

CALLBACK

From NASA's Aviation Safety Reporting System



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This has been a banner year for NASA's Aviation Safety Reporting System (ASRS). ASRS's business of collecting, analyzing, and disseminating all kinds of aviation safety data has approached pre-pandemic levels and continues to grow. Our intake this year will exceed 100,000 reports and will boast a 52 percent increase over 2020 levels. One benchmark of ASRS success is the number of alert notices that ASRS generates to provide critical safety information to responsible parties. At present pace, this number will approach 243 in 2023 and will best 2020's yield by 52 percent as well.

We hope you find these trends encouraging, and that you may enjoy finding out more about ASRS. A complete description of the ASRS program, including a wealth of publicly available information, can be found on the official ASRS website, <https://asrs.arc.nasa.gov>.

This month, ASRS extends Season's Greetings and presents poignant narratives that both contemplate a multitude of threats and resonate with *CALLBACK*'s 2023 subject matter.

Part 121 – Triangular Culpability

A B737 First Officer watched a preceding aircraft experience a serious threat during its departure. They were then cleared for takeoff, but the threat had not been resolved.

■ *We taxied out to the runway.... The airport was very busy. We were number six in the pad waiting for departure. There were two law enforcement helicopters following a vehicle just west of the airport. A Company B737 in front of us was given a confusing clearance to avoid the helicopters on departure. We watched on TCAS as they just missed the helicopters. Before we departed, the two helicopters crossed the departure end of [the runway] and moved to the north of the airport. During this time, ATC lost communications with one of the helicopters. The...Tower Controller seemed very busy. We were cleared for departure with a right turn to heading 110. While in the climbing right turn, we realized we were very close to the helicopters. We did not know what direction they were going or if they were changing altitude. We followed our clearance and waited for an RA from our TCAS. We never saw the helicopter because I was inside concentrating on flying the aircraft trying to climb over the helicopters. The Captain could not see them because we*

were in a nose-up attitude.... One helicopter saw us and radioed they were descending to avoid us. According to TCAS, we went right over...them by 100 feet. Helicopters should not operate right off the end of a busy runway! ATC should not vector aircraft on a collision course.

Recreational UAS – Building Experience

A recreational UAS operator lost the connection to a drone during flight and then lost the drone after it was recovered.

■ *I flew behind my house and above the woods with line of sight. [During the] flight, I was trying different settings on the new drone. I lost control and was disoriented with the direction of flight. I lost the connection to the drone multiple times, and the return to home function was not set properly. It tried to return to a location that was south of me. A helicopter was in the area. They indicated that I flew within 20 feet of their aircraft, but I did not see them. I tried to navigate back to my location, and after multiple attempts, I was successful. The helicopter followed the drone back to my location, and public officials confiscated the drone. I do not have access to the video, only the flight logs. The app shows when aircraft are present or close. This never occurred until returning home and the helicopter was circling the house. I'm not sure if the helicopter was broadcasting or if any other traffic was present.*

Part 121 – Pitch and Power Prevail

This B737 MAX First Officer encountered predictable icing conditions that resulted in major unexpected consequences.

■ *Takeoff and climb to cruise were uneventful. At cruise, FL260, we received an ATC reroute to avoid weather.... We were [now] cruising at 280 knots in IMC conditions at +2 degrees TAT with engine anti-ice on. The Captain was flying. We then noticed the airspeed start to go way down then go way back up. It indicated maybe 40 knots to 300 knots.... "AIRSPEED LOW" kept announcing as well. The Captain turned off the autopilot and autothrottle, set 4 degrees nose high, and told me to set power. I pulled the power to 70% N1, and we compared PFDs. My airspeed indications would indicate properly for a few seconds then*

jump up or down. The Captain's were constantly moving up and down, so we transferred control to the First Officer. I called for the QRC, and the Captain read and accomplished the steps. We had missed flight directors to 'OFF.' We had climbed a couple hundred feet during this.... I asked the Captain to notify ATC, and I turned the airplane eastbound in an attempt to exit IMC. It worked, and a couple minutes later, we exited IMC and started a descent to warmer air. While the Captain ran the QRH for unreliable airspeed and informed ATC and Dispatch, I continued to fly. As the air warmed and we exited IMC, airspeed indications returned to normal. We reviewed pitch and power settings in the QRH to make sure the airspeeds were accurate. The rest of the descent and arrival...was uneventful. My guess is that we accumulated enough ice on the probes to make the airspeed indications...unreliable. I didn't see abnormal icing on the windshield wipers, nor was icing reported. Being in IMC at +2 degrees was about perfect conditions for it. After landing, the Captain and I talked about how we were thankful for 737 MAX simulator training that we had both recently completed. The training prepared us...well.

Part 91 – An Unseen Enemy

This DA20 Eclipse was deiced during pre-flight. The aircraft appeared clean on the outside, but not all the ice was seen.

■ During the pre-flight, there was icing observed on the control surfaces that was carefully and thoroughly removed. The icing was a result of rain from the previous day that had frozen overnight. I would like to emphasize that all of the ice was removed during the pre-flight phase. During takeoff, after rotating and becoming airborne, and while increasing airspeed, there was a violent fluttering of the flight controls observed that negatively affected the controllability of the aircraft. The effects were severe enough that I do not believe...we would have been able to successfully complete an entire lap in the traffic pattern to land back at the airport. Fortunately, the runway was long enough that we were able to make a successful landing on the remaining runway and terminate the flight without further incident. It was concluded after the flight that the most likely cause was that some of the rain from the day before had made its way into some of the flight control surfaces and caused the fluttering once we reached a high enough airspeed for the imbalance to cause the fluttering. After temperatures warmed up above freezing, the airplane was flown again without issue. My biggest issue with this occurrence is that there is really no way to check for icing inside of the control surfaces on any airplane that I have ever flown. As far as I'm aware, the only way to detect this issue is to fly the airplane and observe the

fluttering. Proper corrective action if this is observed in the future would be to abort the takeoff, if able, and if unable to abort, reduce to an airspeed that prevents the fluttering and return to land at or below that particular airspeed.

Part 121 – Formidable Foes

This B737 Captain was confronted with multiple, snowballing, nighttime threats. The situation was precarious, but the crew's discipline, judgment, training, procedures, resilience, and adaptability ultimately prevailed.

■ The flight departed...30 minutes late due to passenger and loading complications.... The FO and I had already discussed the possibility of an overweight landing...and were actively monitoring fuel burn and weight of the aircraft to ensure a landing under the structural limit.... Reaching the cruising altitude of FL310, I applied speedbrakes to increase the fuel burn.... Our cruise segment of the flight was short. As we approached the top of descent...the FO...requested the cruise clearance...since we still had not received [a descent.] ... Receiving the cruise clearance...we immediately initiated a descent. We were well above the descent path, and I discussed that I would...configure early to correct to the descent path in addition to [using] full speedbrakes, which had been deployed at cruise altitude. Approaching the final approach fix...on the RNAV...approach, fully configured with the Landing Checklist completed, we were visual with the runway, but were still too high....I disconnected the autopilot and autothrottles...and told the FO I would initiate a 360-degree turn and re-intercept the final approach course. During the descending turn, we were in and out of clouds in the pitch-black night, and I became disoriented. The aircraft exceeded 45 degrees of bank momentarily, and the airspeed decayed below Vref speed. I initiated an upset recovery to return the aircraft to the desired state. I followed the upset recovery with a go-around...to clean up the aircraft. Once the go-around was completed, I reengaged the autopilot and autothrottles and called for the After Takeoff Checklist. We set up the FMC...to commence the RNAV approach again. After configuring the aircraft and completing the Landing Checklist, we realized there was no VNAV glidepath from the FAF to the Runway. The PAPIs were also out of service for the runway, so we had no glidepath guidance. We were visual with the runway, and the FO and I agreed...the best course of action was to continue the approach. The FO backed me up with 300:1 guidance to ensure we remained on a safe glidepath. The landing and taxi-in were uneventful.

[Learn More About ASRS UAS Safety Reporting](#)

ASRS Alerts Issued in October 2023	
Subject of Alert	No. of Alerts
Aircraft or Aircraft Equipment	3
Airport Facility or Procedure	9
ATC Equipment or Procedure	9
Maintenance Procedure	1
Hazard to Flight	1
Other	2
TOTAL	25

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 A Monthly Safety
 Newsletter from
The NASA
 Aviation Safety
 Reporting System
 P.O. Box 189
 Moffett Field, CA
 94035-0189
<https://asrs.arc.nasa.gov>

October 2023 Report Intake	
Air Carrier/Air Taxi Pilots	5,825
General Aviation Pilots	1,605
Flight Attendants	1,265
Military/Other	522
Controllers	370
Mechanics	294
Dispatchers	209
TOTAL	10,090