

Inspection / Prep

The Preflight Checklist is available for download at http://www.ocsoaring.org/Documents/PreFlight/PW-5_pre_flight.pdf. These notes are in the same order as the checklist.

Cockpit

Wing to fuselage locks: check that the red spring latches are “out” keeping the big pins in place.

If you blow into the pitot tube to rest the airspeed indicator, be gentle! In the past it has been damaged by blowing with excessive force. It was repaired in January 2014 and checked against a towplane’s airspeed.

The battery was replaced in the summer of 2014.

Wings

Grease the semi-exposed bearings with lithium grease periodically.

Extend the spoilers, and look down in the box to see that the drain holes are clear. If they get clogged with dirt, water in there can freeze in the winter.

Fuselage

Insert the brass total energy compensation probe into the brass tube on the top surface behind the canopy. Tape it in place. Use a piece of tape about 2.5 to 3 inches long, so you can use it to tape over the tube when you put the ship away.

Open the “turtleneck” hatch to inspect the control connectors. Grease the semi-exposed bearings with lithium grease periodically. Tape it closed again.

Empennage

Look at the bearing at the top of the rudder, to ensure that the locking pin is in place.

Check the red pin under the elevator. Check that the red spring clip is lined up with the painted red line, keeping the pin in place.

Landing gear

The valve stem on the main wheel is very short. You will need an extension to add air to the tire.

Canopy

Release cable: check that the cable goes between the little “fork” near where it connects to the canopy. If it is out of the fork, it won’t release properly.

Wheel brake: you can test the brake by rocking the ship forward and back and applying the brake.

Setup for flight

There is not a specific CG calculation procedure. If the minimum and maximum cockpit loads are observed, the CG will remain within limits. Max cockpit load = 243 lb, min pilot+parachute = 122lb. See the manual for seat position limitations with very light pilots.

A parachute is required equipment. There is no seatback cushion.

The seat back is adjustable.

The headrest / setback pad is adjustable. It rolls or folds up and has velcro to hold it in place.

The pedals are adjustable.

Check your headroom, as the canopy is pretty low. You may need to slouch more than you think.

There is typically room behind the setback for a Camelback water bag.

There is a relief tube under the right side of the seat.

There is room behind and under the seat for your emergency gear.

The trim setting for takeoff varies with the pilot weight. See the manual.

The Mountain High oxygen system takes a 9 volt battery. There is a test button to check the electronics and pressure. Supply your own plain nasal cannula - **not an Oxymizer**. The system already conserves oxygen, and an Oxymizer would not give you enough. There is no connector needed, it accepts plain tubing. The system can be set to turn on and off automatically at 10,000 feet, or can be constantly on. When it is on, you can hear a little puff after each breath.

Flight

The flight attitude on tow may seem a little nose-high compared to other ships.

The control forces are quite light; in smooth air you can fly it with just your fingertips.

The stall is very gentle. The ship will spin, but you have to force it. It may not spin with a heavy pilot.

The maximum altitude is 16,400'.

There is a bit of an air leak from the left rear side of the canopy, so it's a bit noisy. It could use some foam repair there, but the clearance in the joint is pretty tight. We should do that before winter, or it will let in cold air right on your neck!

Borgelt B50 variometer / flight computer

The manual is on the OCSA web site.

The main vario indicator is sometimes unreliable. When it is acting up, it indicates more sink than there really is, and does not always indicate lift properly. Sometimes it will be more reliable later in the day, which has caused us to think there might be a moisture issue in the static system that dries out after flying for a while. Use caution choosing to fly with a possibly unreliable vario; consider using a portable vario as a backup! Soon a pneumatic vario will be installed, so the B50 vario can be sent out for repair.

If the battery becomes depleted, one of the first indications is the B50 vario needle swinging wildly between extreme lift and extreme sink.

The speed-to-fly indicator (vertical gauge) is inoperative. The audio speed-to-fly indication works properly.

A toggle switch on the left armrest switches the meaning of the audio tone:

- "Climb" mode uses tones to tell you the strength of the rising or falling air around you,

up to 15kt. This mode is active when the toggle switch is in the back position - remember this with “hold back and thermal”.

- “Cruise” mode uses tones to tell you whether to speed up or slow down according to your Macready settings. This mode is active when the toggle switch is in the forward position - remember this with “cruise forward”.
- The audio will switch from Cruise to Climb automatically if you encounter lift which exceeds your Macready setting.

The multifunction display has a three-position switch to show averaged vario/netto, outside air temperature, or battery voltage. It has a two-position switch to set the averager responsiveness.

Knobs:

- BALL means ballast, or total aircraft weight including pilot and gear. The numbers indicate a ratio compared to the empty weight aircraft weight. To use this, you’ll need to do the math... in my case I use a setting of about 1.25.
- BUGS tells the computer the clean/dirty state of of the glider.
- STF is the Macready setting.

All three of these factors, combined with the lift/sink and airspeed, contribute to the computer’s recommended speed-to-fly.

Radio

The manual is available on the OCSA web site.

The first several memories are programmed with frequencies for Crystal, the two glider frequencies, etc.

The last memory is programmed with the emergency channel.

If the battery becomes depleted, one of the first indications is the inability to transmit.

The mic is on a flexible rod.

Landing

Recommended approach airspeed is 51 kts.

The maximum demonstrated crosswind component is 12 kts. The rudder is very small, so use caution when deciding whether to fly if there is a good chance of a significant crosswind when you plan to land. At Crystal, consider using the short crosswind runway if there is a significant crosswind.

Like the PW6, the main and nose wheel are non-castering. When both fixed wheels are on the ground, and with the small rudder, it is difficult to significantly change the direction of the ship during the high-speed portion of the rollout. Performing a wheel landing can help alleviate this problem. Once it slows down, it can be steered to the side, but it takes a while to react.

Tiedown

Make sure the nose is tied down securely, so the tail boom won’t bang down.

Make sure the nose is tied down to a fixed anchor, NOT to the steel cable. The glider has been known to “walk” sideways in the wind if the cable is used.

The wingtip ropes should be as vertical as possible. The longer their span, the more freedom the ship has to yaw and pitch in the wind.

Tie back the control stick with the lap belts. Aileron locks are provided. A rudder lock is provided.

Remove the TE probe, place it in the cockpit pocket, and tape over the brass tube on the fuselage.

Trailer

The trailer was built for some other glider and adapted to the PW5. The fit is not great, and damage can occur if it is not loaded correctly.

The rear door is very heavy. It is possible to raise and lower with one person, but having a helper makes it much easier. It is held up by two vertical members with central spring hinges which are not very strong. **Use extreme caution working around the vertical members. A slight bump is enough to release one side. If both sides release, the door becomes a guillotine. Have a helper stand by on either side supporting the door during loading and unloading.**

The nose of the trailer cranks up to lower the tail end for loading the glider. The fuselage goes into a "trolley" and held on by two straps. The placement of the trolley is critical, as it determines the clearance between the canopy and a metal crossmember of the trailer. Ideally the forward strap should be just behind the control stick. The straps are tightened enough to barely squeeze the cockpit lip out of shape. They need to be tight enough to prevent the fuselage from shifting.

After the trolley is lifted onto the trailer, and as it is rolled forward, observe the space between the canopy and the first metal crossmember of the trailer. There may be only 1/8" to 1/4" of clearance. It is necessary to raise and lower the tail manually to help the canopy clear the crossmember. If it will not clear, pull the the fuselage back out and adjust the trolley position under the cockpit. This is extremely important to avoid scratching the canopy. Only the first crossmember presents this conflict.

Remember to observe the crossmember gap when unloading the glider after transport. If the straps allow the fuselage to shift on the trolley, it may be necessary to manhandle it. Worst case, it may be necessary to place some material between the canopy and the metal as it comes out, but this can still allow scratching.

The fuselage rolls forward until the nose fits into the support. The tail is tied in place with a thin cotton rope. The trailer has a slot for the vertical fin, with room for a piece of foam over the top for protection. **Check that the fin is perfectly vertical by lowering the trailer door.** To adjust it, loosen the trolley straps and roll the fuselage.

The wings go into their own trolleys, and the trolley wheels go into a track. The trolleys are held in place up front with bolts and wing nuts.

The stabilizer goes into two wooden forms. The forms fit into the trolley track.

Cushions are stuffed between the trailer sides, the wings, the fuselage, and the elevator.

The spare tire, heavy equipment, and some ballast bags go in the nose of the trailer to help provide proper tongue weight for towing. The ball is 1 7/8".