

CALLBACK

ASRS

From NASA's Aviation Safety Reporting System

Number 220

October 1997

Did You Say What I Heard?



Mandatory readback of certain parts of clearances provides a mechanism to reduce misunderstandings between ATC and flight crews. An ATC supervisor reports on a readback error that slipped by both him and an ATC trainee, with a potentially hazardous result.

■ *Aircraft A was given a descent from 8,000 feet to only 7,000 feet (6,000 feet would be the norm on this route). Pilot read back 6,000 feet, which was not caught by either of us. We tried to get him back to 7,000 feet, but he went to 6,500 before he climbed back. Aircraft B was one mile in trail at 6,000 feet, same speed.*

A contributing factor was my over-reliance on the trainee, who is fairly well along in training. I was assuming he would catch the problem, so I was not listening as intently. Also, the [typical] descent from 8,000 to 6,000 feet probably had the pilot expecting to hear 6,000. Only goes to prove the importance of readbacks being heard and understood.

Another controller reports that even when the readback of the clearance is correct, sometimes it's the wrong aircraft doing the reading back.

■ *ATC was holding about five aircraft. All were within five minutes of EFC (Expect Further Clearance) times. Air carrier flight ABC checked in on the frequency approaching the holding fix. ATC cleared [same company] flight BCD via the STAR. The readback sounded correct. Flight BCD then asked if that clearance was for him. ATC stated affirmative. Flight ABC was approaching EFC time, and mistakenly took BCD's clearance. Flight ABC was given a safe altitude to maintain and reissued holding instructions. Flight BCD did the "heads up," requested clarification, and kept ATC from having a very serious situation develop very quickly.*

We all get hurried on occasion. Kudos to the pilots out there for whom safety, not time, is the number one priority.

Careful readbacks—and additional clarification, if necessary—are especially important for both pilots and controllers when aircraft with similar-sounding callsigns are on the frequency. ▲

Airspace "Busts"

Turbulence and an unauthorized penetration of airspace may not seem obviously related. In two separate reports, however, turbulence, or rather, a pilot's attempt to avoid it, led to an airspace "bust." A corporate Captain explains:

■ *We were at 15,500 feet on an IFR flight plan and were given a descent to 9,000 feet. The ceiling was called broken...cloud bases were at 8,500 feet with turbulence below. Since we were in familiar airspace, I decided to cancel IFR and proceed VFR, but stay with Center for VFR advisories. There were few holes to descend through, but I found one. To get through, I had to maneuver somewhat and I got a little closer to the Class B airspace than I anticipated. I noticed I was inside the 20-mile outer ring, and I climbed back to 7,500 feet to clear it. Center handed us off to Approach, and we proceeded to our destination without further incident.*

My willingness to cancel my IFR flight plan was very poor decision-making on my part. Just to stay at a higher altitude and make the flight a little smoother, I ended up painting myself into a corner. I won't do it again.

Next, a general aviation (GA) pilot in a restored military trainer was also seeking a smoother ride when turbulence took away his chart and added a new wrinkle to the flight.

■ *I departed in my 1941 open-cockpit bi-plane. This airplane is fairly fast, and chart-folding is extremely difficult with the wind coming through the front cockpit and exiting through the rear cockpit [the PIC position]. The weather was MVFR and there was a SIGMET for severe turbulence. I climbed through a large hole in the clouds, and found moderate turbulence. As I tried to clip on my kneeboard with the chart attached, the aircraft lurched down hard, causing me to lose my grip on the kneeboard. The kneeboard and chart were sucked away. So then I had no chart for the area. I don't strap the kneeboard on before takeoff because it restricts side-to-side movement of the control stick.*

I flew West for quite some time and thought I was well clear of the Class B airspace. But the wind was extremely strong out of the West, so I was still in the Class B airspace when I was forced up to 6,500 feet to maintain VFR. I couldn't call Approach because I didn't recall the frequency. I thought the floor of the outer ring was 8,000 feet, but it was only 6,000 feet, so I was in the bottom 500 feet of the Class B airspace.

If pilots want to remain VFR while flying in MVFR conditions, they should be sure to maintain adequate back-up navigation to verify they are clear of controlled airspace. ▲

ASRS Recently Issued Alerts On...

An aileron cable failure on a B737-200
FMS map shifts resulting in an IFR missed approach
Timeliness of Land-and-Hold-Short instructions by ATC
A New Jersey SID generating 25 air carrier pilot complaints
Severe control problems due to a wing crack on an EMB-120

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

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

August 1997 Report Intake

Air Carrier Pilots	1944
General Aviation Pilots	650
Controllers	105
Cabin/Mechanics/Military/Other	56
TOTAL	2755

When Things Seen Are Not As They Seem

The old adage that “seeing is believing” is not always true, as a GA pilot learned in this report of a fuel mix-up.

■ *While performing the pre-flight checklist, the color of the fuel was light blue. Enroute, I experienced no problems with the engine’s performance. During a layover at ABC, the FBO manager from [my home airport] called ABC to secure the aircraft because the refueling tickets from the night before had gotten mixed up. The manager and maintenance personnel arrived and tested the fuel. It was still hard to distinguish whether the fuel was mixed; the evidence came about when the smell of kerosene was noticed as we continued to drain the [fuel tank].*

Lesson learned: When examining fuel, do not only look at the color because it can be deceiving. Smelling the odor and feeling the texture of the fuel will ensure that you have the appropriate fuel for your aircraft.

Next, the Captain of an air taxi cargo flight discovered that diamonds aren’t every pilot’s best friend.

■ *After getting established on the ILS, I was cleared for the approach. I had only been on the localizer for about 15 seconds before I got the Glideslope (GS) indication. The GS needle moved from the bottom towards the “diamond” (that indicates ON the GS), and stopped on the “diamond.” Assuming I was on the GS, I started my descent. Decision height intercept altitude was 1,500 feet and I was coming up on 1,000 feet when Tower gave me an altitude alert and advised me to climb back to 1,500.*

When the avionics shop checked the GS, they found the GS needle physically sticking on the “diamond,” which is a plastic piece protruding on the GS scale (not a painted mark). This was leaving NO GS warning flags to indicate a problem. Just a picture-perfect ILS with a not-so-perfect possible outcome had we been in weather down to minimums!

Lights! Action! Oops!

In another report, an air carrier crew fell victim to an admittedly “well-known optical illusion.”

■ *The terminal has a light system for parking. When the light goes off, that means the [wheel] chocks are in. After shutting down one engine and while waiting for the light to go out, I inadvertently released the brakes. Because the ramp is not level, the airplane began to slowly roll backwards. This movement was not apparent to me or the First Officer. Contributing to our lack of recognition is the jetway movement, which gives the sensation of [the airplane] moving. This optical illusion is well-known and routinely disregarded, so it took several seconds before I realized we were moving and reapplied the brakes.*

Any apparent aircraft movement should be suspect. This crew was fortunate to recognize the problem before a ground collision occurred. ▲

“A Certain Slant of Light”

— Emily Dickinson

At night, lights on and in the vicinity of the airport can also result in optical illusions, as illustrated in a report by a crew member of a cargo jet:

■ *I saw unidentified traffic crossing my centerline near the end of the runway. I rejected the takeoff to determine what the traffic was and pinpoint its actual position. It turned out to be a ground service vehicle on another runway that did not intersect my runway. This was hard to see due to the confusion of lights near the end of the runway.*

Faced with an unknown and possibly very hazardous ground conflict, the crew’s decision to reject the takeoff was the safest course of action.

A general aviation pilot experienced a surprising illusion on what was an otherwise beautiful night for flying.

■ *It was a clear, moonless, and very dark night with excellent visibility. About 15 miles out, I started my descent into ABC. I noticed another plane directly ahead*

of me, strobes flashing. When I was 9.5 miles from ABC, the other plane called the Tower for transition, saying that he was 9 miles out and was a helicopter. I immediately realized that there was a problem. My eyes were telling me he was still miles ahead of me, yet his position report indicated that he was far closer to me than I had thought...possibly only a half mile away. I passed about 100-200 feet under the helicopter, which scared both of us.

My complete misjudgment of the distance between us resulted from the initial assumption that he was an airplane. I kept looking at the strobes and the distance between them, and assuming it was an airplane. Instead, it was a helicopter with the strobes only five feet apart, not 35 feet as in most small airplanes. This created an optical illusion and convinced me I was many miles behind him.

The strobe lights on most helicopters are mounted at each end of the horizontal stabilizer, hence are usually only about 5-6 feet apart. ▲