

CALLBACK

From NASA's Aviation Safety Reporting System



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WHAT WAS I THINKING?

Most aviators will ask themselves that question at some time during their career. Much has been researched, studied, and written about thinking and decision making that occur in the cockpit. Pilots routinely combat many situations and flight hazards while integrating sound judgment, threat analysis, decision making, situational awareness, and a mature CRM process in their bid to operate each flight safely.

The cockpit is a dynamic classroom that offers valuable insight into what and how we think during flight. External stimuli are not well controlled, if at all. The environment is complex. There are no freezes, time outs, or mulligans, and stakes are always high. These facts may both hone and hinder the thinking process. They also accent the serious nature of the incidents archived in the ASRS online database.

Despite superb research, time-tested tools, and effective CRM processes available and used by pilots, ASRS has received reports suggesting that, on occasion, the quality of thinking in the cockpit may deteriorate. This month, *CALLBACK* shares incidents intended to stimulate discussion regarding cockpit thinking, as well as inputs, factors, and biases that may influence cockpit decisions.

A Man and His Mooney

A Mooney 201 pilot altered a procedure and expected no adverse consequences. The technique was not thought through carefully or mentioned to the other pilot, and the unmitigated risk produced a less than desirable outcome.

■ *I was flying chase support for an Unmanned Aerial Vehicle (UAV)... [We] were chasing a UAV capable of very slow flight. In order to stay in position, our airspeed, with full flaps and low power, was staying at the stall speed of the aircraft. As a result, the stall warning horn was frequently and sometimes continuously sounding. It made communication with the ground-based pilots of the UAV and ATC difficult.*

I made the decision, without seeking input from the copilot, to pull the circuit breaker to silence the stall warning horn. It seems that, at the same time, I inadvertently also pulled the gear relay circuit [breaker]. This was forbidden by written company policy and sound judgment. The results have seared the reasons for this into my mind.

When our mission was complete, we returned to our home base. Post chase and during our return, I failed to remember

to reset the circuit breakers. Because of this, the gear was... unable to be extended. I completed the pre-landing checks, including verbal callouts for the gear. I selected gear down and checked for the green cross-hatching on the floor of the Mooney. I saw, or evidently thought I saw, a safe indicator. In hindsight, I believe I saw what I expected to see. I continued in the pattern and final approach, checking and verbalizing gear down twice more, once on base and once on short final. For these last two checks, I improperly relied on the gear position switch for confirmation. As a result, I made a gear-up landing...without injury...

The issue of this report is my poor judgment and, to an equal degree, an inadequate pre-landing checklist. I foolishly broke policy and procedure, as well as good flight judgment.

Is the Pilot in Command?

An examiner expected this Pilot in Command (PIC) to accomplish a procedure for which the PIC was not trained. The PIC attempted the procedure, but aircraft control suffered and the maneuver became unmanageable.

■ *I was flying in the right seat of a King Air 250 for a pilot with whom I fly regularly. He was being evaluated by an FAA inspector in a passenger seat for a part 135.297 Instrument Proficiency Check (IPC). After takeoff, upon reaching 500 feet, heading 140 degrees...in IMC, and after [we] engaged the autopilot, the inspector stated, "The right engine has failed." He expected either the pilot or me to simulate an engine failure, despite the fact that neither the pilot nor I had actually been trained to reconfigure the right power and propeller levers to zero thrust. We knew ahead of time that there would be a simulated engine failure, but had never experienced that scenario in the actual aircraft. The pilot pulled the right power lever back thinking that was adequate to simulate engine failure while we simulated the memory items to secure the "failed" engine.*

At this point, we realized the right engine was creating enough drag that full left rudder could not overcome the adverse yaw, and the autopilot kicked off. I was communicating with departure and was queried twice about our heading as we continued in a right turn. As the airspeed decayed and the aircraft could not be brought around to our assigned heading, we were told that we could have our engine back, and upon setting normal power, we were able

to fly normally and were vectored for an ILS approach. [We] will be meeting with the FAA tomorrow to discuss this incident. I have been informed that the FAA is critical of my cockpit resource management during the flight.

What's It All About?

After departure, this CRJ200 crew heard an unfamiliar noise and perceived a minor irregularity. The misunderstood problem and multiple classic threats spawned a domino chain of self-induced complications.

■ [After departure] as we accelerated through 200 knots, we both noticed a loud noise that we could attribute to... airflow over an open panel on the aircraft. [We] agreed it was likely the Headset and Nose Gear Door Switch Panel... The Captain...called for...the After Takeoff Checklist... After completing the procedure, I read through the checklist silently and then called, "After Takeoff Checklist Complete." Around...8,000 feet MSL,... the autopilot disconnected on its own. The Captain reengaged the autopilot, [but] within a minute, it disconnected again... The Captain chose to hand-fly the aircraft.

Passing through 10,000 feet I [toggled] the "No Smoking" sign switch to signal to our Flight Attendants... The switch did not chime. I tried the "Fasten Seatbelts" switch, which also did not chime... It was at this point we began to notice... extremely diminished climb performance, and [we] were not able to accelerate past 260 to 270 knots... We knew something was wrong, but we could not figure out what. The Captain asked me to begin reviewing all of the system status pages to see if there were any other indications to give us a clue as to why we did not have any climb performance... We began calculating our fuel burn, and discovered we were burning...about 4,800 pounds per hour. With about 5,000 pounds of fuel and about 40 minutes of flight time remaining, we decided it was best to divert...

[When the] Captain called for gear down,... I reached for the gear handle and noticed that it was down... We immediately realized our mistake... I had never selected the gear up on departure. I am not sure what to attribute this mistake to other than complacency and distractions. On departure, I do recall reaching for the gear handle. I believe I became distracted by reaching for the SPEED mode button and NAV button. We became distracted by the noise generated by the gear... We further became distracted by an autopilot that wouldn't stay engaged and having to hand-fly the aircraft... We became fixated on only one...problem while dealing with other small, seemingly unassociated problems... The maximum gear extended speed was exceeded by approximately 10 to 20 knots. There was also a flap overspeed on final, and the

thrust reversers were not armed for landing (I don't recall completing the landing checklist).

...It is one thing to miss a flow; it is another to read and verify a checklist and still miss an item—that is what the checklist is for. Additionally, once an issue is discovered in flight, you must also sit back and review even the most basic reasons why a problem is occurring. We failed to notice that our gear was down for the entire hour we were in flight. We were very focused on other possible issues, and failed to sit back and evaluate the big picture.

Snowing the Snowbird

An A321 Captain was given conflicting reports regarding how effective the deicing procedure had been. The Captain pragmatically declared that it was a success, but he subsequently regretted his declaration and decision.

From the Flight Attendant's Report:

■ [The] aircraft had remained overnight during an ice-and-freezing-rain storm... Significant ice remained on all wing surfaces and several cabin windows. I called the Captain to advise him, and he stated that he would notify the deice crew to inspect the aircraft. Additional deice fluid was applied only to the right wing. I called the Captain a second time and advised him that significant ice was still present and that the crew had not successfully removed the contamination. I was told that the deice crews gave the aircraft a "go" and that we were departing. After takeoff, I photographed the left wing and called two Flight Attendants to witness the buildup. One of the Flight Attendants immediately contacted the Captain to express his concerns. Only then did the Captain leave the cockpit to investigate. His reply: "I am so sorry, the deice crews lied to me!"

From the First Officer's Report:

■ The aircraft was deiced in accordance with our approved procedures, and after deicing, a cabin crewmember brought to the Captain's attention that there appeared to be some residue, snow, or ice on the right wing. We requested that the aircraft be deiced again, and it was done again in accordance with our procedures. After departure, the Captain responded to a call from the cabin indicating that there was ice on the left wing. He left the cockpit to look for himself, and in fact reported to me that there was a small amount of ice on the outboard area of the left wing. The aircraft performed normally throughout the flight... A suggestion would be to change deicing procedures to include a cabin check after deicing is complete to verify that the aircraft is clean.

ASRS Alerts Issued in March 2018	
Subject of Alert	No. of Alerts
Aircraft or Aircraft Equipment	7
Airport Facility or Procedure	4
ATC Equipment or Procedure	7
Company Policy	2
Hazard to Flight	1
TOTAL	21

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March 2018 Report Intake	
Air Carrier/Air Taxi Pilots	4,854
General Aviation Pilots	1,174
Controllers	516
Flight Attendants	445
Military/Other	338
Mechanics	263
Dispatchers	108
TOTAL	7,698