

CALLBACK

From NASA's Aviation Safety Reporting System

ASRS

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Communications Issues from ASRS Reports

ASRS recently received a report from a concerned air traffic controller who describes a non-standard communication practice by pilots and controllers – the use of microphone clicks as a response to clearances (by pilots), or to readbacks (by controllers).

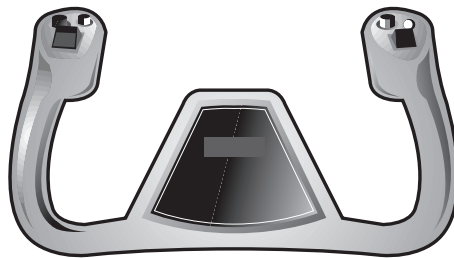
■ *It is very common for pilots to respond to clearances with just their call sign or a double-click of the mike. Neither of these are good responses... Controllers are also at fault for using the double-click to respond to pilots. I have tried to get controllers to change [this practice] in my facility, but old, bad habits are very hard to break. I have been told that the double-click has been around forever and to stop being a baby about it!*

Since all an accident team has to go on is the tapes of the incident, I believe that double-clicks and pilots replying with only their call sign are accidents waiting to happen. As the skies get busier, it is only a matter of time before one of these [practices] leads to, or is particularly to blame, for an incident or accident.

I [suggest a] reminder in the CALLBACK that the only proper way for a pilot to respond to any ATC clearance is by using their call sign and at least a "Roger," if not a complete readback of the clearance. Double-clicks by a pilot or controller have no place in aviation.

A substantial number of ASRS communications-related reports involve readback/hearback problems. Many of these incidents could be prevented if reporters followed prescribed radio contact techniques. Section 4-2-3 of the Aeronautical Information Manual (AIM), and section 2-4-3 of the Controllers Handbook (FAA Order 7110.65) cover correct radio communications phraseology and

techniques for pilots and controllers, respectively. Neither reference endorses microphone clicks as an appropriate response technique.



Clearance "Red Flags"

In the following incident, an air carrier crew fell victim to a clearance misunderstanding, but realized after the event that they had missed several "red flags" that might have

led them to question the clearance:

■ *While taxiing for takeoff, XYZ Radio gave us a clearance as follows: "Cleared via the radials of [jet route], climb and maintain 3-3 thousand, expect FL350 5 minutes after departure." I read back, "...cleared via the radials of [jet route], climb and maintain FL330, expect FL350 5 minutes after departure." Radio came back and said, "Correct, except expect FL350 3 minutes after departure."*

After departure Center gave us a heading of 165°. Through about 10,000 feet, they asked us what altitude we were given. We responded FL330. They said no, it was to climb to 3,000 feet. They said no problem, continue climb to FL 350.

Both Radio and Center missed our readbacks of FL330. Because we were in a rush, we missed the "red flags" of the clearance – "cleared via the radials" and "3-3 thousand." Cleared via the radials would indicate it was an altitude lower than 18,000 feet, and 3-3 thousand is non-standard terminology [for 3,000 feet].

I think the lesson is to pay closer attention to the clearance. Question anything that is not clear, and don't rely on the readback to catch any errors. ▲

From F/A to PA

Those who enjoy aviation humor know that a number of airline jokes feature the bungled or embarrassing Passenger Announcement (PA). A variant is the cockpit call to the Flight Attendant (F/A) that becomes an unintended PA. More from this recent ASRS report:

■ *We were flying ABC-XYZ. Earlier, during crew introductions / briefing a Flight Attendant mentioned*

that she lived south of ABC airport. I mentioned we would pass over her neighborhood on departure and we would ring the F/A call button when over that spot (about 20 nm south of airport).

We did so and due to confusion, I mentioned on the (what I thought was crew interphone but was actually a PA to passengers), "we're over your house now." We were below 10,000 feet when this occurred. ▲

ASRS Recently Issued Alerts On...

A-300 engine failure during initial climb
B737-300 wire bundle damage from rotating flap torque
ARTS radar tracking problem in an East Coast TRACON
CL65 uncommanded thrust reverser deployment at cruise
Multiple reports of problems with a TRACON radar system

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Air Carrier / Air Taxi Pilots	2451
General Aviation Pilots	597
Controllers	76
Cabin/Mechanics/Military/Other	162
TOTAL	3286

“Ever Stop to Think, and Forget to Start Again?” – Bumper Sticker

It doesn't get much better than this: there was a recent event involving human error, and *you* weren't the hapless human involved. CALLBACK, a publication devoted to preventing human error, made a mistake.

In our January 2001 issue (#257), we published an article titled “Code A/ Alert” that featured a report from a general aviation pilot who had filed an IFR flight plan with the equipment notation Code /A. The pilot requested radar vectors for a route short-cut. The Center controller asked whether the aircraft was equipped with GPS, and the pilot replied “VFR GPS.” The pilot was then handed over to another Center controller who rerouted him to a distant VOR fix. Here's what happened next, in the pilot's words...

■ *All was going well until we were handed over to Approach, who complained that we were filed equipment /A but were flying to a distant fix on GPS navigation. He said I should have refused the unsolicited rerouting by Center. I remain confused, as it's my understanding that using any GPS as an adjunct to flying an assigned radar vector to a fix is legal...*

We said that the reporter had erred twice – in requesting a route short-cut using VFR-certified GPS on an IFR flight plan; and in accepting the Center controller's reroute to the distant fix.

We were wrong on both counts, as we subsequently heard from many of you and the FAA sources we consulted:

(1) There is nothing in the FARs that prevents a pilot from requesting, or a controller from granting, a radar vector routing to any fix, as long as the pilot complies with altitude assignments and other FAR requirements. If ATC grants the request, the controller is responsible for radar monitoring until the pilot is able to proceed direct using the certified navigation equipment on board. In the incident reported to ASRS, the pilot's aircraft was /A equipped, so the primary equipment capability was DME and Transponder with Mode C – as filed for the flight.

(2) The use of VFR GPS to “aid” navigation to a cleared fix is also not contrary to the FARs, if certain criteria are met. Our FAA Headquarters source explained it this way:

☞ *Suppose he [the ASRS reporter] had requested and been approved a clearance direct to XYZ and had used a VFR GPS to execute the clearance. Generally, the FARs are permissive, not restrictive, as long as the resulting operation does not reduce the original level of safety. Since the FAA has provided operational approval guidance on the use of VFR RNAV systems in Class A airspace under radar control (see Order 8400.10, Air Transportation Operations Inspectors Handbook, Volume 4, Paragraph 23C(3)(d), using VFR GPS in this case would probably be OK. Additionally, the Aeronautical Information Manual seems to provide similar guidance.*

Our Headquarters source added that the FAA does not actively promote the use of VFR GPS to comply with IFR

clearances, but has initiated a research project to determine the feasibility of this type of operation.



We thank our readers – pilots, controllers, university professors, and aviation consultants – who took the time to let us know our commentary was off base and offered their experience and knowledge as a resource. We are willing to make mistakes if someone else can learn from them. ▲

Fueling Slip

A recent ASRS report from a Cessna-340 pilot provides an example of how fueling errors can not only cause serious incidents, but result in potentially costly engine damage.

■ *[After] arrival...my passengers deplaned and went inside the FBO... As I deplaned, the lineman approached me and said, “I understand you need some fuel.” I replied by saying “Yes, only the tips – hundred octane – I'm going in to check the weather.” The lineman had fueled this particular aircraft before. Normally I stand by the airplane as it is being fueled, but...by the time I got off the phone [with Flight Service]...the lineman had already finished fueling the aircraft. I never even saw the truck he used to fuel the aircraft... The credit card slip did not indicate what type of fuel he had used or how many gallons...*

I let my passengers in, did a walkaround of the aircraft, checked the fuel caps and sumped the tanks to see if any water was present. Everything appeared normal...

The aircraft started normally. I taxied out to the active runway and [did] my pre-takeoff checks and started my takeoff [and]...again checked all engine gauges. They were normal. As I approached 80 knots and rotated, just as I was airborne, one or both engines gave a backfire. I started to abort the takeoff but did not have sufficient runway ahead to land. I was about 100 feet and again checked all gauges. The cylinder head temperatures started to climb toward redline at that time and the engines started to run rough. I reduced power; the cylinder head temps started to reduce and the engines smoothed out. I stayed within gliding distance of the runway, circled and landed... I taxied back to the ramp telling the passengers something was wrong...

As I opened the door, the lineman approached the aircraft. I... asked, “Just what kind of fuel did you put in this?” His reply was “Jet A.” At that point, I had the lineman drain all the fuel from the tip tanks. As he was doing that, I called the [engine manufacturer] service manager for advice... After discussing what happened, we grounded the aircraft.

A misfueling error may not be noticed during preflight unless a pilot opens the fuel cap to inspect the fuel color and smell. Supervising a refueling is the “first line of defense” against this type of problem. ▲