

Fledge 2

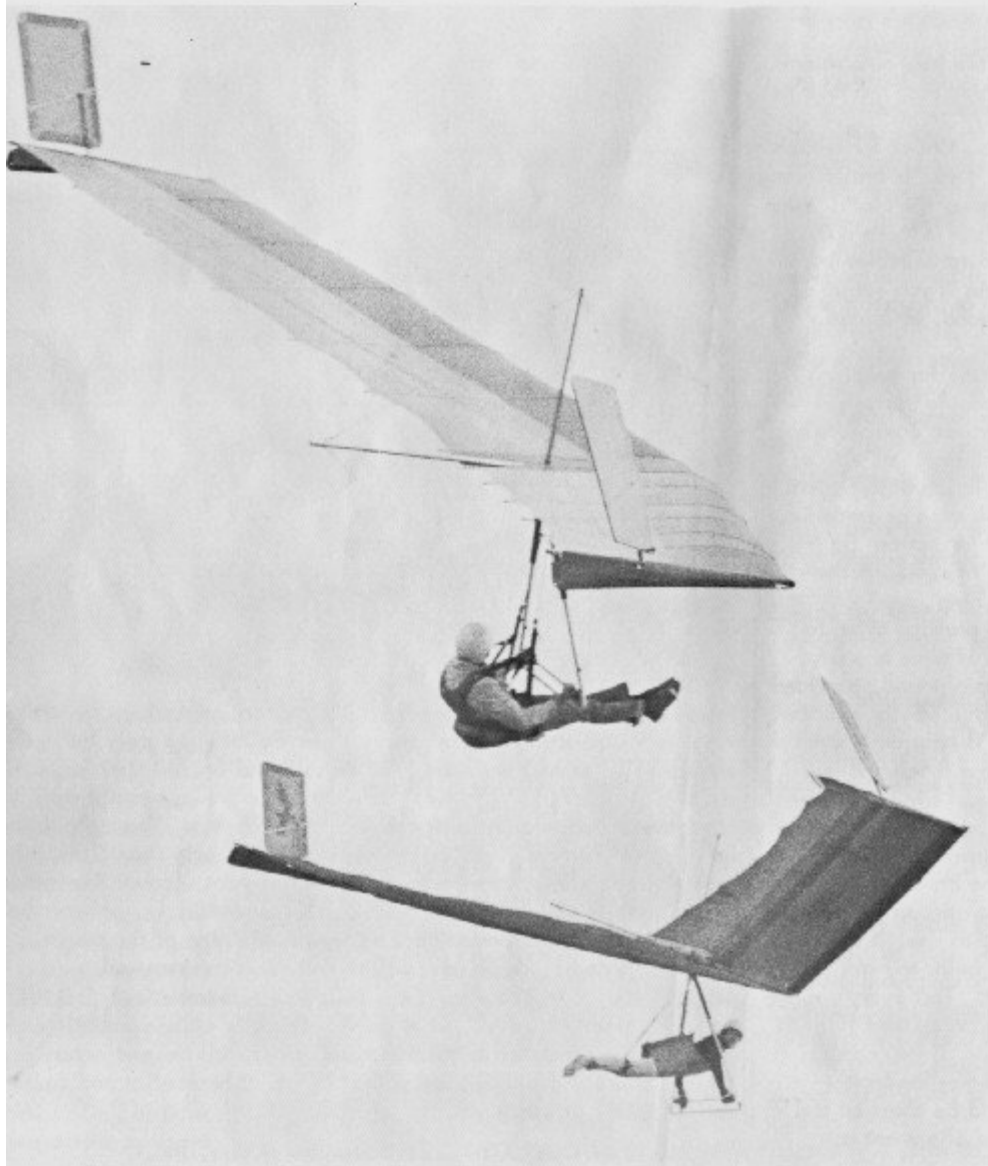
*OWNER'S
MANUAL*



MANTA

MANTA PRODUCTS INC.

1647 E. 14th St. / Oakland, Ca 94606 / (415) 536-1500



FLEDGLING SPECIFICATIONS A SERIES B SERIES

	A SERIES	B SERIES
SPAN	29'	33'
AREA	142 ft ²	162 ft ²
CHORD ROOT	5.5	5.5
TIP ROOT	4.5	4.5
SWEEP	18°	18°
ASPECT RATIO	6	6.8
PILOT WEIGHT RANGE	120-155 lb. / 160-220 lb.	
ESTIMATED PERFORMANCE FIGURES		
L/D	11:1	11:1
SINK RATE	200 fpm	200 fpm
STALL SPEED	14 mph	14 mph
CRUISE SPEED	18-25	18-25
MAX. SPEED	45 mph	45 mph
SET UP TIME (no tools)	10-15 min	15 min
EMPTY WEIGHT	57 lb	63 lb.

A

120 - 6.845/ft²
155 - 1.09 1/4ft²

B

140 - 1.05 1/4
220 - 1.35

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1. Minimum stall speed at the highest recommended wing loading:
Fledgling "A" - 14 Fledgling "B" - 14
2. Kind of operation: Self-launch only. (Do not tow)
3. Flight operation must be limited to Non-aerobatic maneuvers (i.e. those in which the pitch angle will not exceed either 30 degrees nose up or nose down of the horizon, and in which the bank angle will not exceed 60 degrees.) Caution: loops, intentional spins, whip stalls, etc. are forbidden!
4. Recommended pilot weight range: "A" model - 120 lbs. to 155 lbs.
"B" model - 160 lbs. to 220 lbs.
5. Positive load factor limit: 4
Negative load factor limit: 2
6. Recommended level of pilot skill in terms of USHGA Hang Rating: 2

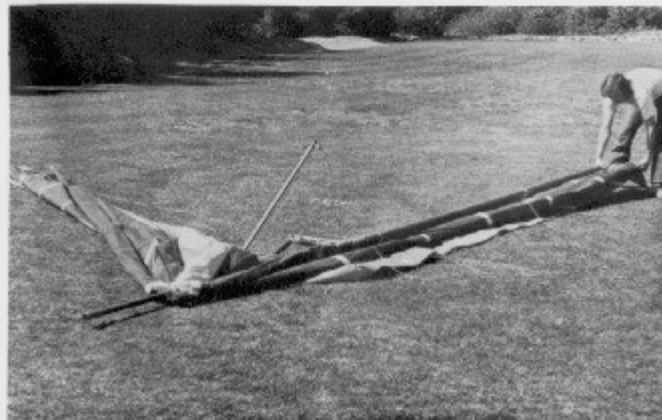
Setting Up

This procedure should be followed closely and each step executed in the designated order. Establish your own method for putting loose items (ties, bags, etc.) in a specific place so you don't waste time looking for them.

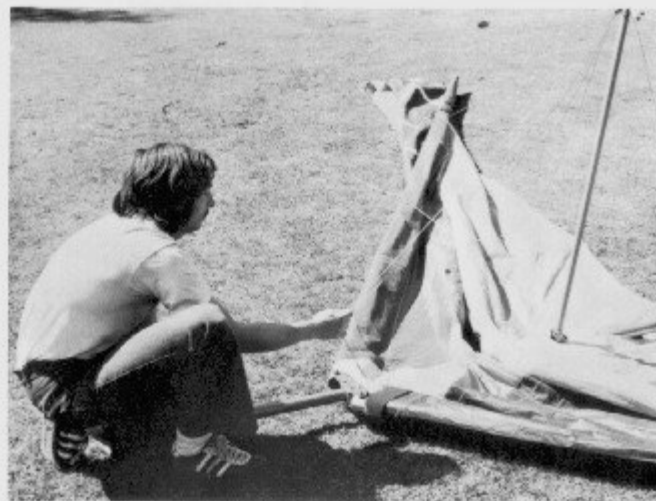
Keep a constant eye out for damaged or worn parts, and replace them with factory - authorized parts only. Get use to seeing how parts look when assembled properly. When finished setting up, you should recheck the placement of every part, especially cables. Avoid stepping on cables, as serious damage to them could result.



1. Set the Fledgling on the ground with the control bar underneath the tail pointing to the wind.



2. Put front spars on top of the rear spars and spread them slowly to make sure no parts bind, and cables remain untangled. Caution: if dropped, the front spars may damage the noseplate. To be sure the front spars don't slip off, you might secure them with a tie.



3. Pull the kingpost erect by the front top wire.



2. By lifting the nose and resting the wing back on its keel, you can swing the control bar forward.



7. Assemble the four compression struts, starting with the two outside ones first. The struts are in two halves. Start by pulling back on the spring slide inside the forward half (attached to the leading edge). Just catch this insert inside the edge of the rear half of the compression strut, pull the compression strut straight, and then make sure the spring slide is slid all the way into the rear section. Be careful not to catch any fingers. Pull the zipper closed.



. With the keel spar against your knee, pull the nose-plate forward and insert the ball lock pin from above. Pull on the lower plate if necessary to get the BLP fully inserted. Make sure the spar do not slip off the rear spar in this operation.



. Attach the nose-wire shackle to the nose plate with the clevis and safety ring. Note positioning of the hands to get enough slack.



8. Sort the ribs. Match each right-left pair for identical shapes. (For misshaped ribs consult the rib diagram and maintenance section) Lay each rib near the pocket it will occupy. Longest ribs go to the inner pockets and reflexed ribs go to the outer pockets.



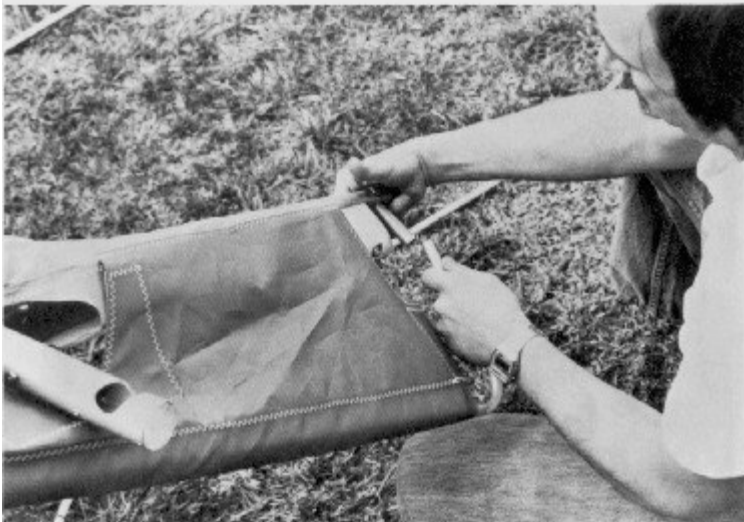
10. Note as you move toward the tips you can rock the wing to help get the ribs in. Pull down (softly) on the rear of each rib to help get the camber to slide over the rear spar. If the rib pocket forms a fold at the rear spar, firmly pull back on the trailing edge of the sail and slowly slide the rib over the spar. Again, never force the ribs!



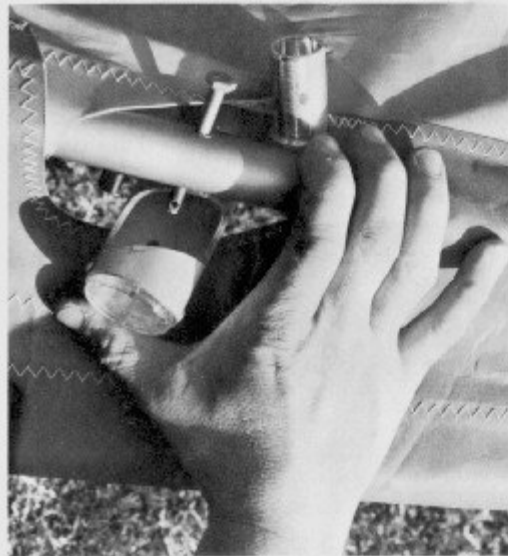
9. Lift the tail and slide each rib into its pocket fully, starting at the keel and working toward the tips. In much wind you might get some help.



11. After all the straight ribs are in (and before the reflexed ribs are inserted) assemble the tip-rib and droop-tip. Begin by sliding the tip-rib (1") and droop into their respective pockets. The tip-rib also fits into a hole in the leading edge ... the droop tip (front) will be positioned under the leading edge. The tip-ribs are marked at the ends for "right" and "left."



12. Connect the tip-rib and droop tip. Note the rear spar is through the hole in the sail, with the fabric beneath!



14. Insert the tip-rib into the rear spar bracket. Start by catching the edge with the bolt. At this point you can twist the tip-rib and it will align to the correct position.

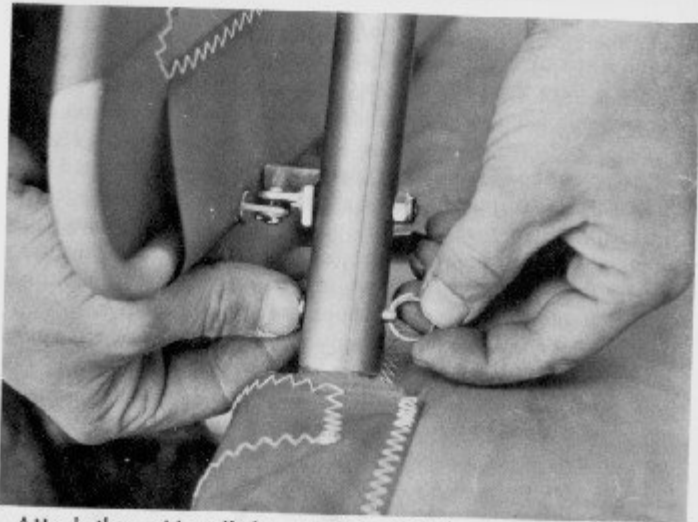


13. Pull the sail back and place the sail grommet over the peg at the end of the tip-rib, making sure the tip-rib and droop are aligned properly at the leading edge. (See #11)

Pull the droop tip fabric tight and secure with the velcro across the back of the droop tip rib.



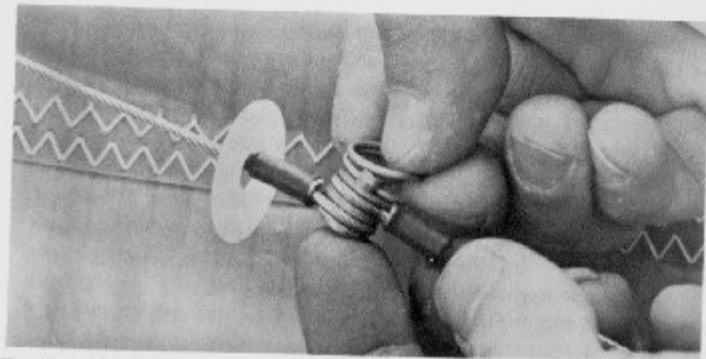
15. Study the photo at the left. Most people find this difficult at first, so practice it a few times at home. After aligning the tip-rib as in #14, position your hands as shown. Left hand (reverse for other side) will be pushing against the rear spar. With a quick jerk, pull out with the right hand ... and squeeze the rear spar and tip-rib together with the left. This gets the tip-rib into the slot. If the bolt is slightly out of alignment for the bolt-hole, rock the tip-rib up and down and "walk" the bolt to the hole. The end cap is clear so you can see what you are doing. Secure bolt with wing nut and safety ring. You can now put in the remaining reflexed ribs.



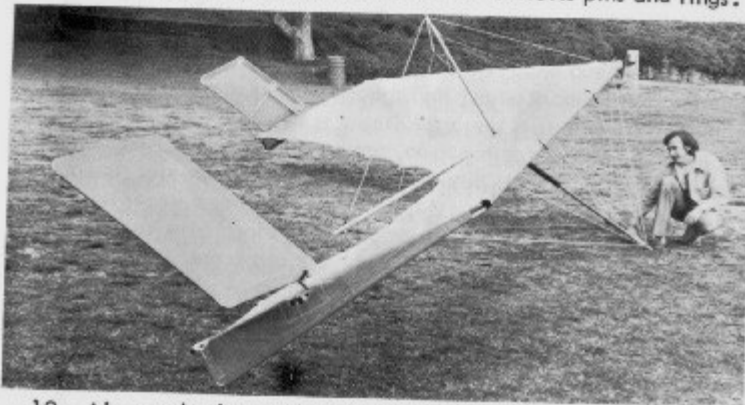
16. Attach the rudders (left and right) with the clevis pins and safety rings. It is always a good idea to leave these attached to the rudders so that you know where they are at all times.



18. Slide the cable tighteners (nylon) to the black marks on the top rigging, and just snug on the tail wires (bottom). Overtightening can distort the rigging. Always pinch the wires together when tightening or loosening so that you don't wear out the nylon slides.



17. Attach the rudder control cables with the clevis pins and rings.



19. Always check to make sure that your rudders are functioning properly. This will be covered in more detail in the Pre-flight section.

Assumptions about equipment cause accidents, so assume nothing and check everything before every flight. If you find anything wrong, do not fly until it is fixed properly. Make-shift repairs and last-minute substitutions also cause accidents. To fly and land safely depends as much on how well you pre-flight your Fledgling as on how well you pilot it. Check every part while setting up as well as prior to take-off. In addition, you might have someone hold the nose so that you can suspend in your harness and check the adjustment. Check the ropes on the harness, and make sure that your helmet is on your head.