

CALLBACK

From NASA's Aviation Safety Reporting System



Issue 558

July 2026

ROUTINE SUMMER OPERATIONS

Summer weather phenomena routinely create challenges for aircrews and threats to flight safety. High temperatures and humidity, convective activity, wind, windshear, turbulence, thunderstorms, microbursts, heavy precipitation, lightning, hail, low visibility, and fast changing conditions are typical.

All are individual threats to aviation, all can complicate an already degraded situation, and combined effects are usually more than the sum of their parts. Everyday summer weather becomes anything but routine and plays intimately with human factors in complex, quickly developing situations.

This month, *CALLBACK* shares examples of routine summer weather encounters appearing as primary contributors or complicating factors in reported incidents. Examine these different weather roles and enjoy the complex interplay between weather, human factors, and aircraft performance.

Part 91 – Hot and Humid Performance

This commercially-rated pilot found new respect for density altitude considerations in a low wing, single engine aircraft.

■ This event was...from Rwy 36R at NEW (Lakefront Airport) in New Orleans. Rwy 36R is 3697 ft long. Winds were checked immediately before engine start, and ATIS Oscar reported...about 110@4, which would have been a negligible headwind. After runup, when cleared for takeoff, Tower advised winds were around 160@ 4 or 6. I'm not sure of the exact winds. This would have been a small tailwind. I accepted the takeoff clearance for runway 36R.... mistake number one. I could have either declined the clearance or requested takeoff from the longer 6879 ft runway 36L or 18R. The next issue was density altitude. Takeoff was scheduled for 8 am. Weather had first been checked about an hour before, and temperature was about 84F. While NEW ASOS does state density altitude, ATIS does not.... mistake number two is that I did not call ASOS to verify density altitude, which I believe was about 1800 ft. During the takeoff roll, the airplane seemed to accelerate much more slowly than normal. At the runway midpoint intersection, airspeed showed under 45 kts. Rotation speed is 66 kts. I decided to abort the takeoff. Mistake number three is that I waited too long to make that decision and came to a stop in the grass about 30 ft beyond the end of the runway. I taxied

back to the runup area, and the Tower told me to wait for the fire truck, which I did. We inspected the airplane, and I saw no damage. Engine run-up was normal. I advised Tower that I was ready to take off, and Tower offered the longer runway, which sounded like a wonderful idea. Took off from Rwy 18R and had an uneventful flight to ZZZ.... I believe the airplane's lackluster performance was an effect of the higher-than-normal density altitude. Using the longer 6879 ft runway would have been such an easy solution.

Part 121 – The Wave Near Coffin Corner

In VMC at FL330, this B757 First Officer described a mountain wave encounter that threatened the high-speed regime and operational limit of the aircraft.

■ While at cruise with A/P (Autopilot) and A/T (Autothrottles) engaged, we encountered mountain wave that pushed the aircraft into the high-speed regime. First initial notice of the event was a speed increase up to just slightly below MMO [Maximum Operating Mach Number]. Pilot flying recognized this occurrence, noted that the aircraft had deviated altitude by 200'. Disengaged the autopilot and retarded the throttles while deploying the speed brake. While the aircraft corrected back to the assigned altitude, the speed then shot dramatically into the red MMO range delivering an OVERSPEED EICAS warning. Exceedance was less than 15 kts above VNE [Velocity, Never Exceed] and less than .86 Mach. While in mountain wave at FL330, we experienced a v/s [vertical speed] exceedance of +/-700 fpm, +200' of assigned altitude, +/- 30kts indicated airspeed. This occurrence happened within 15 seconds.

Part 135 – Precipitating Shear Wisdom

After declining an ATC suggestion, a Beechjet 400 pilot wound up in an unplanned, unwanted CFTT situation as reported by this Approach Controller of 16 years.

■ Aircraft X was issued extreme precipitation near ZZZ moving toward the field and offered alternate airports. Aircraft X wanted to try to land ZZZ anyway and requested to track the RNAV approach, but be cleared for the visual. I coordinated the opposite direction runway with the Tower. I offered the lowest MVA altitude to Aircraft X, and he accepted it; then I assigned it. I issued deviations left and

right of course, when able direct ZZZZZ - the FAF. Aircraft X was assigned 1500, but indicated 1600 near ZZZZZ. As he turned inbound toward ZZZ, he indicated 1400. There was other coordination occurring and lots of background on guard and lightning static. I then noticed Aircraft X indicating 1100 as I was transferring communication of another aircraft. Then Aircraft X indicating approximately 500 as I was initiating a low altitude alert due to the 1100 indication. Aircraft X previously proactively asked me for alternate missed [approach] due to the flight conditions, so he was already in the turn. He stabilized and decided on an alternate airport. The loss of altitude resulted in me violating the LOA (Letter of Agreement) by not transferring communication with the aircraft in time, in addition to violating the Class D airspace. I asked the pilot the reason for the loss of nearly 500' and he said windshear. He admitted to descending to 1200 on his own and then encountered windshear. He descended to 400 or 500 feet and climbed when I issued the low altitude alert.

Part 121 – A Landing with Gust-Oh!

This Embraer ERJ175 crew described a windshear and likely microburst encounter during the landing accompanied by an unexpected discovery during post flight duties at the gate.

From the Captain's report:

■ We were cleared by...Approach...via radar vectors to the ILS Runway XXR. We could see the approach lights approximately 13 nautical miles out. As we approached closer, clouds began to move in and obscured the approach lights. Winds were reported at approximately 240 degrees, 15 knots with gusts up to 27 knots. Additionally, rain was reported on the approach and at the airfield with the heaviest portion on the approach portion. FO was initially flying the approach and was following the approach lights to the runway on automation. As the conditions on the approach became gusty, I told FO I would take over the controls, at which point we transferred controls. I was able to see the approach lights and manually flew the approach with vertical and horizontal corrections. As I began my round-out and flare, I experienced a sudden gust of wind from the right side combined with a downdraft, resulting in a very firm landing. The aircraft landed left of runway centerline (Runway XXR does not have centerline lights) and I began firmly correcting back to the centerline as the runway was wet. Since braking action was not reported we decided prior to commencing the approach to make a full flap landing vacating at taxiway 1. I met FO during the walk around and noticed the left inboard tire was flat, and the left outboard tire appeared to be low. Cause: Gusty winds and possible micro-burst. Suggestions: Holding and or diversion to an alternate airport.

ASRS Alerts Issued in May 2026	
Subject of Alert	No. of Alerts
Aircraft or Aircraft Equipment	4
Airport Facility or Procedure	13
ATC Equipment or Procedure	18
Other	3
TOTAL	38

From the First Officer's Report:

■ ...Captain talked to the Flight Attendant (FA) and made sure everyone was not injured.... Additionally, there was some grass in the left wheel-well stowaway....

Part 121 – Weathering Control Issues

A convergence of summer weather, human factors, and control struggles confronted this commercial fixed wing crew during a challenging approach and landing.

From the Captain's report:

■ Leg 3 of 3 on last day of 3. Landing in DEN on 35L, storms with heavy rain in the airport vicinity, preceding aircraft reported gain of 25 kts on 3 mi final and low visibility on landing. We configured early at about 4 to 5 mi on final to ensure a stable approach and had visually acquired the RWY around 5 to 6 mi out. We encountered a 20 kt speed gain at 3 mi but returned to a stable approach fairly quickly. We could see the rain on the RWY and asked for the lights to be turned up full bright. The first several thousand feet of the RWY was visible for the final approach up until the flare, and the approach itself was uneventful. Once in the round out and into the flare at just shy of touching down, visibility went to about 3 white lights off our nose. We got the aircraft on the RWY and were slowing up still barely able to see off the nose with the wipers on high. Tower began to tell us to clear the RWY in an urgent voice and rather than telling them to be quiet while we were trying to remain in control of the aircraft, I let it get to me, and when I saw an exit, I initiated a turn. At this point, I still had no idea where we were on the RWY. As we got closer, I saw that we were at the closed taxiway, M6, and began a turn back to the RWY at the same time TWR starts yelling at us to not turn there. Visibility is still next to nothing due to the volume of rain. This also caused the aircraft to hydroplane as we turned to get back on the RWY. We hydroplaned to the right then back to the left before finally getting traction enough to actually steer, the whole time Tower..." yelling" at us to clear the RWY. We reached M7, cleared, and taxied to our gate.

From the First Officer's Report:

■ The Tower failed to update us on the current weather condition during the flare phase and the runway condition.... Instead, all the Tower did was adding pressure and stress to an already very challenging situation.

The reports featured in CALLBACK are offered in the spirit of stimulating thought and discussion. While NASA ASRS does not verify or validate reports, we encourage you, our readers, to explore them and draw your own conclusions.

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A Monthly Safety
Newsletter from

The NASA
Aviation Safety
Reporting System

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May 2026 Report Intake	
Air Carrier/Air Taxi Pilots	4,964
Flight Attendants	1,677
General Aviation Pilots	1,532
Military/Other	1,144
Controllers	268
Mechanics	266
Dispatchers	254
TOTAL	10,105