

# Tandem Training Flights

## Introduction

A tandem training flight is a great way for someone to learn some of the basics of flying a paraglider. An experienced pilot will be in control of the flight at all times. If desired the trainee (you), can take the controls at some point and fly the paraglider, if desired.

Cost of a tandem flight is \$190.

[Contact us](#) to schedule a training/discovery tandem flight. Because of the extremes of our climate, powered tandems rather than non-powered tandems are done more often because of greater safety and convenience. When conditions at some of our sites are ideal for free-flight tandems, we can do a non-powered tandem. All tandem students must meet #'s 1,2, and 4 of the [physical requirements](#) section and all of the [mental requirements](#).

PROTECTIVE EYEWEAR MUST BE WORN FOR FREE-FLIGHT TANDEMS. If there is a sudden release of the tow bridle, it can snap back with force, possible injuring the passenger's face/eyes.

In order to get ready, please study the following to learn about the basic things that happen in a tandem flight. The most important difference between powered and non-powered tandems is that PPG tandems usually require a much longer run to get airborne. A minor difference is that we do powered (PPG) tandems very early in the morning, usually at dawn. Free flight (PG) tandems are best done in the late afternoon, when conditions are milder but there is still some active air.

Here is a great video of a [typical powered tandem](#) filmed by David Guerin. This one has some highlights of a [PPG tandem](#).

Here are the steps we go through in order to fly tandem. "PIC" refers to the "pilot in command", he is the one controlling the flight. "STU" refers to the passenger, the student being trained. [Download this page](#), print it out, and bring it to your tandem lesson.

## 1. Meeting place & required gear

We will agree to the time and place where the tandem will take place. Free-flight tandem passengers MUST wear protective eyewear to protect the eyes

from an unexpected release of the tow bridle from the tow line. In rugged environments, knee pads, elbow pads and gloves are strongly recommended. Please check with us if there are any questions.

## **2. Paperwork and legal details**

At the flying site, the STU will read and execute our release of liability and waiver (RWA). If it is a non-powered flight, the STU will also complete a (30) day temporary membership application in USHPA, our national paragliding organization, just before the flight begins. All students must download, print, read, date, read, and execute the [PASA](#) and [USHPA](#) RWA's.

The PIC will inform the STU of the FAA requirements for tandem flights which operate under a special exemption granted by the FAA as follows:

*For powered flights: All flights operating under this exemption must be for training purposes only. This exemption applies only to flights for the purpose of giving instruction in foot-launched, two-place powered paragliders. Prior to all two-occupant training flights, the student must be informed that the flight is conducted under an exemption granted by the FAA and that the foot-launched, two-place powered paraglider does not meet aircraft certification standards set forth by the FAA.*

*For non-powered flights: For training purposes only – this exemption applies only to flights for the purpose of giving instruction in two-place unpowered ultralight vehicles from USHPA-approved launch sites. Both occupants on all two-place training flights must possess a current pilot rating issued by the USHPA and at least one occupant must possess a current USHPA Tandem instructor rating. Prior to all two-occupant training flights, the student must be informed that the flight is conducted under an exemption granted by the FAA and that the ultralight vehicle does not meet aircraft certification standards set forth by the FAA. Both occupants on all two-place flights, other than for training purposes, must possess a current pilot rating issued by the USHPA and at least one occupant must possess a current Tandem Pilot rating issued by the USHPA.*

## **3. How the tandem flight works.**

Here are the general elements involved in a tandem training flight and what will be discussed prior to launch.

- Physical, emotional, psychological condition. Fear, anxiety, knowledge.
- Introduction to equipment. Harness, helmet, reserve, glider, radio, proper clothing, footwear, instruments, pre-flight check.
- Theory of flight. Aerodynamics, airspeed, wing loading ground speed.
- Meteorology. Micro, Macro, effect on flight.

- Equipment use. Harness, leg loops, chest strap, karabiners, hook in.
- Launch practice. Simulate launch, run with student, feel resistance.
- Practice type of launch. Forward or reverse.
- Pre-flight check. Glider layout, leading edge, trailing edge, lines, risers, cells.
- Harnesses on. Hook in, buddy check.
- Wind. Direction, speed.
- Airspace, launch run, gliders on ground and in air.
- Clear to launch, launch!

#### **4. Fitting the tandem harness and helmet on the passenger.**

After completing the paperwork and briefing, the PIC will fit you with the special tandem harness, a helmet, and (if it is a powered tandem) a radio. Powered tandems require a special helmet and radio so that the STU can clearly hear the PIC give commands.

#### **5. Connection to the tandem bar**

Prior to launching, the PIC will connect the STU to the tandem bar and engage in a simulation of the launch with the STU. The PIC will stand behind the STU and give the commands to run and go towards the target, as if launching. This way, the STU will have an idea of how the harness and bar feel and what he must do to successfully help launch the tandem. After the simulation and at the area of launch, the PIC will carefully connect the STU to the tandem equipment and do a [pre-flight check](#) for the STU and himself. The pass harness, the tandem bar, the PIC harness (and paramotor if a powered tandem), and glider are all connected together.

#### **6. Pre-launch details**

We will be connected all together. At the launch area, the PIC will attach the tandem glider to the tandem bar and the STU. The PIC will inflate the tandem glider overhead. Both the PIC and the STU will be roughly parallel (facing sideways) to the glider overhead.

When the glider is stable and the PIC knows everything is ready to go, he will instruct the STU to turn towards and then **run to the target**.

Getting the glider inflated and stable is just like moving a stalled car. It takes a LOT of effort at first and then becomes easier. As we move faster and faster, the glider will BEGIN to lift us up. It is IMPORTANT that the STU continue to run and NOT sit down in the harness. This is because the lift generated by the glider is a GRADUAL process that increases with

speed. The STU should only stop running when the glider is 20' or so in the air. It sounds funny to have your feet swinging back and forth in the air but this should be done because the glider may settle back down to the ground. If the STU is not running but sits down, the PIC will have to abort the flight and we will have to start over again and waste time when we could be up in the air like the birds! It is hard to launch our glider if the landing gear (your feet) is up!

The STU must think of only two things: 1. RUN, RUN, RUN 2. Towards the target. Repeat these two things a number of times as it will help remember them.

## 7. Launching

Be as relaxed as you can. as it helps you do the right thing! Remember that you are flying with a professional who knows what to do. While on the ground, it is important (and helps the PIC a lot) if you remember to move with him. Wherever he goes, you go. If you feel the harness and tandem bar pull back, move back. If to the side, go that way. Do not resist moving around when connected to the PIC, it makes things a bit more difficult for everybody.

- **Target** It's easier to run in a straight line if you have a target. The PIC will tell you what that is, usually an orange cone placed 50 yds. or so in the direction we need to launch. Look at the target. Do not look at the ground as there is nothing there except grass (it is usually green, etc.)
- **Move that "stalled car"** For a powered tandem, the tandem "bar" surrounds the STU and he must hold the bar tightly, bringing it towards the waist, and, on cue from the PIC, push hard against it and pretend you are trying to move a stalled car. It's just like that. Both the PIC and the STU will run. For non-powered tandems, there is no bar but there are handles on the harness that the STU holds tightly and pushes forward on. This helps get the glider to flying speed. The harder the passenger pushes against the bar or the handles, the sooner we get into the air. Remember to run towards the target and not stop until you are well into the air, about 20' above the ground. The tandem could sink back to the ground and you must be ready to run again. But if you do stop, the PIC will have to abort the flight and we will try again.
- **Getting comfortable in the harness** Once in the air, you can get comfortable in the harness, if needed, by using your thumbs hooked to the front lower corners of the harness and then pushing your rear all the way back into the harness. It often helps to bring your arms in so they are not resting on the tandem bar. Once in the air, grab your camera and take photos and videos.

- **Aborting the flight** If at any time, the STU wants to land, indicate by giving a "thumbs down" gesture. The PIC will take note and land the the glider as soon as possible. If we are really high, this can take 5-10 minutes.

## 8. Flight

It is important to relax and enjoy the flight. Here are some elements of the flight itself you might want to study and ask the PIC about before or after the flight:

- Terrain Clearance. Steep slope, shallow slope, trees, rocks, cliffs.
- Weather Changes. Thunderstorm, showers, wind.
- Flight patterns. Right of Way rules.
- Safety during flight.
- How to turn: Weight shift, brake toggles, riser turns.
- Student can feel controls and handle brake toggles.
- Student pilot's condition. Airsick, comfortable, fear, anxiety?
- Type of turns. 360, 180, 90. Steep turns, flat turns, bank angles
- Glider orientation. Pitch, roll, yaw.
- Air Traffic. Planes, hang gliders, paragliders, UAVs.
- Turbulence. Rotor, mechanical, thermal, wake.
- Areas to avoid. Terrain hazards, turbulence.
- Landing. By choice or by necessity.
- Landing sequence. Figure 8, s-turns, Standard Aircraft Approach.
- Final Approach. Legs down, stand up in harness. Flare and run.

## 9. Landing

- **Stand up** On cue from the PIC, stand up as best you can in the harness.
- **Wave your legs** Start gently waving your legs back and forth to train your brain that you will run when landing. If it is a powered tandem flight, the PIC will TURN OFF the engine when about 100' in the air. Sometimes he will turn it off much earlier.
- **It looks like we are coming in fast** But just above the ground and before we touch down, the PIC will slow down the glider. This includes our vertical descent. You will not "face plant" nor injure yourself, even though it seems like you may.
- **Prepare to run** When you feel your feet just touch the ground, **begin running**, as needed. We will stop in just a few feet and ALL will be well.
- **Get ready to turn** On cue, the PIC will ask you to "TURN LEFT!" or "TURN RIGHT!" You will turn about 90 degrees to one way or the other. If you get the LEFT/RIGHT mixed up, it really does not matter. Just TURN so that the PIC can safely bring the glider down.
- **Unhook** from the glider and clear landing area

## 10. Flight debriefing

The PIC and the STU will discuss the flight.

- Point out launch
- Show flight path
- Where to learn? At an USHPA or USPPA approved school
- What's the next lesson?
- You invited to come back for more instruction
- Care of equipment. Putting things away

The PIC will help the STU to enter the flight in his log, if desired.

That's it! Tandems are a tremendous amount of fun and a great way for anyone to learn the basics of how to safely fly a paraglider. The more the student cooperates (studies this page!), the better he will learn and the more fun it is!

**AT ANY TIME DURING THE TANDEM, THE PASSENGER MAY INDICATE THAT HE WANTS TO LAND BY GIVING A "THUMB DOWN" GESTURE. THE PIC WILL LAND AS SOON AS POSSIBLE.**