

## Anatomy of a Wrong Surface Landing Part 2: Environment – Transcript

In this three-part series of animations, we will review factors that contribute to wrong surface events. Part 1, Pilot; Part 2, Environment; and Part 3, Training.

In Part 1, we reviewed human factors affecting pilots, such as confusion, complacency, and expectation bias. Click onto the Animations tab on the upper right-hand corner to review Part 1.

Continuing on to Part 2, we will now focus on factors affecting the pilot's environment, such as airspace congestion, task overload, and airport geometry.

The following replay is based on a real-life event. Cherokee-Two-Whiskey, a light single-engine aircraft on approach to a busy general aviation airport with parallel runways during daytime VMC, *lands on the wrong runway*.

The airport diagram identifies multiple hotspots, including one highlighting the proximity of the parallel runways.

As you watch, keep an eye out for environmental factors that negatively affected the pilot's ability to understand the clearance, and possibly leading to the wrong surface landing event.

Pilot Cherokee-Two-Whiskey (C2W): Tower, it's Cherokee-Two-Whiskey, Six Southwest, information India for landing.

Tower: Left, downwind runway 2-8 Right, right side.

Pilot C2W: Left, downwind for 2-8 Right, Two-Whiskey.

Tower: Five-Seven, runway 2-8 Right, clear for the option.

Pilot 357: Clear for the option 2-8 Right, Five-Seven.

Tower: Two-Whiskey, number two following a Cherokee, there be the numbers on the right downed, report on the sight.

Pilot C2W: Looking, Two-Whiskey.

Pilot 840: Yeah, we've completed our orbits of [unintelligible] lake and we're en route to Air Lake.

Tower: Four-Zero, pre [unintelligible] have changes approved; no observed air traffic with Air Lake at this time. Have a great flight.

Pilot 840: All right. Thanks. You have a great night too.

Tower: Two-Whiskey, the opposite; uh, Cherokee is on the right base. Go off to your left.

Pilot C2W: Which runway is he going to?

Tower: Both of you are assigned to runway two; all right, you'll be following him.

Pilot C2W: OK, Two-Whiskey. We'll start our base.

Tower: Two-Whiskey and space and [unintelligible] look good, number two, with [unintelligible] now turning close and final. Spacing's good. Runway 2-8 Right cleared for down.

Pilot C2W: Clear for the option, runway 2-8 Right, Two-Whiskey.

What can we learn from this event? There are a number of environmental factors that may have led to the wrong surface landing.

Upon reporting inbound, the pilot was INSTRUCTED TO ENTER LEFT DOWNWIND Runway Two-Eight Right, Right Side. This instruction may have been visually confusing because of the parallel runway configuration. The larger, wider Runway Two-Eight LEFT was seen by the pilot BEFORE he acquired his assigned runway. Even with a correct readback, the pilot landed on the incorrect parallel surface.

Additionally, the Certified Flight Instructor was actively providing instruction to a student pilot which caused a distraction.

Finally, consider the high volume of traffic at the busy airport. At least two aircraft, Eight-Four-Zero and Three-Five-Seven, were nearby. This increased the complexity of the approach due to the need to see and avoid other traffic.

There are many ways we can improve the human factors affecting the pilot's environment and reduce wrong surface landing frequency.

Be aware of the pavement, lighting, and markings you are landing on, such as white markings and white lights and the center line.

Verify correct runway alignment while on approach and prior to touching down, especially when you will have to cross the extended centerline of a parallel runway.

Familiarize yourself with Chart Supplements, Airport Diagrams, and NOTAMs – especially at airports with parallel runways. Review additional guidance in the Pilot's Handbook of Aeronautical Knowledge.

Check magnetic compass orientation, reference instrument approach courses, or other tools.

Eliminate distractions during critical phases of flight, including ill-timed flight instruction or passenger conversation.

If an assigned clearance or instruction may jeopardize safety, state "unable" and request the desired clearance.

Always be prepared to go-around if in any doubt of making a safe landing on the correct surface.

Click on the Resources tab. There, you'll find several FAA resources you can use to discuss safety with your peers and instructors.

Advisory Circular 91-73 (*ninety-one seventy-three*) reviews surface safety best practices and standard operating procedures for single-pilot operations.

Additionally, the videos at [www.faa.gov/go/FromTheFlightDeck](http://www.faa.gov/go/FromTheFlightDeck) combine actual footage with graphics to illustrate hot spots and other safety-sensitive items.

Remember, the most dangerous part of a flight is quite likely in the airport environment. Respect that risk. Use all of the tools at your disposal BEFORE making decisions. It's always better to know before you go.