



Aerotow Signals – Do you know what’s going on?

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In the May issue of Soaring Gene Hammond reviewed the basic ground and in-flight signals used by US glider pilots. The SSA codified most of these signals in the late 1940’s due to the coordination efforts of Fritz Compton. However, one in-flight signal “something is wrong with the glider” was added to the mix in the mid 1990’s. Unfortunately, this signal continues to be misinterpreted by glider pilots who release instead of checking to see what’s wrong (e.g., the spoilers are open).

Visual signals provide a means of communication between the glider pilot and the tow pilot. Radios may provide another communications channel, but it is essential that we all know and use all available communications channels when important safety information is being conveyed. A radio transmission from a remote source may prevent a message from being received, but being 200 ft behind the tow-plane, it’s hard to imagine that you can’t see the visual signal.

However, seeing and understanding are two separate issues. Therefore let’s talk about the 2 most common signals that the tow pilot can give. The first means the towplane is in trouble, release immediately. This is accomplished by the tow pilot moving the stick side-to-side causing the towplane to rock it’s wings. Upon receiving this signal the glider pilot should immediately release and execute a pre-determined emergency plan.

The second signal means ‘something is wrong with your glider’. The most common problem is that the spoilers are open and this is affecting the towplane’s ability to climb. This signal is accomplished by the tow pilot rapidly moving the rudder pedals left and right fanning the rudder. Upon

receiving this signal the glider pilot should immediately confirm that the spoilers are closed and locked.

The glider pilot should then check the vario to determine if the towplane is climbing normally. If the glider appears to be configured properly, then a radio call to the tow pilot would be a good way to ask 'why is he giving you this signal'?

On the surface it appears that these 2 signals are completely different and could not be confused with each other. Yet time and again, flight instructors around the country indicate that pilots are releasing when the rudder waggle signal is given. Let's examine a few of the reasons for this and look for ways to prevent it from happening or mitigating it from degenerating into a serious problem for the glider pilot.

One possible cause for a misinterpretation is that the tow pilot was not proficient in giving this signal. Due to the short wings of the towplane it is quite possible that roll-coupling can cause the wings to rock as the towpilot attempts to fan the rudder. Moving the rudder pedals slowly can amplify this effect, as stepping on the left rudder will cause the towplane to yaw to the left, accelerating the right wing tip causing it to rise. Stepping on the right rudder pedal will cause the left wing to rise. Tow pilots should practice this maneuver with an experienced instructor to verify how much roll-coupling this towplane has and how to properly give the rudder waggle signal.

A second possible cause for misinterpretation is that the glider pilot is not proficient in understanding this signal. Most of the time your instructor will ask you what you would do if the rope failed at this point in the tow. This might be setting glider pilots up to be on a hair trigger to react the minute something starts to go wrong. Seeing any signal from the towplane causes the automatic reaction, pull the release. Glider pilot's need ground and flight training in seeing and properly responding to the rudder waggle signal.

What can you do to improve the odds and not release with the spoilers open? Here is a short list.

- Learn the signals and review them regularly. The SSF has a safety training DVD which clearly demonstrates all of the SSA signals, visit the SSF web site and click on the 'forms' tab to order one. You can also review the on-line Tow Pilot training course; it's not just for tow pilots. However, for tow pilots just watching the video or doing the on-line course isn't enough, you will need to practice this maneuver if you want to remain proficient.
- Another good practice is for the tow pilot to not give the rudder waggle signal below some minimum altitude, say 200 ft – AS LONG AS THIS IS SAFE TO DO. When the tow pilot recognizes that the spoilers have opened, she should evaluate the situation and if a positive climb is being maintained and there are no obstacles in the flight path, do not immediately give the rudder waggle signal. Instead continue to climb while staying close to the airport. When sufficient height is reached, then give the rudder waggle signal and if the glider pilot releases, at least he will be in a better position to execute a safe landing.
- Glider pilots also need initial training and regular review both on the ground and in the air. A recent discussion with other instructors brought up the comment, if the student had seen and practiced this maneuver during his training and then saw the rudder waggle signal again at a later date, he was likely to properly recognize the signal. Pilots, who never received this practice, were highly likely to misinterpret the signal and pull the release. This means that instructors need to incorporate this into our initial and recurrent training programs to provide this training to all our pilots.
- Finally, one way to get something to stick in your head is to come up with a synonym for the signal. Burt Compton has recently said, the rudder waggle is the tow-pilot slapping you in the face because something is wrong with your glider and he's trying to get your attention. This is as good an idea as any, so the next time you see the rudder waggle, respond properly and don't immediately pull the release.

Recognizing and understanding the SSA standard ground and in-flight signals is an essential task that every glider pilot needs to master. If you can't immediately respond with the proper action to both of these in-flight signals, then seek out your flight instructor and get the training that you need to become a safer, more proficient pilot.

