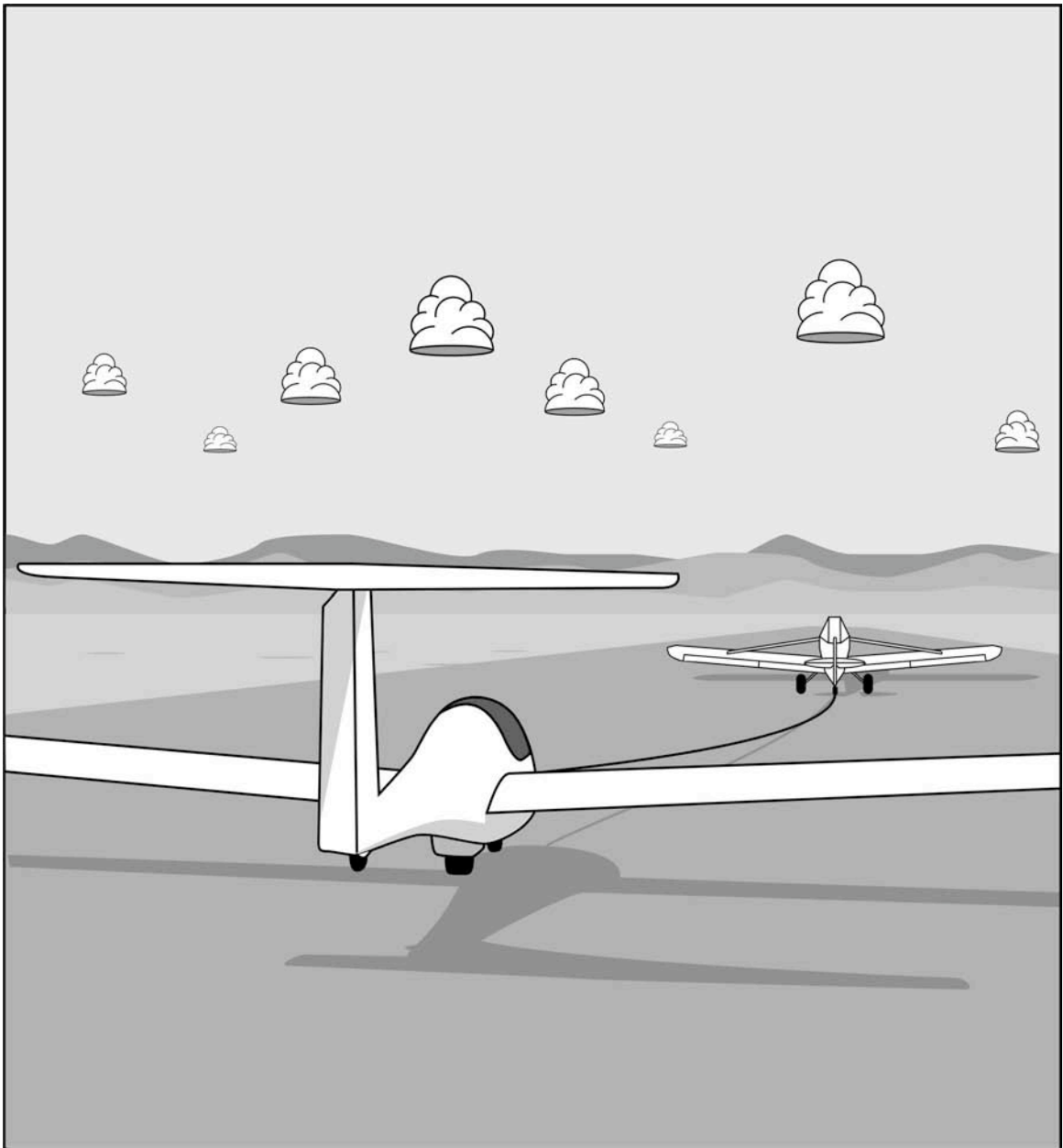


CHAPTER 2: TAKEOFFS

The takeoff is one of the two most critical phases of flight, the other being the landing. The takeoff is unique, however, in that it is optional. If the conditions are unacceptable, the glider pilot should postpone or cancel the flight.

Because of the proximity of ground personnel to the tow plane and glider, careful coordination of the takeoff is required. In this chapter, you will learn how to prepare for takeoff and how to perform takeoffs in various conditions.



2.1 Takeoff Checklist

Purpose

Many accidents could be prevented if all pilots consistently used checklists. When overlooked, an apparently minor item, such as latching the canopy or locking the airbrakes, can create a significant hazard shortly after takeoff. In this lesson, you will get in the habit of going through a takeoff checklist before each flight.

Every glider should have its own takeoff checklist. If the glider you are using for training does not have a checklist posted in the cockpit, you can make your own and carry it with you when you fly.

Procedure

There are three different sections to the takeoff checklist. A sample takeoff checklist is shown in Figure 2.1.

<u>BEFORE TAXI</u>	<u>ON RUNWAY</u>	<u>READY FOR TAKEOFF</u>
Rudder Pedals (Adjust and Lock)	Wind	Check for Free Movement of Stick and Airbrakes
Radio	Emergency Plan	Lock Airbrakes
Variometer	Trim	Waggle Rudder
Altimeter	Belts	
Controls	Tail Dolly Off	
	Tow Rope	
	Wheel Brake On	
	Canopy	

Figure 2.1 – Sample takeoff checklist

Before Taxi

The items in the “Before Taxi” section of the checklist should be performed before you move the glider into position on the runway.

Adjust and lock the rudder pedals in their proper position.

Turn on and set the radio to the proper frequency, and perform a radio check. Set the volume high so that you can listen for activity around the airport.

Turn on the variometer to allow it time to warm up (if electrical), and set the altimeter to the field elevation.

Check the controls (stick, rudder, and airbrakes) for free movement throughout their range.

On Runway

This section of the checklist should be completed after you are positioned on the runway.

Check the wind, and then plan what you will do in case of a premature termination of the tow (see Lesson 8.1). During the beginning of your training, your instructor will be responsible for making this plan.

Set the trim in the takeoff position. Check that your seat belts and those of your instructor (or passenger) are secure. If your glider has a tail dolly, verify that it has been removed before allowing the towrope to be attached to the glider.

Once the towrope is attached, fully open the airbrakes to apply the wheel brake. This makes it clear to the tow pilot that you are not ready to take off, and keeps the glider from lurching forward and possibly hitting the line-person when the rope becomes tight.

You should then close and secure the canopy (or canopies). Check that the canopy is locked by trying to push it open. (Try this sometime when you know the canopy is unlocked to see how much force is required.)

Ready for Takeoff

The final part of the pre-takeoff checklist is used when you have checked for traffic and wind and are ready to go. At this point, perform a final check to make sure the stick and airbrake controls move freely throughout their full range. When you are ready to go, close and lock your airbrakes and give a thumbs-up to signal to the wing runner to level your wings, and then waggle the rudder to indicate to the tow pilot to start the takeoff.

Remember that any time you get distracted or have to stop a checklist, be sure to pick it up right where you left off, or if you are unsure of where you were, start it over.

Common Errors

- Failure to complete the checklist
- Skipping items on the list
- Failure to resume the checklist at the proper point after an interruption or distraction

Completion Standard

This lesson is complete when you consistently perform the pre-takeoff checklist before each flight without prompting from your instructor.

2.2 Takeoff Procedures and Signals

Purpose

For safety's sake, it is important that the launch proceed in an orderly fashion. There are a number of standard signals used for communication between the glider pilot, the tow plane pilot, and the wing runner during the launch. In this lesson, you will learn how and when to use these signals, both as the glider pilot and as the wing runner.

Procedure

Some gliderports use different signals or procedures than the ones given here. Make sure you are familiar with the signals and procedures used at your gliderport.

These procedures assume that a helper (referred to as the line-person) is present to hook up the towrope and run the wing of the glider during the takeoff. If a helper is not available, the procedures will have to be modified accordingly.

Inspecting/Connecting the Towrope

The line-person should show the glider pilot the towrope and ring before connecting the towrope to the glider. This gives the pilot a chance to inspect the rope, knot, and ring.

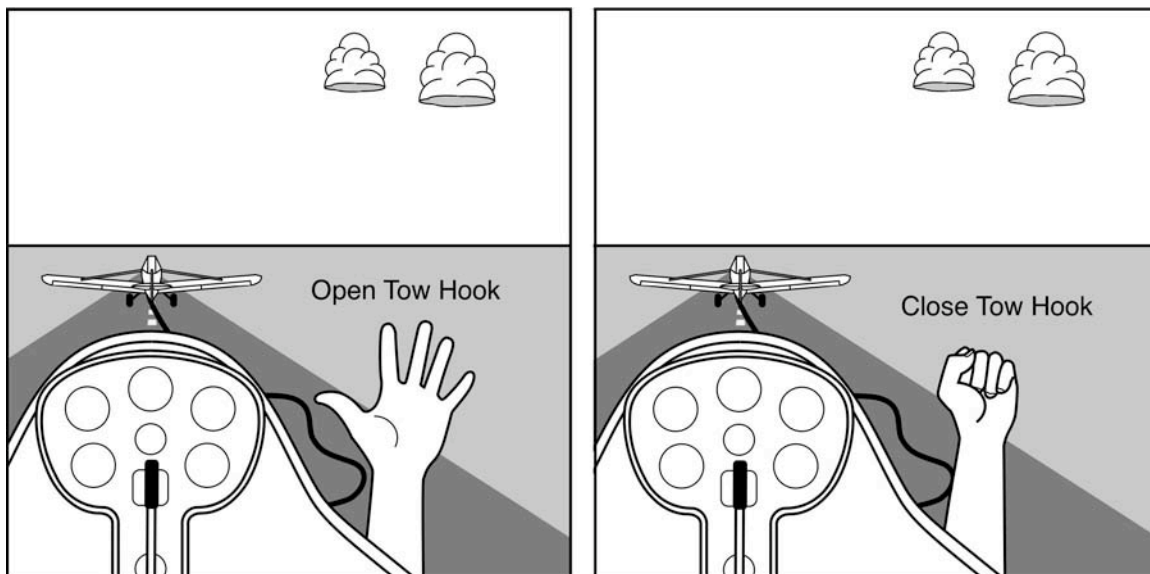


Figure 2.2 – Hookup signals

When getting ready for launch, the first signal you will see is the open signal. This is the line-person's signal to the glider pilot to pull on the towrope release handle to open the tow hook. The close signal is given when the tow ring is in position and the line-person wants the pilot to close the tow hook.

If you are using a Schweizer-style tow hook, close the release gently, so the line-person can adjust the tow hook position as necessary to make sure it is engaged in the release. On all other types of tow hooks, release the handle abruptly, to ensure that the hook closes completely.

After the towrope is attached to the glider, the line-person should tug on the rope to check the connection.

Take Up Slack

Once the towrope connection has been checked, the line-person will tell the tow pilot to take up the slack in the rope by moving to the wing tip and giving the take up slack signal.

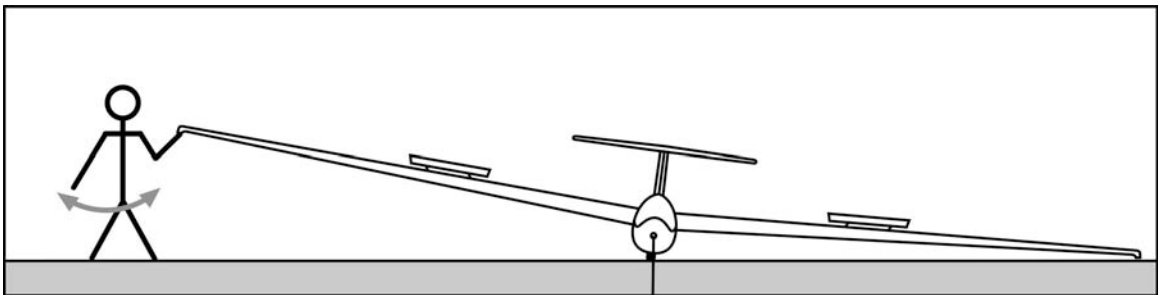


Figure 2.3 – Take up slack signal. Notice how the airbrakes are open, and the wing tip is on the ground.

While the tow pilot is taking up the slack, the wing runner should keep one of the glider's wing tips on the ground. This lets the tow pilot know that the glider is not yet ready to take off.

Ready for Takeoff

When the rope is tight, the wing runner will indicate to the tow pilot to wait for the glider pilot's ready signal by giving the hold signal. The wing runner should continue to hold one wing tip on the ground.

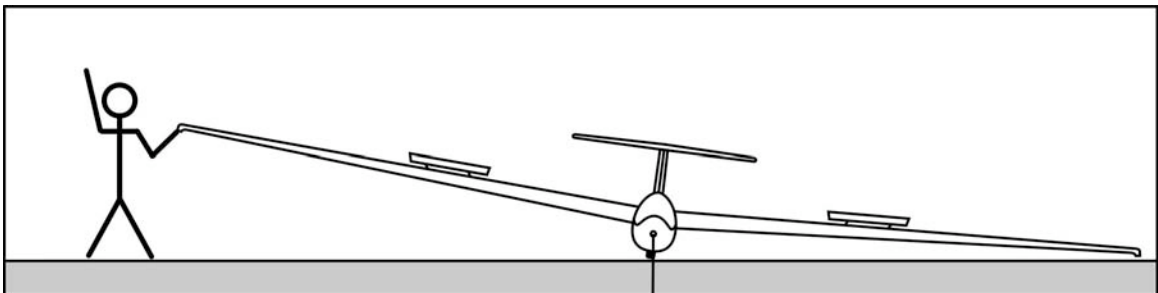


Figure 2.4 – Hold signal.

The glider pilot should give the thumbs-up signal once completely ready to take off. However, this is not the signal to begin the takeoff. This should be interpreted by the wing runner as the signal to level the wings, and do a final visual check for traffic, wind, etc., to make sure it is safe to launch.