captain and copilot noticed the isolated storm ahead, but decided to proceed through it anyway, which resulted in the aircraft getting caught up in a microburst.

At about 1500 feet above ground level (460 m), First Officer Price mentioned to Captain Connors that he saw lightning in one of the clouds ahead.

At 800 feet (240 m) above ground level, the airspeed increased without crew intervention. Although the aircraft was supposed to land at 149 knots IAS (276 km/h), its airspeed instead increased to 173 knots IAS (320 km/h). Price tried to stabilize the aircraft's speed, but Connors had recognized the aircraft's speed increase as a sign of wind shear, and he warned Price to watch the speed. Connors told Price, "you're going to lose it all of a sudden, there it is." Suddenly, the airspeed dropped from 173 to 133 knots IAS (320 to 246 km/h), and Price pushed the throttles forward, giving temporary lift. The airspeed then suddenly dropped to 119 knots IAS (220 km/h); on the cockpit voice recording Connors can be heard saying "Hang on to the son of a bitch!" In addition to the sudden tailwind, the aircraft also experienced a downdraft of more than 30 feet per second. This downdraft would reverse itself several times over the final moments of the flight.

As Price struggled to maintain control of the aircraft through rapidly changing wind conditions, it was hit by a sudden sideward gust, causing a rapid roll to the right and an increase in the aircraft's angle of attack. Price attempted to regain control by pushing the aircraft's nose down to avoid a stall, but the severe wind conditions continued to force the airplane towards the ground. Its descent rate reached 5,000 feet per minute at 280 feet above ground level. Price pulled the aircraft's nose up forcefully just before impact as the captain called "TOGA" ("Take Off/Go Around"), reducing the airplane's descent rate to 10 feet per second at the initial touchdown.

Delta Flight 191 first struck the ground on a field about 6,300 feet north of the approach end of runway 17L and bounced back into the air. Then, while crossing State Highway 114, it came down again, with an engine striking a black 1971 Toyota Celica vehicle, killing its occupant, William Hodge Mayberry. The aircraft also struck a highway light pole near its wing root, igniting the wing fuel tank, before skidding onto the airfield in Irving, colliding with two 4-million US gallon (15,000 m<sup>3</sup>) water tanks and exploding into flames. Most of the survivors of Flight 191 were located in the rear, smoking

section of the aircraft, which broke free from the main fuselage before the aircraft hit the water tanks. Authorities took most of the survivors to [Parkland Memorial Hospital](#).<sup>[1]</sup>

Two of the passengers who initially survived the impact died more than 30 days after the accident. On the ground, an airline employee who assisted the rescue of the passengers became hospitalized overnight after feeling chest and arm pains.<sup>[2]</sup>

Delta Air Lines Flight 191 has the second highest death toll of any aviation accident involving a Lockheed L-1011 anywhere in the world after [Saudia Flight 163](#).

#### [\[edit\]](#)Investigation

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Numerous public safety agencies responded to the crash including the Dallas/Fort Worth Airport Department of Public Safety, the Texas Department of Public Safety, the Irving Fire Department, the Irving Police Department and all available third watch personnel from the Dallas Police Department's Northwest Patrol Division.

After a long investigation, the [National Transportation Safety Board](#) deemed the cause of the crash to be attributable to pilot error, combined with extreme weather phenomena associated with microburst-induced wind shear.<sup>[2][3]</sup>

The NTSB attributed the accident to lack of the ability to detect microbursts aboard aircraft; the radar equipment aboard aircraft at the time was unable to detect wind changes, only thunderstorms. After the investigation, [NASA](#) researchers at [Langley Research Center](#) modified a [Boeing 737-200](#) as a testbed for an on-board [Doppler weather radar](#). The resultant [airborne wind shear detection and alert system](#) was installed on many commercial airliners in the United States after the [FAA](#) mandated that all commercial aircraft must have on-board windshear detection systems.<sup>[4]</sup>

#### [\[edit\]](#)Legacy

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The crash of Delta Flight 191 was later the subject of a [television movie](#) called *[Fire and Rain](#)*.

The crash of Delta Flight 191 was also shown on an episode of *[When Weather Changed History](#)* on [The Weather Channel](#) and in a British air accident series known as Black Box (Deadly Weather) from [Channel 4](#).

"Slammed to the Ground" of *[Mayday](#)* (*Air Crash Investigation* or *Air Emergency*) on [Discovery Channel Canada](#) and [National Geographic](#) dramatized the disaster.

The flight number "191" has been associated with numerous crashes and incidents over the years, including the deadliest crash in United States History. It has even prompted some airlines to discontinue the use of this number. See [Flight 191 \(disambiguation\)](#) for more information.

## **Memorial**

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**In 2010 (25 years after the incident) a memorial was installed at Dallas-Fort Worth International Airport's Founders Plaza.**<sup>[5]</sup>

### Passengers

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- Don Estridge, known to the world as the father of the IBM PC, died aboard this flight along with his wife, Mary Ann,<sup>[6]</sup> two IBM summer interns, and six additional family members of IBM employees.<sup>[7]</sup>