

CALLBACK

From NASA's Aviation Safety Reporting System



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Controller Assistance and Kudos for...

Air Traffic Controllers are central pillars to flight safety as well as to efficient aircraft movement. To these ends, Controllers and pilots work hand-in-hand, as they must. The list of services that Controllers provide and tasks they perform is impressive and vast, and just as varied. Excellent communication skills, concentration, and decision making, stability, quick thinking, focus, and analytical processing might describe some typical character traits. Adaptability, creativity, and innovation are others that can be important in situations where book answers may be incomplete.

From a pilot's point of view, a Controller controls, advises, and assists. He or she is a great asset and another independent mind and set of senses to help guarantee smooth flow and mitigate the threat of collisions with persons, other creatures, vessels, vehicles, structures, earth, or bad weather.

This month, *CALLBACK* shares incidents that reveal the professionalism, competence, creativity, vision for improvement, and the dedication to safety that Controllers extol. Enjoy the stories; contemplate the lessons; and if you are a pilot, think of a time when you required or received the expert assistance that Controllers routinely provide.

Part 91 – Expertise and Teamwork

A Controller encountered a situation where a pilot was flying a small, twin engine aircraft and experiencing icing. The team that was assembled and the expert assistance they provided likely prevented an accident and saved this pilot's life.

■ *[I was] training on Sector X when the Controller-In-Charge (CIC) told me there was an emergency at [Sector Y], and my pilot skills might be needed. I immediately terminated training and proceeded to Sector Y, where I plugged in with the Radar Controller and offered to assist. ... it was quickly apparent that we had a small aircraft that was icing up at Minimum IFR Altitude (MIA) and could not hold altitude. Over the next 45 minutes, the Radar Controller, CIC, Operations Manager (OM), Radar Associate, Center Weather Service Unit (CWSU) meteorologist, and myself worked the aircraft north and west toward lower MIAs and better weather. On several occasions the aircraft entered turns and descents without instruction to do so, and each time the Radar Controller provided simple, pertinent instructions that helped the pilot regain/maintain control*

of the aircraft. Another Controller team came back and took the airspace and other frequencies, so our team could concentrate solely on assisting the emergency aircraft. The aircraft was below MIA the entire time, and with no obstructions depicted, I obtained a sectional chart and spent most of the emergency tracking the aircraft on the chart and calling out obstructions to the Radar Controller, who relayed that information to the pilot. Eventually the aircraft dropped out of communication and radar coverage, so we placed another aircraft on the frequency to act as a relay. Wheeler-Sack Airbase also called several times with position updates, as their radar could see him, while ours could not. Eventually we were able to get confirmation that the aircraft had safely landed. We only then discovered that the aircraft was a small aircraft [type X], not a small aircraft [type Y] as the flight plan indicated. This incident happened because the aircraft flew into icing conditions. Our job was made significantly more difficult by the lack of depicted obstructions on our video maps. An Emergency Obstruction Video Map (EOVM) needs to be created for the facility.

Part 91 – Mitigating CFIT and CFTT

An Approach Controller and Challenger 350 pilot describe an altitude deviation. The pilot provides much detail and excellent analysis, but the Controller's simple action may have prevented an accident and saved lives.

From the Controller's report:

■ *I was vectoring Aircraft X for [the] ILS approach to Runway X. I issued [descend] to 3000 feet and fly heading 320. Near ZZZ1 airport the low altitude alert sounded and I told Aircraft X low altitude alert, climb and maintain 4000. The pilot thought I had issued a [descent] to 2000. I told him I did not issue 2000. There was heavy volume and complexity at the time due to weather and two different center sectors were off-loading ZZZ2 arrivals on to me. ... Also he never gave a read back saying 2000 feet at any time. So there was a miss communication somewhere.*

From the First Officer's report:

■ *I was second-in-command, and the non-flying pilot (pilot monitoring), of a Challenger 350...[under] IFR. ... while being vectored to final for the ILS, we were advised by ZZZ*

Approach... “Check altitude,” and immediately, “Climb to 4,000 feet.” We complied, and ZZZ [Approach] continued vectoring us to the final approach course without incident. Upon landing...[we were] given a number to call...which we did. The Tower Control Supervisor...advised there may have been a pilot deviation. ... In a two-hour TEMPO period just prior to our arrival, weather forecast was 2SM TSRA BR OVC010. Prior to initial descent we were given new routing by Center to avoid easterly moving weather build-ups, and then during descent, we requested and were granted further deviations until being handed over to... Approach. ... I attempted to contact the Approach Controller two times with aircraft ID, altitude, ATIS code, and type of approach requested. ... I did not receive a reply until a third attempt, in which I queried the Controller as to how he was receiving our transmissions. He replied that he heard us and cleared us down to an altitude of 10,000 feet. ... We were then given further clearance to 8,000 feet and direct ZZZZZ (intermediate point along the localizer course), followed...one minute later by a clearance to 3,000 feet. We complied. At approximately XA:43, [we] were given a heading of 320 degrees and an altitude for vectors to final. ... previously cleared to 3,000 [feet], we believed we heard a clearance to...2,000 feet and continued to descend while turning to 320. At approximately XA:45, ZZZ ATC advised our immediate climb. We received no TCAS alerts. At the completion of the flight, the Captain...and I conducted a debrief of the events and our...interactions. ... While the Captain is responsible for the overall safety and compliance of the aircraft and its crew, as pilot monitoring, I am responsible for, among other tasks, communicating with ATC, obtaining and reading back clearances accurately and timely, cross-monitoring systems, and setting altitudes in the flight guidance system. Upon review, it appears I either missed hearing or did not properly read back altitude assignments within the terminal area. This likely contributed to our misunderstanding of the last altitude given. In the future, I will endeavor to be more proactive in fully reading back clearances. The Controller did not prompt me after omissions of altitude in two read-backs to ensure we heard him correctly. A more thorough review and brief of the approach plate...would’ve revealed a Minimum Sector Altitude (MSA) of 2,500 [feet], so a descent to 2,000 feet while [being] vectored to the final course would not make sense. Even if we thought we heard a clearance to below the MSA, it would be essential to query the Controller under the circumstances. We failed to do so. In the future, we will ensure all pertinent aspects of the approach are thoroughly briefed. ... As professional pilots, we take seriously any event...and seek ways to prevent future occurrences within

our crew but [also] to share lessons learned to possibly prevent something similar in other crews. While these were “honest” mistakes, the associated threats could have been better mitigated in this situation.

Part 135 – Demystifying Departure Procedures

This Tower Controller experienced a situation where a commercial Caravan pilot appeared confused by an IFR Departure Procedure (DP). The Controller provided guidance, discussed the issue, hinted at a larger problem, and provided a recommendation.

■ Aircraft X was issued the ZZZI DP (Departure Procedure) by Clearance Delivery. I taxied the aircraft to Runway XX and then cleared them for takeoff. When airborne, I told them to contact Departure, but a moment later, I saw them in a left downwind turn and were well below the Minimum Vectoring Altitude (MVA). I reached out and they were still on frequency. I verified they were on the ZZZI DP, and the pilot said something to the effect of, “Oops.” I issued the heading for the DP and restated the interim altitude. After observing them on the correct course, I again told them to contact Departure. These aircraft typically file IFR, but don’t pick it up, and instead, depart VFR most of the time when the weather is better. Today we had lower clouds so they picked up the IFR [clearance]. They are so used to picking up VFR departure instructions that my guess is [that] expectation bias played a role in the pilot just starting a southbound turn. I wouldn’t have given this much thought, except just yesterday I had a similar interaction with another flight on an IFR DP. I think it may have actually been the same pilot, but I can’t be sure. They were cleared for take-off on [Runway] XXL on the ZZZI DP, which would have kept them on runway heading and, off the departure end of the runway, they asked me if I wanted them to start their turn early or fly to ZZZI. I verified they were on the ZZZI DP and told them to just fly it as they were previously cleared. The way they asked the question made me concerned that they thought they were VFR. I’m not sure if I have much of a recommendation for this scenario, except that maybe some outreach to [their] Company might be helpful. Having two incidents back-to-back where there seemed to be confusion about VFR versus IFR status makes me concerned that there could be more. I just wanted to get these two on record in case there are future problems. A report was entered for the one today.

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ASRS Alerts Issued in December 2024	
Subject of Alert	No. of Alerts
Aircraft or Aircraft Equipment	2
Airport Facility or Procedure	9
ATC Equipment or Procedure	8
Other	2
TOTAL	21

541
 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>

December 2024 Report Intake	
Air Carrier/Air Taxi Pilots	5,218
Flight Attendants	1,971
General Aviation Pilots	1,258
Military/Other	672
Controllers	263
Mechanics	211
Dispatchers	182
TOTAL	9,775