

# DOWNBURST OF DESTRUCTION

## "THE 1985 CRASH OF DELTA FLIGHT 191"

### Overview:

August 2, 1985 was a day that went down in infamy in Dallas, Texas. What seemed like any ordinary Texas afternoon with high humidity and hot temperatures was really a breeding ground for a pop up severe storm. Delta Airlines Flight 191, a Lockheed L-1011 that was headed from Fort Lauderdale, FL to Los Angeles, CA had a scheduled stop in Dallas. As Flight 191 approached under the trusted skill of experienced Captain Edward Connors, something strange began to happen. **A thunderstorm was forming at the beginning of the runway**, and it barely showed up as anything significant on radar. At the National Weather Service office in Dallas, the aviation meteorologist did not issue a warning, which sometimes happens with severe pulse storms, and the pilots were not prepared.

The thunderstorm produced a downburst which gave the aircraft a strong headwind upon descent causing the pilot to decrease thrust. As the plane passed through the center of the downburst, a strong tailwind hit it near the runway. The plane rapidly sped up and the pilot tried to slow it down to land. Once he realized they were moving too fast to land, he tried to pull up but it was too late. The aircraft crashed in a field, bounced in the air, and came down again on Highway 114, crushing a small Honda and killing the driver. Going at 220 knots, the plane also hit two 4 million gallon water tanks causing water to go everywhere and mass chaos for the first responders who came to help. 137 people died from this accident.



Delta Air Lines Lockheed L-1011 TriStar 1 N726DA / © E. Trum collection



Yourweatherblog.com



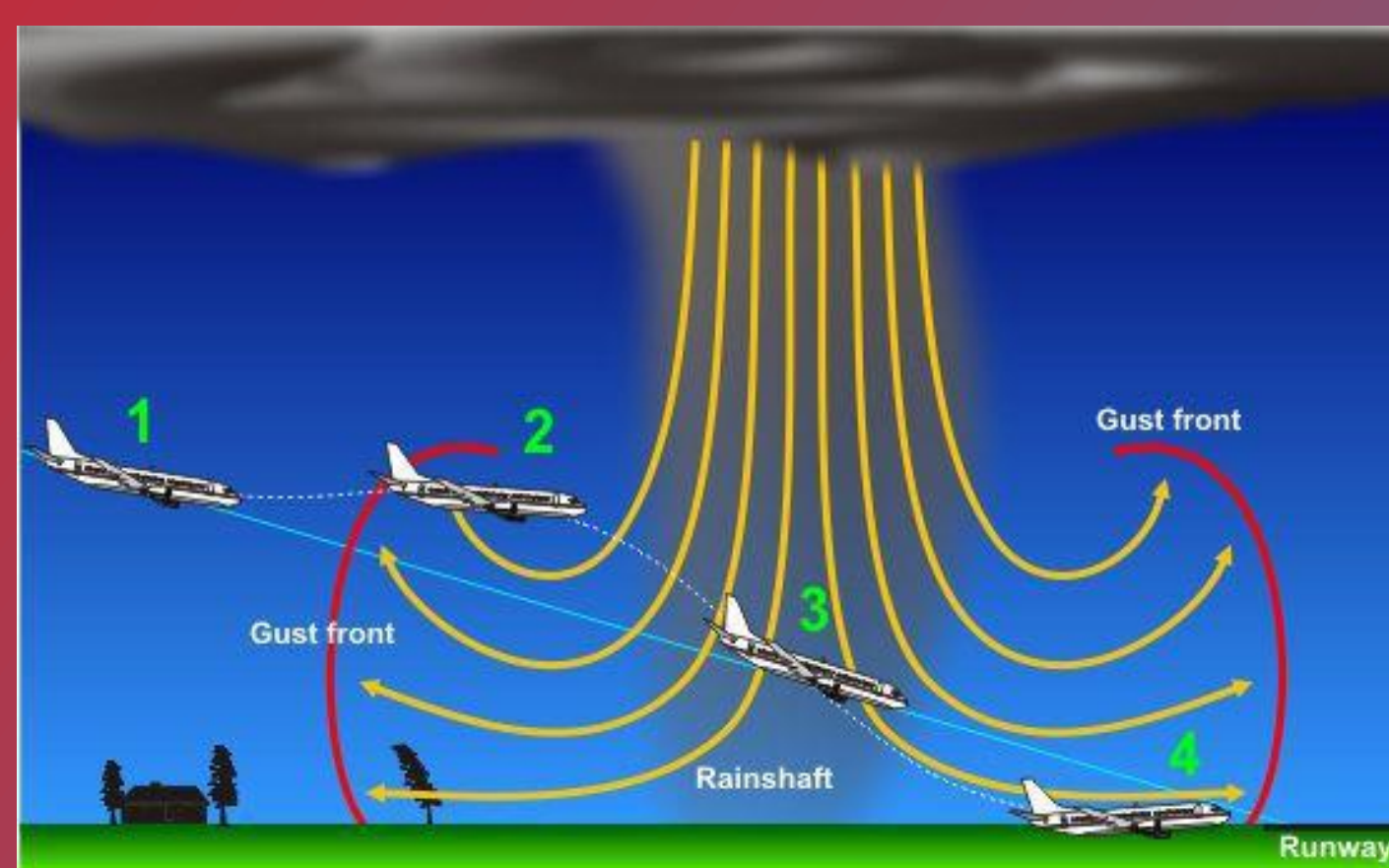
Wreckage of N726DA's tail section after a microburst slammed the aircraft into the ground. A Boeing 727 can be seen in the background flying past the crash scene. NOAA 2013



Accuweather.com

### What is a Downburst?

- A strong downdraft from a thunderstorm which causes damaging winds on or near the ground
- Damaging winds extend 2.5 miles or less from the storm
- Lasts 5 to 15 minutes
- Can cause winds as high as 100 mph
- Very dangerous to planes on takeoff and landing



Blogs.mprnews.org



WFAA-TV Dallas, TX

**"I still live with nightmares. My wife still has to wake me up in the middle of the night"**  
 -Richard Laver (crash survivor)

### Lessons Learned:

- In the aftermath of this tragedy, NASA developed sophisticated airborne wind shear detection systems that pilots could use while in-flight.
- The NTSB recommended improved communication between meteorologists on the ground and pilots in the air. Pilot training was also improved.
- Airports at high risk to downbursts were fitted with improved radar technology that allow meteorologists to detect microbursts in a more timely fashion.
- Despite all of the improvements since 1985, landing in violent weather still presents a safety risk.

### Impact:

- 137 fatalities: 8 of 11 crew members, 126 of 152 passengers, 1 person on the ground, and 2 people a month after the crash
- Airplane destroyed
- Highway damage
- Destruction of two large water tanks
- Cost Delta an untold amount of money and their reputation



WFAA-TV Dallas, TX



Airdisater.com



Dallasnews.com

### Identical models, different fates.

Ben Soto  
 University of Louisville