

CALLBACK

From NASA's Aviation Safety Reporting System

ASRS

Number 218

August 1997

Clearance Clarification

Information found in both written and verbal clearances is frequently subject to misinterpretation. In our first ASRS report, instructions in a published procedure were treated as a clearance by a corporate crew.

■ *We were cleared for the VOR arrival. We were at FL310 and had already programmed the "expect-crossing-altitude" of 17,000 feet at the VOR [according to the published arrival procedure]. When the altitude alerter sounded, I advised Center that we were leaving FL310. He acknowledged with a "Roger." At FL270, Center quizzed us about our descent. I told him we were descending so as to cross the VOR at 17,000 feet. He advised us that we did not have clearance to descend. What we thought was a clearance was in fact an "expect" clearance.*

We are both experienced pilots...which just means that experience is no substitute for a direct question to Center when you are in doubt about a clearance. Also, the term "Roger" only means that he received the transmission, not that he understood the transmission.

The Aeronautical Information Manual (AIM) Section 5-4-1 indicates that "Expect" altitudes are published for

planning purposes. "Expect" altitudes are not considered crossing restrictions until verbally issued by ATC.

Another crew fell victim to an apparent readback/hearback error, which resulted in confusion about the clearance, and ultimately, to inadequate separation from another aircraft.

■ *Departing IFR, clearance was to maintain 5,000 feet, expect 12,000 in ten minutes. After hand-off to Center...we understood and read back, "Leaving 5,000 turn left heading 240° for vector on course." First Officer turned to assigned heading climbing through 5,000 feet. At 5,300 feet Center advised assigned altitude was 5,000 feet. We immediately descended to 5,000. Center then informed us we had traffic at 12 o'clock and a mile at 6,000. After passing traffic, a higher altitude was assigned and climb resumed.*

In the cockpit, the words "reaching" and "leaving" sound much alike. We now believe the clearance was probably "reaching 5,000, etc." Even our readback to the controller with "leaving" didn't catch the different wording.

"Reaching" and "leaving" are commonly used ATC terms having different usages. They may be used in clearances involving climbs, descents, turns, or speed changes. ▲

Eye on the Sky

An air taxi pilot credits ATC with a "save"—and his ADF needle with a lesson about weather-induced effects:

■ *On a deadhead leg, I had received the assigned heading to intercept the final approach for a straight-in NDB approach. Upon turning final, the controller told me to switch to Tower. At that moment the ADF needle quickly began to fall and I reported my position to the Tower as being over the final approach fix. The Tower then cleared me to land and I started my descent to MDA. I had descended 200 feet when I noticed my ADF needle was now pointing toward the nose of the airplane. I immediately leveled off and the Tower advised me to contact Approach. The Approach Controller advised me I was left of course and that the minimum altitude was 2,100 feet. He gave me a heading to re-establish me on final. I climbed from 1,900 feet to 2,100 feet and was switched back to the Tower Controller. This time I had true station passage and started my descent to MDA and completed the approach with no further problems.*

Contributing factors: Static (weather-induced) interference on the ADF needle, and the ILS and DME out-of-service. Many thanks to the effort of the controllers. Nice to know they keep an eye on those in the sky.

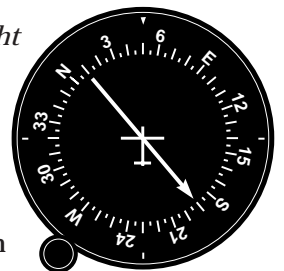
Before the advent of on-board weather radar systems, pilots flying near an area of thunderstorm activity would tune their ADFs to a low frequency and watch where the needle pointed. They avoided areas where the needle pointed (indicating thunderstorm-induced static).

ATC also kept an eye on an air carrier crew, who almost followed their ADF needle to the wrong airport.

■ *Cleared for the visual approach at XYZ. All nav aids were tuned and idented for XYZ. I observed bright runway lights with proper orientation. A quick glance at the map display and needle point on the ADF suggested that it was the right airport. The First Officer agreed. We descended to approximately 400 feet when XYZ Tower advised us that we were on final for ABC [about 3 miles short of XYZ]. We initiated a go-around.*

The ABC runway lights loomed bright and clear with proper orientation. XYZ lights were not as obvious.

A cross-check of other available navigational aids might have given the crew contradictory information, motivating them to seek clarification from ATC. ▲



ASRS Recently Issued Alerts On...

False GPWS alert attributed to an altimeter error
SAAB 340B dual engine failure of unknown cause
False FMS alerts following an MD-88 engine failure
G2B pressurization failure due to anti-ice duct malfunction
A320 flight display failure following an Air Data Recorder fault

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>

June 1997 Report Intake

Air Carrier Pilots	1952
General Aviation Pilots	718
Controllers	88
Cabin/Mechanics/Military/Other	66
TOTAL	2824



Shear Luck—And Training

■ *Operations delayed us on the ground for over an hour due to thunderstorms approaching our destination. By the time we did get there, the thunderstorms were still overhead the field. We were being vectored for Runway 8, then for Runway 9. By now we were in the “get it on the ground” mode. [Then] the ILS went down due to a lightning strike. We followed someone else’s lead and called for a visual approach in marginal VFR. On final at 500 feet, Tower called the winds at 230 degrees at 17 knots. This was greater than 10 knots of tailwind and on a very wet runway. But in the mindset we were in, rational thought did not appear.*

The Captain struggled with windshear all the way down, and floated it halfway down the runway before touchdown. One reverser didn’t deploy and the other was drifting us off centerline. Now on brakes only, we stopped in the last 1,000 feet of rain-soaked, rubber-deposited runway.

It was “shear” luck that this aircraft didn’t roll off the end of the runway.

Windshear can come as a big surprise even when the

crew is prepared for it, as an air carrier Captain reports:

■ *[While we were still at the gate], winds were reported at 260 degrees at 26-35 knots. Windshear loss of 15 knots had been reported by landing aircraft. By pushback and taxi-out, wind was reported at 070 degrees at 4 knots. The last aircraft to land prior to our departure reported no turbulence or airspeed loss. Takeoff...was normal. At approximately 600-800 feet AGL, windshear was announced, both visually and aurally, by the windshear warning system. Airspeed dropped instantly by 25-30 knots to below V_2 . The altimeter stopped showing a climb and the vertical speed indicator showed a 300-foot-per-minute descent. I firewalled the engines. It took about 5-10 seconds for the aircraft to climb or accelerate.*

The First Officer adds: “Even though we had talked about it during taxi-out, flying into a windshear is an eye-opening experience. Having had windshear training repeatedly in the simulator over the last few years really made the difference.”

The crew’s awareness of the windshear and training to counteract it were the keys to a safe outcome in this incident. ▲

Uncontrolled Shouldn't Mean Uncommunicative

Radio communications at uncontrolled airports are sometimes less than optimal in quality and quantity. An air carrier Captain reports that an unclear position report from a tow aircraft at a non-Tower airport almost led to a ground collision.

■ *[Approaching from the southwest], we were on a 5-mile final for Runway 09 at ABC, and UNICOM mentioned that a glider was preparing to leave for Runway 27. The tow pilot said they would be ready in 2 minutes. We thought this meant that the glider and tow were holding short, since no word was said that the aircraft were actually on Runway 27. We radioed that we would continue for Runway 09. No one said anything else.*

While touching down on Runway 09, we saw the glider at the fixed distance markers of Runway 27. Fortunately there was enough room to stop safely before reaching the glider. After our plane was parked, I talked with the people at the FBO, explaining that “in preparation for Runway 27” sounds like the aircraft were holding short, and that it would be helpful to clearly state that the glider is on the runway so that there would be no mistake. ABC is in mountainous terrain and is a challenging airport to service. When in doubt, circle.

UNICOM operators may not be able to provide all the information an inbound pilot needs, and sometimes may

not even have a clear view of the runways. In addition, prudence would suggest that a flight crew discontinue their straight-in approach when faced with soon-to-depart opposite direction traffic.

A report from a general aviation pilot describes how lack of radio communication at an uncontrolled airport led to near-disaster.

■ *I called on UNICOM for landing on Runway 09, and made a call entering base. On final, I had a red and white light on the VASI, and at approximately 100-150 feet AGL, I just caught sight of a helicopter low and left of me, coming up. I tried to pull up to the right, but the helicopter’s rotor impacted my left flap and left horizontal stabilizer. I made an uneventful landing. I did not hear any radio calls from the other aircraft. The helicopter should have made position calls. Additionally, crossing the approach end of an active runway should not be done at glide-slope altitude. This just shows that [a mid-air collision] can happen anywhere in a traffic pattern.*

One wonders what the helicopter pilot was thinking when crossing the approach end of the runway, as reported. However, pilots should also keep in mind that radios are not required at uncontrolled airports, and that many aircraft are not radio-equipped. ▲