

Communications and Safety



Communications and Safety

The safe and efficient flow of traffic is dependent on a number of factors, not the least of which is clear, concise communication between pilots and air traffic controllers.

This is made possible by being attentive, responsive, and with the use of standard phraseology, utilizing words and terms which have exact, understandable meaning.

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In this lesson we will learn what constitutes, and give examples of safe, effective communication.

We will also discuss the pitfalls to be aware of, and the possible consequences of using non standard phraseology.

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There is a chain of events that must occur with every clearance...

- The controller issues a clearance.
- The pilot receives and understands the clearance.
- The pilot advises the controller he or she received, understands, and will comply with the clearance.
- The controller confirms the pilot as received, understands, and will comply with the clearance.

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A break in any one of the links in this chain can have very undesirable results.



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Factors that can result in a weakened or broken link...

- Poor or unrealistic clearance
- Unheard or Misunderstood clearance
- Poor or incomplete phraseology
- Poor or incomplete readback
- Poor communications technique

Let's explore each of these and the remedies which can establish a successful, strong chain...

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The controller issues a poor or unrealistic clearance

Controllers are generally very good at their jobs, however, they are human and can make mistakes. They are also not in the cockpit and do not see what you see. Because of this, as pilots you need to do what you can, when you can, to ensure a clearance is safe and/or realistic.

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Example 1: The tower controller clears you to cross an active runway.

Don't just blindly assume the runway is safe to cross. Controllers have cleared aircraft to cross runways with an aircraft about to land on that same runway. Pilots have landed on the wrong runway, or even at the wrong airport.

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Example 1: The tower controller clears you to cross an active runway.

Before crossing an active runway, look to the left, scan for traffic, and if clear, audibly say, “Clear Left”. Do this even if you are soloing. If there is another pilot in the plane, make sure you both look both directions and both “clear” the runway.

Make sure your vision isn’t blocked by the other pilot.

Then repeat this procedure to the right. Look both directions regardless of which direction traffic “should” be landing.

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Example 2: The controller issues a turn which will take you into a cloud you suspect contains icing or turbulence.

The controller's radar does not depict clouds, only precipitation.

Don't be afraid to say, "Unable due to weather" and ask for an alternate clearance.

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Example 3: The controller instructs you to climb from 5,000 to 7,000 MSL and be level in two minutes or less.

If your plane is incapable of doing this, again say, “Unable. I can only climb at 500 feet per minute.”

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Example 4: The controller gives you a late turn to final, putting you above the glideslope as you get established on the localizer.

Turning an aircraft to final takes skill and practice. It is also made more difficult depending on the direction of the wind. Some controllers will start the clearance late, not taking into consideration the time it takes to hear the clearance and react, or the experience and proficiency of the pilot.

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One of the most dangerous things you can do is to try and chase the glideslope.

Don't feel like you're a lesser pilot if you tell the controller you can't complete the approach and need to execute a go around.

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The pilot does not hear or misunderstands the clearance

Stay alert. Listen, and make sure you understand what you are expected to do.

If you do not completely hear or understand the clearance, say, “Say Again”, or ask for clarification for a specific part of the clearance.

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Poor or Incomplete Phraseology

There are very specific words and phases which are used to ensure clearances are received and understood with their intended meaning and urgency.

Deviating from standard phraseology leaves room for interpretation or misunderstanding.

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When a clearance is given, such as a climb, descent, or turn, there are three ways in which it can be issued:

- With no caveat
- Expedited
- Immediate

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1. With no caveat:

“N51JA, climb and maintain 5,000”.

In this instance a pilot is expected to execute a normal rate of climb.

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2. Expedited:

“N51JA, climb and maintain 5,000. Expedite the climb.”

Here the controller needs to separate your aircraft from other traffic.

The pilot is expected to begin the climb with no undue delay, utilizing the Best Rate of Climb.

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3. Immediate:

“N51JA, climb immediately to 5,000.”

In this situation the controller needs you to execute the clearance immediately in order to avoid a collision with another aircraft.

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These three options utilize precise words, which are clearly defined in the FAR's and AIM.

The following are real situations where pilots or controllers have deviated from standard phraseology.

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Example 5:

Controller:

“Sky West 457, climb and maintain FL280. No delay in the climb”.

Followed by,

“Sky West 457, I need you to climb faster!”

Pilot:

“You said no delay in the climb. I started climbing as soon as you issued the clearance.”

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Example 5:

The controller actually need the pilot to climb at his best rate. However, the pilot thought the controller just needed him to start the climb with no delay, and climb at a normal rate.

The use of non-standard phraseology resulted in the controller and pilot having a different interpretation of “no delay”.

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Example 6:

Controller:

“Delta 2412, climb and maintain FL310. No delay in the climb.”

Pilot:

“Delta 2412, climb and maintain FL310. Normal rate of climb.”

The controller did not hear the readback and separation was almost lost.

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Example 7:

There are two aircraft in the pattern, Cherokee 4745M, and Cherokee 4945M.

The pilot of one aircraft consistently reads back clearances as “Cherokee 45M”.

You can imagine the confusion that resulted.

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Poor or incomplete readback

Readbacks should be complete, and stated in the order they were given.

It is helpful to write down the information that is given to you down as it is given.

Another technique is to write down the information AS you are giving the readback. This will reinforce what you are saying and pace your speech.

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Example 8:

Controller: American 243, turn right heading 310, climb and maintain FL280”

Pilot: “American 243, roger.”

Controller: American 243, I’ll need a full readback. Turn right heading 310, climb and maintain FL280.”

Pilot: “American 243, 310 and 280.”

Controller: American 243, please confirm 310 is a heading and 280 is an altitude.”

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Not only are the initial readbacks incomplete and leave room for misunderstanding, but it has now taken three times as long to issue the clearance.

“Roger” should only be used to acknowledge receipt of information, never as a readback of a clearance.

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Poor communications technique

Before you key the mike, know what you want to say.

Also, wait for a break in communications to speak. Do not step on a controller's clearance or another pilot's readback.

When speaking we tend to do so faster than we realize. Speak slowly and clearly. It takes longer to repeat yourself than to say it slowly and properly the first time.

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Summary

Be attentive! Listen for your callsign.

Make sure you understand the clearance or information given to you.
Do not be afraid to ask for clarification.

Always use your full callsign and give a full readback.

Know what standard phraseology is, and always use it!

Remember!

Ensuring Safety is No Accident!

Questions?

