

CALLBACK

From NASA's Aviation Safety Reporting System



Number 353

May 2009

Heeding Clues and Cues



*When to flying pursuits you're inclined,
Keep procedures and training in mind,
And when soaring the blue,
Heed those instincts and clues
That tell you you're getting behind.*

– Editor

In this month's *CALLBACK*, we'll sample a selection of ASRS incident reports that describe how some pilots and air crews missed – or heeded – important clues to flight safety. Our selection includes general aviation, air carrier, and maintenance incidents.

Clue: A Left-Rolling Tendency

A Cessna 210 pilot suffered temporary engine failure and altitude/track deviations while recovering. Here is the pilot's story of how important flight handling clues were missed.

■ *...My engine stopped inflight. I believe the cause was that I forgot to switch the fuel tank selector at the appropriate time and the right tank ran dry, starving the engine of fuel. During the incident, I glided below my assigned altitude and had to leave my assigned heading to look for a suitable place to land, if necessary. I also made a 'Mayday' call to Approach and informed them the engine had failed. I switched to the (full) left tank and was able to restart the engine and continue to the destination.*

I started the flight with the right tank selected. I intended to switch tanks approximately 1/2 way to my destination. Apparently, I forgot to switch tanks, because the selector was still on the right tank when the engine stopped...My plan to switch tanks at the 1/2 way point was a poor plan. The logic was if I could make it 1/2 way on 1 tank, I should have enough fuel in the other tank to complete the flight. The problem was that it left the plane imbalanced with hundreds more pounds of fuel in one wing than the other. In the future, I will switch tanks every 30 minutes.

I missed clues that might have alerted me to the problem. First, the autopilot failed to hold a heading, and the plane began an uncommanded turn to the left. I turned off the autopilot and noted a left-rolling tendency. At first I thought a passenger's bag was putting pressure on the co-pilot's yoke, but moving the bag did not help. I looked around to see if something had happened to the airframe but saw nothing unusual. I assumed that the autopilot had stuck with a bungee pulling to the left. Only after I landed did I realize that the left-rolling tendency was caused by the imbalance of fuel....

Cue: "Something Looked Wrong"

Night visual approaches to unfamiliar airports with multiple runways can be challenging, even for highly experienced pilots. An air carrier flight crew averted a wrong runway landing when they heeded cockpit and ATC cues.

■ *This was a case of a visual approach where we were issued a visual clearance to enter a left downwind to Runway 21 and entered a left downwind for Runway 25. We realized at a point in time, this was the incorrect runway (Runway 25), abandoned the approach, maneuvered for a right 270 degree turn and flew the correct approach to the correct Runway 21...Complications were an unfamiliar airport, at night VMC with multiple aircraft in the airport environment. There was a helicopter on final for Runway 21, another carrier B737 on a right downwind for Runway 21 and a C5 inbound.*

Cues were the controller telling us we were too wide, the Pilot Flying asking me if it looked right because something looked wrong, and the directional gyro not aligning up with the runway we were flying to. Also, the ILS just did not make sense as it was our backup. Once I, as the Pilot Monitoring, stated it was not correct, we broke off from the approach....

Big Clue: Maintenance Placard

An air carrier Maintenance Technician raised safety concerns about flight and cabin crews who ignore "inoperative" placards – big clues – on aircraft equipment items.

■ *Myself and AMT [Aviation Maintenance Technician] #2 placarded the First Class oven inoperative for a broken operating handle. Per the galley item and safety of the aircraft, we opened and collared the circuit breaker and locked the oven in the closed position and applied 'Inoperative' stickers. The following day...we were accomplishing the interior inspection per the ETOPS [Extended-range Twin-engine Operational Performance Standards] program and found ovens were in operating condition, but with the "Inop" placards torn off, oven hot, circuit breaker closed, and broken handle thrown on top of galley cabinet.*



Retrain Flight Attendants to not ignore placards for safety reasons. Flight crew ignored warnings, bypassed deferral and [reset] circuit breaker to operate oven.

This reporter further stated that when unauthorized personnel reset circuit breakers, overheating and possible electrical fires can result.

Clue: "I Tried to Turn on the Runway Lights"

A GA pilot missed an important first clue of radio problems while on the ground, and encountered escalating problems after becoming airborne.

■ *...After preflighting the plane, I prepared to take off for the 20-minute flight back to ZZZ1. No AWOS or ASOS was available,*

ASRS Alerts Issued in March 2009	
Subject of Alert	No. of Alerts
Aircraft or aircraft equipment	4
Airport facility or procedure	3
ATC equipment or procedure	2
Company policies	1
Maintenance procedure	1
TOTAL	11

A Monthly Safety Bulletin from

**The Office of the NASA
Aviation Safety
Reporting System,
P.O. Box 189,
Moffett Field, CA
94035-0189**

<http://asrs.arc.nasa.gov/>

March 2009 Report Intake	
Air Carrier/Air Taxi Pilots	2681
General Aviation Pilots	1021
Controllers	100
Cabin/Mechanics/Military/Other	450
TOTAL	4252

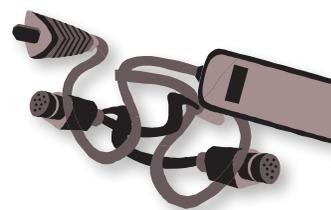
however, I had received a weather briefing a few hours before and it was obviously a clear, no-wind evening...I expected to contact ZZZ2 [Class D] after departure for a clearance and a squawk code for flight following back to ZZZ1. I attempted to transmit my movements on the CTAF while taxiing and taking off at ZZZ. There was no other traffic in sight, so I was not surprised to receive no response. However, when I tried to turn on the runway lights via PCL [Pilot Controlled Lighting], nothing happened. This should have been the first clue that the problem was with my radio. Instead, I assumed the lighting system was not working, so I proceeded to take off using only my landing light to stay on centerline.

Immediately after takeoff, I circled to gain altitude, to avoid nearby mountains (which I could see) and to stay out of Class D until cleared. I called ZZZ2 Tower, but got no response, despite repeated attempts to call. At that time, I squawked 7600. At 4,500 feet I leveled off and circled for a while. I did not want to return to ZZZ as there were no runway lights...I decided I should just continue to ZZZ1 as it was close by, familiar, no mountains around, and the lights would be on. I proceeded toward ABC, my sole turning point toward ZZZ1. In the meantime, I got out my handheld communication radio and tried to connect the various cords to the radio, a mike switch and my head phones. This was a disaster. In the darkness of the cabin I could not keep the cords straightened out and still fly the plane.

I...gave up with the handheld. I opted to reconnect to the plane's radio. Unfortunately, while doing this, I overshot ABC, significantly. I realized it when I saw in front of me ZZZ4. Knowing this is a very busy commercial airport, I knew I was past my mark and had to get out of there fast! I turned around and headed back to ABC... This time I switched to the last Approach channel I had used. To my pleasant surprise, the radio worked...I told the Controller who and where I was, the situation, and that I was squawking 7600. He was immediately helpful and asked if I needed to declare an emergency. I said...no, but I needed to be vectored away from ZZZ4 and back to ZZZ1. I eventually got back and landed safely with no further radio faults. There were 3 lessons I learned that night.

- First, find some way to assure I have working radios before taking off, if at all possible. This was the first time I had landed at an airport without even an AWOS/ASOS, so I did not think about having a radio problem while still on the ground.
- Second, I lost situational awareness during my fuss with the handheld. This was the most dangerous condition of the entire episode...This turned out to be a 'no cost' but valuable lesson.

- Third, I was not prepared to use my handheld in the dark. Consequently, I have now 'pre-wired' and taped up the cords so that if needed in the future, there will be no mess to contend with...



Cue: The Nose Strut Was Extended

An Airbus 320 First Officer heeded tactile cues that all was not right with a takeoff. After a return to the gate, the flight crew observed visual cues that supported their decision to abort the takeoff.

■ All preflight, engine start, taxi-out checks completed normally. Final weights had the trim set at 38.3 (unusual aft setting). Once takeoff power was added, I immediately noticed a strong nose-up tendency, one which I have not felt...on the Airbus. I made a comment to the Captain that something felt odd. With the control stick full down in order to maintain directional control via the nosewheel, I elected to accelerate a bit to see if relative flow over the horizontal stabilizer would help alleviate the tail-heavy scenario. After about 70 knots, I was hesitant to neutralize the stick as it gave the feel the nosewheel was going to lift off the ground. An abort was executed around 70 knots. We cleared the runway and returned to the gate...

I discussed with the Captain how the aircraft felt and my concerns of possible improper loading of the aircraft. I knew the Center of Gravity was aft as the trim setting was 38.3, although within limits on paper... After parked at the gate and exiting the cockpit, we began noticing visual cues. With a [passenger] load of 3-83, the majority of passengers were in the last 15 rows. Once on the ramp, we quickly observed the nosewheel strut in an unusual extended position. We then met with ramp personnel and reviewed the load manifest. We were told by Lead Agent that the aft limit for this flight today was 1672 units and the aircraft was actually loaded to 1680 units. When queried about the out-of-range number, we were told 'there is slop built into the limits.' We moved 14 bags to the forward pit and some passengers to First Class. After waiting for our brakes to cool and a visual inspection by a Mechanic, we departed about 60 minutes later....

Viewing the aircraft with the nose strut in an extended position was a major sign that even though on paper we were within limits, in reality the aft Center of Gravity [limit] may have been compromised....