

MID-GEORGIA SOARING ASSOCIATION

Airwork Planning

The Practical Test Standards (PTS) have a full plate, and then some, of tasks that the examinee may be required to perform on his check ride from takeoff thru landing. The purpose of this article is to better prepare the student for their check ride by providing a framework for airwork planning. In other words, let's not talk about how to do individual tasks, but zoom out and look at the big picture. Let's look at one possible way to sequence these events so that they flow smoothly from one event (task) to the next. And of course, the more the student incorporates this airwork planning in both dual training and solo practice, the more comfortable he'll be "taking charge" for the Practical Test.

Before going further, it's important to remind us all again there are indeed procedures and there are techniques. Procedures are required by FAR, MGSA Field and Operating Rules, etc while techniques are not mandatory, but rather just one way to go about your business. So now let's journey deep into Techniqueland, and realize that other instructors may have different thoughts on some of the following.

OK, the oral went well as did the preflight walk-around and positive control check. And the takeoff was just about perfect. So far, so good. So let's go flying and have fun. At this point prior airwork planning for the post-takeoff events will help keep the stress level down as you have a flow plan already sorted out from event to event. So let's get to specifics.

On a high aerotow there are two possible additional tasks - wake boxing and slack rope recovery. Assuming you know in advance that wake boxing is this flight's tow event, and you've let the tow pilot know in advance, when do you start? For most takeoffs on Runway 3 (and assuming we did not get the "rope break" scenario sooner), most tow pilots will initiate an early right or left turn to a roughly westerly heading. When he completes his rollout to west and above pattern altitude, I call starting the wake box and get right to it.

If this flight's tow event is slack rope recovery, of course let's again make sure the tow pilot is aware in advance as well. Because of our souped-up Pawnee's great climb performance, slack rope is thankfully a rare event. One technique worth trying on a 3,000 foot tow is to have the tow pilot reduce power at about 2,500 ft AGL to help take some tension off the rope as the instructor/examiner positions the glider for the student's recovery. Students beware; this may be your first opportunity in the flight to let the examiner know that you are aware of the required verbal calls for positive transfer of flight controls spelled out in the PTS! Finally, please do be careful with the TOST tow system to minimize stress on it.

Ok, the tow went well, and we feel some relief after clearing in both directions before releasing from tow. Now what? Before starting the off-tow airwork planning specifics, let's again zoom out and consider the big picture. It's a given while on tow that we want to remain positionally-aware. In other words, at all times we want to know the location of the airfield. The other point to have in mind is the entry point for the pattern you plan to fly based on winds. Of course, winds can shift in the duration of a short training flight, but let's assume it's a standard day with no significant wind shift from takeoff to landing.

So what is the point of knowing both release point in relation to the airfield and planned pattern entry point? In simplest terms, if we did no airwork that would be the straight-line path from release to pattern entry. But, of course, with 2,000 ft of altitude to play with, we know we can certainly meander

quite a bit from this straight line. As we proceed with our airwork while descending (assuming no lift for sake of argument), we are constantly updating our present position vs. our pattern entry point. I call it a big funnel as we gradually work our way back to the pattern. And needless to say, winds aloft need to be known and planned for. Getting too far downwind is not where we want to be.

Now, let's zoom in just a bit and talk about our post-release gameplan. While most of this discussion is pure technique, required procedure states we complete our stall series above 1,500 ft AGL. Knowing that, let's get this done sooner rather than later off tow. But first things first - clearing turns. In Bob Wander's book, *The Private Pilot Glider Checkride Made Easy*, he recommends two 180 degree clearing turns oriented towards the area you plan to do your airwork. I see many interesting variations on these important clearing turns, so I offer these techniques. Off tow, in order, 1) pick a direction you want to do your slow flight and stalls, 2) find a prominent landmark in the direction (Hwy 78 to Athens, Stone Mountain, etc), 3) turn to put the landmark on a wingtip, 4) now while clearing for traffic above, level, and below make two 180 degree clearing turns (one left turn/one right turn) back towards and past the direction you plan to do your stalls. The second 180 is just designed to help catch traffic missed during the first turn. As further good technique, I suggest stating that no traffic is observed and asking the instructor/examiner if he see anything.

OK, the slow flight and stalls went well, and now you are ready for the next events to include turns-to-headings, steep turns, and speed-to-fly exercises. I'll keep this part really simple in terms of airwork planning. Constantly be aware of your relative position to the airfield and its pattern entry point, along with the effects of winds aloft and sink. Knowing present position and available excess altitude above the pattern entry, think about the funnel technique as you gradually work your way back to the pattern. You have a lot of flexibility here in terms of doing what and when. If you plan to include slips at altitude, do plan for the extra loss of altitude this maneuver is planned to achieve.

Finally, with airwork behind you it's time to think about the pattern and landing. Ideally, we "funneled" back nicely to the airfield and are just outside the pattern with a few hundred feet to spare above our pattern entry altitude. This bit of extra altitude does several things for us. It gives us time to assess winds, check for takeoff/landing traffic, run the Before Landing checklist, and just as importantly, catch our breath and think about this next key task. I do not want to rush myself on any PTS task, particularly so the traffic pattern and landing. Getting "our ducks in a row" with a little extra altitude translates into extra time to think before commencing the pattern, and can pay big dividends.

Hopefully this article can benefit our students in terms of planning their training flights. Take charge in terms of thinking and acting like PICs, have an airwork flow plan, and generally it will work well for you. As a smart glider pilot, however, Plan B's are important. Do be ready for "audibles" based on winds, sink, traffic, etc. Plan B's are part of aviation, so never get locked into a Plan A that has been overcome by events. Getting back to the pattern safely is job one. Getting back to the pattern having maximized your airwork training enroute is the desired Plan A. Thinking about it in advance, and practicing it often is one key to a successful checkride.