

The Crash of Air Florida Flight 90

What Happened?



Salvage operations on January 19, 1982.
Photograph courtesy of airdisaster.com.

On January 13, 1982 around 4:00PM, Air Florida Flight 90 took off from Washington National Airport in Washington D.C. following a snowstorm. During take off, the pilot and first officer quickly realized there was a problem with the aircraft when it pitched up sharply against the pilot's control. Unable to be coaxed to return to a normal angle of ascension, the aircraft quickly lost air speed and entered a stall. Flight 90, with limited control function and no airspeed, crashed into the 14th Street Bridge, crushing seven vehicles and destroying 97 feet of guard rail before falling into the freezing water of the Potomac River.



Salvage operations on January 19, 1982.
Photograph courtesy of The Washington Post.

What Caused It?

The primary cause of the crash was lack of control due to ice on the wings and instrumentation and engine failure. But what led to these issues?

The January 13 snowstorm was not large by blizzard standards, but the 4 to 8 inches which accumulated throughout the Washington D.C. area did so very quickly. This coupled with temperatures well below freezing led to dangerous flight conditions.

The aircraft was partially deiced before a delay occurred due to a runway needing to be plowed. During this delay, the Captain requested deicing be halted. Upon halting deicing, ground crews failed to use the covers for the static ports and engine inlets. Upon reopening of the airport, the plane was again deiced and was given permission to push back from the gate. The towing system used to move aircraft was unsuccessful in pushing Flight 90 back from the gate due to weather conditions.

In an attempt to push back, the Captain used reverse thrust. While not only was this unsuccessful, it caused large amounts of storm debris to be sucked into the engine. A towing system with chains attached was called in and the aircraft was pushed back from the gate.



Salvage operations on January 19, 1982.
Photograph courtesy of airdisaster.com.

Once the aircraft entered the queue for takeoff, the pilot decided to use the hot exhaust from the plane in front of them to melt the snow on their wings instead of using the aircraft's anti-ice system. The exhaust pushed the snow to the trailing portion of the wings where it refroze to form ice impacting the pilot's control.

In addition, despite temperatures in the teens and 4 to 6 inches of snow, the crew did not activate the engine's anti-ice systems. The recording of the preflight checklist included this conversation:

CAM-2: Air conditioning and pressurization?
CAM-1: Set.
CAM-2: Engine anti-ice?
CAM-1: Off.

(Courtesy of the NTSB Report on the Flight 90 Crash)

During take off, the First Officer noticed an engine pressure ratio reaching the limit before the throttles were fully engaged. Despite multiple attempts to inform the Captain of an issue, the pilot ensured the co-pilot that everything was in order. The ice buildup on the compressor inlet pressure probe, the probe which measures engine power, caused a false reading. In the cockpit, an engine pressure ratio (EPR) of 2.04 was seen, when in fact it was only producing 1.70 EPR or about 70% power.

The Crash's Impact

The crash of Air Florida Flight 90 resulted in four deaths on the bridge. In addition, 74 passengers and crew members were killed. Only four passengers and a flight attendant were rescued.

When the crash occurred, many individuals attempted to save passengers. Roger Olian, a sheet metal foreman from Washington, jumped into the water but was only able to swim a few yards before having to return. Despite those on the shore trying to convince him not to, he returned to the water once more. After being unable to swim to survivors, he was placed in the Jeep of one of the witnesses in an attempt to fight hypothermia.

A United States park police helicopter was instrumental in the rescue of the survivors. The crew of the helicopter flew dangerously close to the water to provide those in the water with a line to attempt rescue.



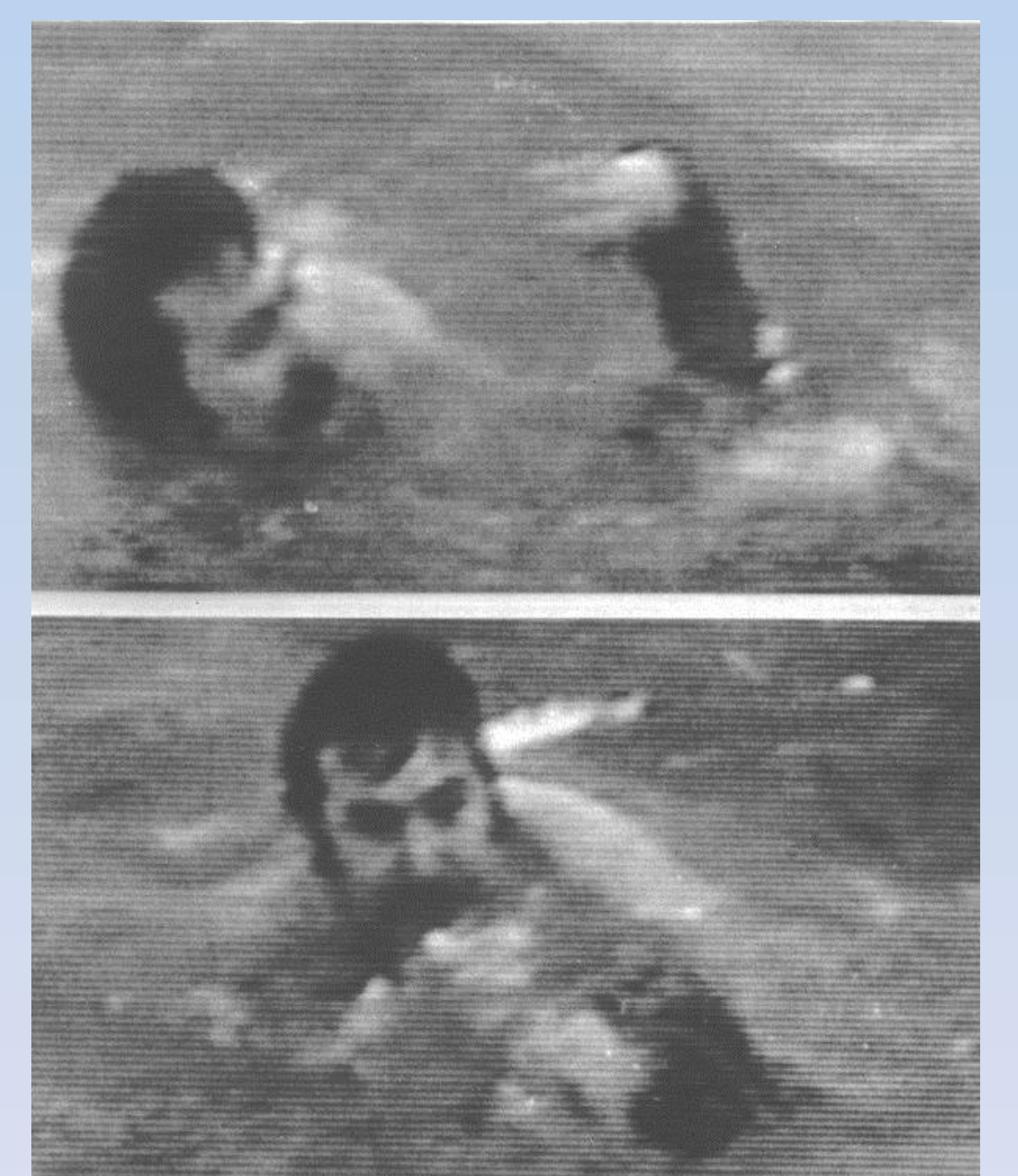
Photograph showing the section of the 14th Street Bridge damaged by the crash. Photograph courtesy of The Washington Post.

"I heard screaming jet engines. . . It was like the pilot was still trying to climb, but the plane was sinking fast." – Driver on the 14th St. Bridge

(Quote courtesy of The Washington Post.)

A few passengers were too weak to grab the lines from the helicopter, and on two other occasions individuals plunged into the icy water to help. The first, Lenny Skutnik dove into the water from the shore to help Priscilla Tirado, one of the passengers on Flight 90. And paramedic Gene Windsor dropped from the helicopter to attach a line to another survivor, Nikki Felch.

Arland D. Williams Jr. was given the line on multiple occasions but offered it to other more injured passengers. Williams was unable to be rescued and died due to drowning. The 14th Street Bridge was later renamed the Arland D. Williams Jr. Memorial Bridge to honor his heroism.



Lenny Skutnik after he dove into the freezing waters of the Potomac to save Priscilla Tirado. Photograph courtesy of The Washington Post.

Lessons Learned

- Improved deicing chemicals and procedures
- Better training for ground crews on proper deicing
- Planes now equipped with cockpit alerts based on ice conditions
- Pilots now encouraged to max the throttle if receiving faulty readings and losing air speed