INSTRUCTION AND MAINTENANCE HANDBOOK

Wing Type

iFUN 16

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AIR CREATION Aérodrome de Lanas - 07200 AUBENAS - France
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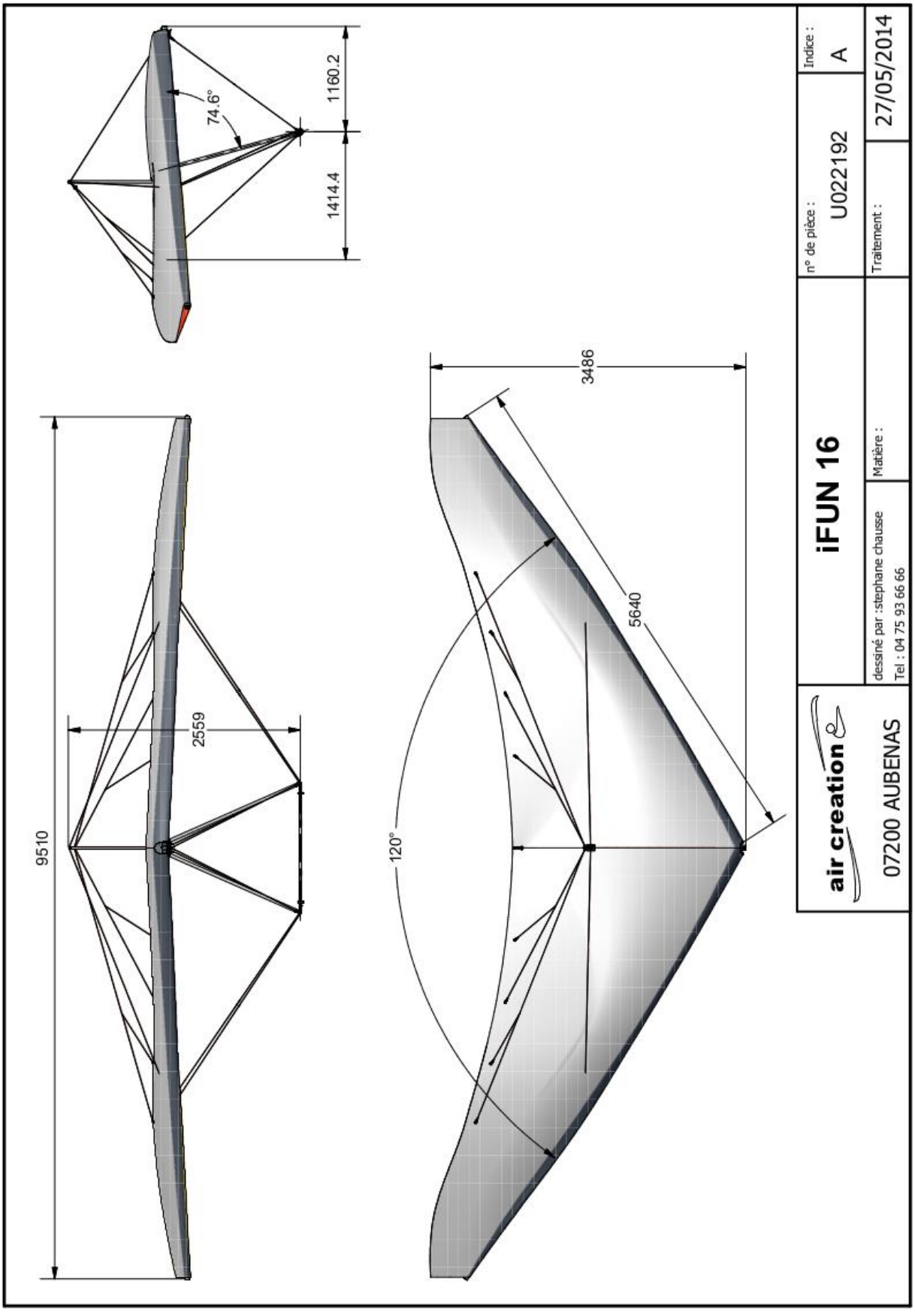
I) Drawings



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II) Technical Specifications - Performance

a) Technical Specifications

Area	16.3 sq m (175.5 sq ft)
Airfoil type	40% double surface
Wingspan	9.5 m (31.2 ft)
Nose angle	122°
Aspect ratio	5.5
Empty weight	45 kg (99 lbs)
Ultimate load factors At max weight of	+6g / -3g 462 kg (1018 lbs)
Limit load factors	+ 4g / -0g (-2g under gust)

b) Maximum added load

The maximum load which may be added under the wing is **417 kg (919 lbs)**. The following chart defines the useful load of our different trike models.

Metric Units

	Lst Skypper 582/582S	**Lst Skypper 700E**	**Lst Skypper 912 (S)**	**arv TANARG 582**	**arv TANARG 912**	**arv TANARG 912 S (ES)**
M.T.O.W.	462 kg	462 kg	462 kg	462 kg	462 kg	462 kg
Empty weight*	192 kg	196 kg	213 kg (215 kg)	212 kg	231 kg	233 kg (228 kg)
Maximum empty weight	291,5 kg	297 kg	294,5 kg (293 kg)	291,5 kg	294,5 kg	293 kg
Useful load	258 kg	254 kg	237 kg (235 kg)	238 kg	219 kg	217 kg (222 kg)

* excluding additional options

⚠ *Caution: fitting of any equipment or any other change should never lead to exceeding the maximum empty weight value mentioned above, according to security standards and aircraft conformity.*

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Imperial Units

	Lst Skypper 582/582S	Lst Skypper 700E	Lst Skypper 912 (S)	arv TANARG 582	arv TANARG 912	arv TANARG 912 S (ES)
M.T.O.W.	1018 lbs	1018 lbs	1018 lbs	1018 lbs	1018 lbs	1018 lbs
Empty weight	423 lbs	432 lbs	469 lbs (473 lbs)	467 lbs	509 lbs	513 lbs (502 lbs)
Max empty weight	642 lbs	654 lbs	649 lbs (645 lbs)	642 lbs	649 lbs	645 lbs
Useful load	568 lbs	559 lbs	522 lbs (518 lbs)	524 lbs	482 lbs	478 lbs (489 lbs)

It is possible to adapt other trikes than the ones mentioned above. Their maximum weight should be less than 417 kg (919 lbs) fully loaded. *The stability of the trike alone must be absolutely positive in yaw* in order to guarantee the stability at high speed.
Then progressive tests will be performed to check the adaptation wing/trike, especially concerning the position of the control bar and the thrust line height. The necessary engine power for safe two-seater flight should be at least 60 HP.
Check during fitting whether the trike propeller stays clear of the lower rear longitudinal cables and the keel. A minimum clearance of 10 cm (4 inches) should be respected when the hang point is set to the front position and the wing is fully nose up and all the way banked on one side.

c) Performance at maximum take-off weight

Metric Units

Trike	Lst Skypper 582/582S	Lst Skypper 700E	Lst Skypper 912 (S)	arv TANARG 582	arv TANARG 912	arv TANARG 912 S (ES)
Maximum take-off weight	462 kg	462 kg	462 kg	462 kg	462 kg	462 kg
Stall speed	56 km/h	56 km/h	56 km/h	56 km/h	56 km/h	56 km/h
Minimum speed	60 km/h	60 km/h	60 km/h	60 km/h	60 km/h	60 km/h
Recommended climbing speed	70 km/h	70 km/h	70 km/h	70 km/h	70 km/h	70 km/h
Takeoff run	85 m	100 m	75 m (65 m)	85 m	75 m	65 m (70 m)
50 ft clearing distance	205 m	230 m	190 m (160 m)	205 m	190 m	160 m (170 m)
Climb rate	3.5 m/s	2.7 m/s	4.8 m/s (5.8 m/s)	3.5 m/s	4.8 m/s	5.8 m/s (5.3 m/s)
Recommended approach speed	75 km/h	75 km/h	75 km/h	75 km/h	75 km/h	75 km/h
Landing distance from 50 ft height	140 m	140 m	140 m	140 m	140 m	140 m
Max L/D ratio	7	7	7	7.5	7.5	7.5
Max glide ratio speed	75 km/h	75 km/h	75 km/h	75 km/h	75 km/h	75 km/h
Crosswind limit	15 kts	15 kts	15 kt	15 kts	15 kts	15 kts
VNE (Velocity never to exceed)	135 km/h	135 km/h	135 km/h	135 km/h	135 km/h	135 km/h
V.man (never to be exceeded in very turbulent air)	112 km/h	112 km/h	112 km/h	112 km/h	112 km/h	112 km/h
Roll rate at 120% V min. (45°/45°)	3 s	3 s	3 s	3 s	3 s	3 s

Imperial Units

Trike	Lst Skypper 582/582S	Lst Skypper 700E	Lst Skypper 912 (S)	arv TANARG 582	arv TANARG 912	arv TANARG 912 S (ES)
Maximum take-off weight	1018 lbs	1018 lbs	1018 lbs	1018 lbs	1018 lbs	1018 lbs
Stall speed	35 mph	35 mph	35 mph	35 mph	35 mph	35 mph
Minimum speed	37 mph	37 mph	37 mph	37 mph	37 mph	37 mph
Recommended climbing speed	44 mph	44 mph	44 mph	44 mph	44 mph	44 mph
Takeoff run	279 ft	328 ft	246 ft (213 ft)	279 ft	246 ft	213 ft (230 ft)
50 ft clearing distance	205 m	230 m	190 m (160 m)	205 m	190 m	160 m (1230 ft)
Climb rate	689 ft/min	532 ft/min	945 ft/min (1142 ft/min)	689 ft/min	945 ft/min	1142 ft/min (1043 ft/min)
Recommended approach speed	47 mph	47 mph	47 mph	47 mph	47 mph	47 mph
Landing distance from 50 ft height	459 ft	459 ft	459 ft	459 ft	459 ft	459 ft
Max L/D ratio	7	7	7	7.5	7.5	7.5
Max glide ratio speed	47 mph	47 mph	47 mph	47 mph	47 mph	47 mph
Crosswind limit	15 kts	15 kts	15 kts	15 kts	15 kts	15 kts
VNE (Velocity never to exceed)	84 mph	84 mph	84 mph	84 mph	84 mph	84 mph
V.man (never to be exceeded in very turbulent air)	70 mph	70 mph	70 mph	70 mph	70 mph	70 mph
Roll rate at 120% V min. (45°/45°)	3 s	3 s	3 s	3 s	3 s	3 s

III) Instruction for use

a) Assembling - Dismantling

- Open the wing bag, make sure that the A-frame is on top, and remove fastenings and paddings.
- Assemble the A-frame with the push-pin. Cables must not pass through the inside.
- Lift the wing from the front and rotate it so that the wing is laying with the assembled control frame flat on the ground. Carefully open the two half wings to their maximum extent.
- Slip the tensioning handle behind the foot of the king post by the opening in the upper surface, taking care not to twist the cables.
- Fit the nylon kingpost plastic head on top of the kingpost without entangling pitch lines.
- Fit the king post to the locating lug at the top of the keel between the two tensioning cables.
- Carefully slide the upper sail bent battens in their respective pockets and tension the sail by fastening the Easyfit tighteners.
- Pull the cross tube swan catch tensioner towards the trailing edge, then hook it to the rail screw at the keel tip. To ease the operation, carefully center the A-frame, ensure that the tabs and heat shrink coverings of the lower lateral cables do not get stuck in the sail opening at the cross tube/leading edge connections and that these steel tabs lay in the same direction as the control bar.
- Pull down the swan catch tension lever and fix it in the rail with the pushpin.
- Raise the nose of the wing and lift it on its A-frame. To avoid dragging the tips of the wing on the ground, it is recommended that a second person hold the back of the keel.
- Fix the front lower longitudinal cables in the rail under the nose plate with the help of the swan catch tension lever and the pushpin.
- Install the tip struts in the appropriate openings on the leading edge. Insert them all the way into their housings and rotate them until they block. Check that they are correctly blocked by pulling them towards the rear. Raise the sail for ease of access.
- Place the two straight battens of the wing tips on the plastic lug attached to the tube of the leading edge, and tighten the upper surface with the clasps. Attach the undersurface bungees by pulling them over the clasps.
- Close the fabric closures at the tips by means of their velcros.
- When connecting the trike, slip the security fastening cable through the loop in the security strap aligned with the front of the kingpost, behind the kingpost, through the loop again, and then fix it to the beam of the trike. The security cable should pass under the tensioning cables. This operation secures the trike as well as fastening the crossbar tensioning system.

Dismantling is carried out in reverse order of the assembling operations. The CORSET must imperatively be loose (set in the "slow" position) before dismantling.

Before setting the wing flat on the ground, insert the protective padding on the keel over the hang point bracket and on the right A-frame strut over the guides of the fine cord of the CORSET in order to avoid damaging the sail with these jutting parts.

Before folding up the two half-wings, slip the tensioning device lever under the sail *at the front of the kingpost foot* to avoid tearing any part of the sail or the frame while closing the leading edges.

⚠ *Never release the tension of the wing without first removing the battens of the wing tips which rest on the leading edges.*

b) Preflight-check

The wing preflight check will be easier if made before lifting the wing above the trike. The following is a brief summary of the minimum pre-flight inspection, which assumes that the scheduled maintenance checks outlined in the maintenance manual has been performed. If you are unsure, it does no harm to increase the number of items in your inspection in accordance with the recommendations of the maintenance manual.

1. Position the wing horizontally once coupled with the trike.
2. Visually check the symmetry of the two leading edges.
3. Check noses plates assembly, bolts, nuts, thimbles and Nicopress of the front lower longitudinal cables, swan catch correctly positioned, pushpin and wires attached.
4. Slide your hand along the leading edges to check for possible damage. Make sure the profile of the upper surface of the leading edge is free of deposits of raindrops, insects, snow or ice. Clean/dry if necessary.
5. Check the crossbar/leading edges connection, bolts, nuts, by unzipping the lower surface access. Check for correct fastening of lower flying wires and upper wires, also their condition, swages and thimbles. Check that the sail is not snagged on a metallic part. Close the lower surface access.
6. Check the fastening of the sail at the wing tips and the position lock of the two pivoting sleeves by means of the Parker screws.
7. Check the fitting of the upper surface battens and the closure of their tighteners on the trailing edge.
8. Check fitting and condition of the reflex bridles and their attachment to the sail.
9. Check that no upper cables are wrapped around the kingpost and that the luff lines are well positioned in the grooves of the pulleys at the top of the kingpost.
10. Check the thimbles and swages of the rear lower cables at the keel end.
11. Check the correct routing of the tensioning cables **on each side of the kingpost without crossing**. Check the tensioning system at the end of the keel, the nuts and bolts, the correct position and security of the push pin.
12. Slide your hand along all of the the lower cables to detect signs of wear.
13. Check that the lower cables are attached to the A frame, check the nuts and bolts, check the condition of the cables and their Nicopress clamps, and the push-pin of the control bar. All the cables should be loose enough to pivot in the direction of the tension. Close the leather cover webbings.
14. Check the assembly of the central junction of the cross tubes, the nuts and bolts, the cover webbing, the restraining straps of the keel, and the securing of the tensioning cables.
15. Check the hang bracket, the locking rings and positioning screws for condition (possible twist, cracks) and free pivoting movement.
16. Check that the safety cable of the hook is correctly positioned and fastened. It must pass under the tensioning cables. This system secures the fastening of the trike as well as tensioning of the crossbars.
17. Check that all zippers are closed, as well as the fabric closures on the wingtips by means of the velcros.
18. Once the wing is assembled on the trike, check the position of the hang point attachment bolt, its butterfly nut and security ring.

c) Flight specifications

WARNING:

This wing is not designed for aerobatics.

Respect of the flight envelope is imperative.

- Maximum Pitch attitudes 30° nose up, 30° nose down
- Maximum Bank angle 60°
- Aerobatics and deliberate spinning prohibited
- V.N.E. (never to be exceeded): 83 mph (135 km/h)
- Maximum Take-Off Weight 462 kg (1019 lbs)
- Acceleration limits +4/-0g ; positive "g" at all times
- Stalls authorized only in glide path with a progressive speed reduction and throttle to idle position.

Beyond these limits, some stability or control loss, structural failure or irreversible "tumbling" motions may occur.

Better handling will only be reached after about 10 flying hours and control during roll will be more difficult during the first flights.

d) Controls

– **Control bar:**
Pushing the bar forward causes the wing to pitch its nose up, which increases its angle of attack and decreases its speed. If you pull the bar towards you, you decrease the angle of attack and increase speed.
Roll control is effected from lateral movement of the control frame, and thus the center of gravity of the aircraft, and follows weight shift convention, i.e. bar left, center of gravity moves to the right, aircraft rolls to the left.
A separate yaw control is not provided. Like other weight shift aircraft, yaw is provided from the secondary effect of banking.

e) Flight Technique

Taxiing

Avoid turning sharply as this generates large amounts of torque and hence wear, transmitted to the pylon, hang point and keel. Always try to keep the wing aligned with the trike when turning by bracing the control bar. Turning circle on the ground is very small, but beware – wing tips stick out and can move around their arc very fast!

Take-off and landing techniques

Take-off is conventional. Keep the aircraft straight using the nose wheel steering. Allow the bar to float in the neutral position in pitch and keep the wings level. Let the control bar move forwards to obtain takeoff rotation. As the aircraft rotates, allow the control bar to move back smoothly and allow airspeed to build.

If taking off in calm conditions or from a soft field or from a field with long grass, the minimum take-off roll distance is reached by increasing rpm to full power with brake, then releasing the brake and pushing the

control bar fully forward. The control bar should be brought backwards immediately once the wheels are in the air to obtain a climbing speed ranging from 65 km/h (40 mph). If a performance take-off is not required then once the aircraft has rotated allow the bar to move back smoothly, adopt a shallow climb attitude and allow the airspeed to build to a safer low-level climbing speed of around 70 km/h (43 mph).

The landing is conventional. Maintain the approach speed until 8-10 foot height, then flare out to make a smooth touchdown. Braking may be used once all wheels are on the ground. A short landing requires a slow approach speed in the range of 70 km/h (43 mph) and a flare out a few feet above ground. Brake and pull the control bar to the maximum in order to obtain more aerodynamic braking once the rear wheels have touched ground. If conditions are gusty or a strong wind gradient is suspected, use a higher approach speed value.

Turning

The iFun wing is very well-balanced in the turn and is capable of high rates of roll with modest control forces. Roll rate is proportional to both airspeed and wing loading. Fastest roll rates will be achieved at light weights and high airspeed. Conversely when flying at high weight and low speed, maneuverability is reduced. Ensure that the runway is long enough for take-off and that no sudden maneuvering is required to avoid obstacles early in the climb, when speed may be low.

Turns at bank angles up to 60 degrees are permitted. To balance the turn at this bank angle, forward bar movement is necessary to generate the required lift for level flight and increased power is required to overcome drag and maintain airspeed. Under these conditions substantial wake turbulence is produced. For turns of over 45 degrees of bank it is recommended that a heading change of no greater than 270 degrees is used, in order to avoid entry into the wake turbulence and a possible excursion outside the permitted flight envelope. With a high loading and low cruise speed adjustment, it may be necessary to increase the speed before the wing is put into banking to avoid stalling the lower wing. An increase in engine power is also advised to maintain the flight level during the turn.

Stalling

The stalling point is reached more easily with a backward hang point position. Once the stall angle of attack is reached, the control bar starts pushing back forcefully and some pre-stall buffet may be felt in the form of pressure bumps. Avoiding any resistance to this tendency for a short while allows the wing to return to correct speed. In that case, the loss of altitude will be less than 10 m. (33 ft). If the control bar remains extended despite the warning signs, the wing will stall and the loss of altitude may reach 30 m (100 ft). An asymmetrical start on one wing is possible, particularly during the running in of the sail (first 50 flying hours).

Nose high pitch attitudes generated prior to the stall break will lead to high nose down rotation rates. In common with all flexwing aircraft, extreme examples of this can result in tumbling motions, loss of control and massive structural failure.

⚠ *To avoid risk of tumbling, stalling exercises must imperatively be carried out with the engine at idle, with a very slow decrease in speed (less than 1kt/sec) obtained by progressively pushing the control bar out.*

Pilots should also be aware that as with all aircraft, overloading with baggage/heavy occupants will increase stalling speed, as well as the usual drawbacks of reduced performance, maneuverability and structural safety margins.

Behavior in strong wind:

Once grounded and motionless

Park the aircraft perpendicular to the direction of the wind, with its windward wing lowered and the tip of the leading edge rests on the ground, block the A frame on the front tube of the trike (using for example the Velcro used for packing the battens of the sail), block the park brake and put chocks under all three wheels. Take the wing off the trike and put it flat on the ground windward, if the aircraft is not going to be used immediately.

Ground-runs

Keep the sail flat into a headwind. Push the control bar against the trike front strut with a tailwind. This will avoid flipping. With a side wind, be careful to always tilt the wing so that the windward edge is slightly lower than the rest of the wing. It may be difficult to hold the A-frame in its position. Never let the wind lift the wing up.

Take-off and landing

As ground run distances are considerably reduced by strong wind, try to face the wind. Perform take-off and landing maneuvers at greater speed than you would normally do, in order to diminish the drift angle and counter the effects of the gradient.

Crosswind Take-off

Start the take-off run with the windward wing very slightly lowered. Hold the aircraft on the ground by holding the bar slightly back from the neutral position. Keep to the axis of the runway with the front wheel control without considering efforts on the sail. Allow airspeed to build to a higher-than-normal value then rotate positively into a shallow climb attitude. Keep the wings level and allow the trike to yaw into the relative wind. At this point adjust the drift angle if required to maintain runway centerline, and proceed as normal.

Crosswind Landing

Crosswind landing limits are largely dictated by the skill of the pilot. Make sure that you have lots of experience before attempting crosswind landings with components in excess of 8kts.
General technique should be to fly the approach maintaining the runway centerline by setting up a steady drift angle. During the final stages of the approach use a higher-than-normal approach speed to minimize the drift angle. Round out slightly lower than normal and aim for a short hold off, so that the aircraft lands smoothly, back wheels first with the control bar at or only slightly forward of the neutral position. The contact between the back wheels and the ground will then yaw the trike unit towards the runway centerline at which point the nose wheel can be gently lowered to the ground. Once all wheels are down the windward wing can be lowered slightly. To ensure maximum directional control during rollout from a crosswind landing the recommended technique is to move the bar back after landing and apply light to moderate braking. This eliminates any tendency to bounce and ensures good contact pressure between tire and runway surface. This technique of applying aerodynamic loading to increase ground pressure and hence braking efficiency during landing roll is also appropriate for short field landing.
Remember that crosswind landings on grass are considerably easier than on hard surfaces. During crosswind landings a lot of torque is carried through the structure which results in excessive wear to the hang point and attached structure. Always try to land into the wind if possible. If crosswind components are in excess of 15 knots then only a small windward distance will be required for landing – across a large runway for example.

Flight in Turbulence

Compared to other flexwing microlights, the iFun handles turbulence very well. However in common with all microlight aircraft, care must be taken in turbulent conditions, particularly when close to the ground. As previously stated high airspeed will enhance maneuverability in these situations. However if conditions become severely turbulent with hard jolts being transmitted through the aircraft, it is recommended that you do not exceed the maneuvering speed Vman. VNE should only be reached in smooth conditions.

In strong wind conditions, avoid flying on the downwind side of large hills or other obstructions. When landing in strong crosswind conditions, remember that low-level turbulence will be produced by obstructions on the upwind side of the runway. Always try to assess areas of possible lift, sink or turbulence from some distance away so that you can be fully prepared for their effects.
At high altitude the best way to minimize pilot workload and physical fatigue is to fly the aircraft while trying to let the control bar float through turbulence. Use your arms as dampers and try not to rigidly fight the movement. Close to the ground, where accurate control is required, the displacement of the aircraft in turbulence can be reduced by bracing the control bar relative to the structure of the trike unit. This then transmits to the wing the pendulum stability of the trike mass. However the pilot must be ready to make any necessary corrective control inputs.
Smooth flight in turbulence in a flexwing aircraft is a skill that is learned with time and experience.
Please remember the old adage: "It is better to be on the ground wishing that you were in the air, than in the air wishing that you were on the ground!"

Rain, ice and snow

⚠ *Any form of wing surface contamination such as ice or snow will result in increased stalling speeds and reduction in overall aircraft performance, sometimes to a drastic extent. Never take off with such contamination present. If these conditions are encountered during flight, attempt to leave these conditions as quickly as possible. If this is not possible the aircraft should make a precautionary landing as soon as it is safe to do so. During this process avoid flight at low speed and expect poor aircraft performance.*

IV) MAINTENANCE

a) Adjustments

In General:

Your wing was delivered with the optimum settings.

If you feel that the wing requires adjustment to trim in the roll or the pitch axis you should check that the problem is not caused by something asymmetrical in the frame or the battens. In order of priority check the following:

- Check that the rotating sleeves at the tips are correctly positioned and blocked by means of the self-taping screws.
- Ensure that the wires, especially the reflex bridles are correctly routed.
- Check the battens profile.
- Check that the leading edges are straight and that the rear parts are located correctly.
- Check that the keel is straight.

After checking as outlined at the beginning of this section an adjustment can be performed by the following methods:

⚠ *Never change the length of the reflex lines.*

⚠ *Never alter batten shape except to match the batten profile drawing.*

The reflex lines are designed never to be adjusted, and their primary effect is for stability **outside the normal flight envelope**, so adjustment for flight within the envelope is pointless anyway.

The batten shape is intrinsic to stability, stall behavior and handling. Some aircraft require batten shape adjustment to correct for turns. This is not necessary for Air Creation wings.

⚠ *The tuning of a flexwing requires special training and regular practice. We offer hereunder global effect of the main means of tuning, but their application is delicate. We therefore recommend that you solicit the expertise of an Air Création Technical Station or the factory itself if you wish to modify the tuning of your wing!*

Hang point position

Centering adjustment is done by moving the hang point on the keel. The locking rings of this part should be positioned according to the desired centering (3 positions). The cruising speed at natural trim increased by about 8 km/h (5 mph) if the hang point is moved forward and vice versa. Each position may be used, the only effect is alteration of the cruising speed once control has been released, without any repercussions on stability and performance.

For the first flights the hang point should be left in its original position, intended for ease of handling.

Warning: Any alteration of centering means a variation of the A frame tilt and therefore modification of the lower longitudinal cables' tension. There are various adjustment holes in the cables fixation rail at the nose of the wing, so as to allow them to keep a correct tension whichever the adopted position of the hang point may be. When the position is in the middle, the blocking screws of the tensioning swan catch of the cables should be in the 2nd hole from the back of the rail. The first hole should be used when the position is in front, and the 3rd hole when in rear.

Tension of the sail on the last battens of the wing tips.

It is easy to adjust the symmetry of the wing by differentially adjusting the tension of the sail on the last batten wing tips (those that rest upon the plastic lugs on the leading edge). To do this, simply rotate the plastic tip of the batten which is fitted with a thread. Increased tension raises the trailing edge of the wing tip under consideration and reduces its lift. Decreased tension has the opposite effect. Action should be taken in small corrections (1 turn on the tip batten) and simultaneously applied in opposite directions on each side (+1 turn right, -1 turn left, for example). Check the results and increase the adjustment if necessary.

Symmetric tuning of the tension of the sail on the last wing tip batten leads to a change in hands-off cruising speed. Increasing tension leads to a slowdown, reducing it leads to a speedup. The maximum tension allowed is obtained with 6 turns of tension on the batten tip, the minimum is 0 turns, standard setting is 3.

Pivoting sleeves at the end of leading edges

The swivel sleeves were preset during the first factory tests of the wing, according to the torque of the trike's engine, and they are locked in position by a Parker screw. This position can be checked by means of the positioning mark on the sleeve, which corresponds to a mark (0, +2.5, +5, -2.5, -5) on the scale stuck on the end of the tube. A further correction is possible if the modification of the tension of the last batten wing tips described in the preceding paragraph has not lead to the desired trimming (in case of adaptation to a trike equipped with an engine whose torque is different, for example). Their differential rotation can be used to correct an asymmetry of the wing. The result is comparable to that of the ailerons on a conventional aircraft - lower the trailing edge produces more lift and raising it produces less.

For a wing with a left tendency, remove the self-tapping screws placed on the inside of the leading edges. Turn each sleeve clockwise to achieve the next values (+2.5 on the right, -2.5 on the left) by forcing on the fabric. After the adjustment, reassemble the screws, the battens, and the Velcro of the fabric closure. If the correction is insufficient for a perfect tuning of the wing, repeat the process until you reach the correct adjustment (maximum allowed: 10 mm difference right/left). Always rotate to the same value the sleeves of each half of the wing. For effective flight operation, do not change the tension of the sail on the last wing tip batten.

If the wing has a right tendency, the left sleeve should be rotated by 2.5 mm counterclockwise (towards +), and the right sleeve by the same value in the opposite direction, 2.5 mm counterclockwise (towards -).

Pivoting the sleeves can also be used to fine tune the cruising speed. A joint rotation of the two sleeves of 2.5 mm upwards (towards +) slows the wing down by 5 km/h and speeds it up by 5 km/h for a 2.5 mm rotation downwards (towards -). The usable range adjustment is limited to +2.5 and -2.5 mm. Beyond these limits, performance and stability of the wing may be affected and unsightly wrinkles may appear on the fabric of the wing tip.

Tension of the Sail

The tension of the sail at the end of the leading edges may be modified to counteract the effects of aging on the sail, and improve its performance. This action is not to be considered before a minimum of 300 hours of flight.

To make this adjustment, remove the tip fins, battens and the protective cap of the wing tip and rotate the screw at the end of the sleeve with a 10mm wrench. Replace the cap, then adjust the tension of the sail on the last straight batten of the wing tip due to changes in the position of the sail on the leading edge tubes (the same value of increase in the length of the batten as the increase in tension on the leading edge). Tighten up to a maximum of 5 turns (5 mm) and check by test flight. The cruising speeds will be increased by about 3 km/h for 5 mm of additional tension but handling in roll will be slightly reduced. The maximum allowed is 30 turns (30 mm) of total tension. The standard factory set tension of the new wing is 20 turns (20 mm). The minimum allowed is 15 turns (15mm) of total tension.

Tension of the sail on the removable battens of the upper surface

The tension of the sail on the upper surface battens may be modified to counteract the effects of aging on the sail, and improve its performance. This action is not to be considered before a minimum of 300 hours of flight. To adjust the tension, simply rotate counterclockwise the plastic tips of each batten. A retensioning of 2 turns generally provides the desired effect. The cruising speed will be increased by about 1 km/h per tensioning turn but handling in roll will be slightly reduced.

Tension of the crossbar cables

The tension of the crossbar tensioning cables may be modified to counteract the effects of aging on the sail, and improve its performance. This action is not to be considered before a minimum of 300 hours of flight. To do this, just move the screw that positions the tensioning swan catch back one hole on the rail at the end of the keel.
The cruising speeds will not change, but handling in roll will be slightly reduced, while aerodynamic performance will be improved.

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b) Rigging the wing when folded in 4 m:

This procedure must be followed if the wing is delivered folded in a crate. The rear of the leading edges have been dismounted in order to reduce the size in transport.

The correct assembly of the wing is critical for safety and performance. If you have any doubts as to the correct procedure for assembly after shipping, please contact the Air Creation factory.

1. Remove wing from box. Take care that no staple damages the bag or the sail during this operation.
2. Unzip bag
3. Remove all wing straps. Remove padding from control bar and rear leading edges.
4. Unfold the ends of the sail
5. Assemble the control bar on the revolving base fixed to the left A-frame strut with the **screw CHC 6-40-12**, washers, Nylstop nut, Loctite 243 Threadlocker glue and with the push pin on the right side. Close the leather protections.
6. Rotate the wing so that it is lying flat on the ground
7. Spread both leading edges approximately ½ meter (1.5 feet).
8. Insert rear leading edges in the tip openings of the sail with the plastic lugs at the rear of the tubes positioned horizontally and to the inside. Note the indications "Right" & "Left" on the tubes.
9. Finish sliding the rear leading edges in the front part. Turn slightly and push in order to line up the slot in the tube and the horizontal bolt connecting the crossbar on the front part of the leading edge. Make sure that the plastic lugs at the rear of the tubes and the openings for the tip struts at the rear of the tubes are face-to-face. Push in order to complete the insertion. It should be impossible to rotate the leading edge, if correctly assembled.
10. Attach the sail to the tip sleeves with 4 **screws FHC 6-75-13.** Note the indications "Right" & "Left" on the tubes. Make sure that the aluminum guide that allows the setting of the sail's tension is facing the slot in the sleeves, at the end of the leading edge. To make things easier, use a screwdriver to line up the sail with the foremost drilling and slide the screw in the back. Remove the screwdriver to insert the screw in the front. Apply the Threadlock glue to the nuts and tighten the Nylstop bolts.
11. Gradually open the leading edges to the maximum, while checking that the lateral cables tighten correctly at the ends without loops nor blocking the neoprene openings in the sail. Proceed in small steps, returning to the nose of the wing to pull the sail forward and insure that the central battens remain in the right position on the screws of the leading edges. Return them to their place as necessary.
12. Unfold the wing as described in the pilot operating hand book. Do not assemble the last straight battens at the ends of the wing.
13. Each wing tip should now be tightened by means of the tensioning **screw HM 6-45** placed at the end of each sleeve of the leading edge. The final position should line up the fabric of the end of the leading edge of the sail with the line drawn on the tube. Standard tuning is 20 turns but factory tuning may have been done differently after test flights. Turns are counted from the stop in front of the port, as soon as the tightening of the screw begins to have an effect. Each turn represents 1mm of tension in the sail. After tuning, reassemble the **plastic caps** at the ends of the tubes.
14. Check that the rear parts of the leading edges and their wing tip sleeves are assembled on the right side of the wing as indicated by their marking Right/Left.
15. Check that the sleeves are pivoted right as indicated by the mark on the scale sticker and blocked by their self-tapping screw. Absent a specific indication, the standard tuning is at the level of the 0 on the scale.
16. Complete assembly of the wing as indicated in the Pilot's Handbook.

⚠ *A thorough and complete preflight check, as detailed in the Pilot's Operating Handbook, is especially necessary after reassembly. Pay special attention to potential damage in transport. Thoroughly check all nuts and bolts, wire routing, sail fit, Mylar shape and overall symmetry of the wing before flight.*

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c) Transport & Storage

Avoid damage to your wing by using well padded racks. Careless transportation can cause considerable damage to your wing.

We recommend that you support the wing in at least 3 places or to use a ladder to spread the load. Flat straps should be used for tie downs to avoid damage to leading edge Mylar.

Store the wing in a dry room off the ground. Air the wing out regularly to avoid mildew, and never store wet.

Inspections & General Maintenance

This section sets forth each mandatory replacement time, structural inspection interval, and related structural inspection procedure required.

The time limits and maintenance schedule provided are in addition to any regulation of the governing body where the aircraft is flown.

The pilot of the aircraft must ensure that the required maintenance is carried out and documented in the correct manner.

Lifespans

Extreme operating conditions and any extreme loads will reduce the time limits for components and the fatigue life of the airframe. The fatigue life of these components is dependent upon rigid adherence to maintenance schedules.

Air Creation will from time to time amend these maintenance checks as the service history of the aircraft evolves. It is the responsibility of the pilot to ensure compliance with new directives. (Information is available on the website http://www.aircreation.fr).

The following components are time limited and should be overhauled or replaced as indicated. This table may be updated to include more components in the future as airworthiness directives are amended.

Lifespan of Wing Components

Component	Life
Control frame and cross tubes	On inspection, no fatigue limit
Leading edges	900 hrs
Keel	1500 hrs
Rigging wires	600 hrs
Roll bracket	1500 hrs
Bolts/screws	300 hrs
Hang bolt	300 hrs

d) Wing Maintenance Schedule

Item	Maintenance Requirement	Hours of Operation					
		50	100 1 yr	150	200 2 yrs	250	300 3 yrs
Wing Sail	Wing fabric deterioration and tears		2		2		4
	Wing fabric stitching condition and abrasion		2		2		2
	Wing fabric attachments points	2	2	2	2	2	2
	Attachment of the keel pocket and the retaining strap at the rear of the keel		2		2		2
	Straps retaining luff lines on the upper surface		2		2		4
	Condition of tension straps on batten clasps		3		3		4
	Condition of Velcro strip closures at wingtips						4
	Wing fabric sample factory test						2
	Sail removal for general overhaul						4
Wing Airframe	Profile of removable battens of the upper surface		2		2		2
	Profile of the central upper surface batten						4
	Batten clasps		3		3		3
	Wires and attachment fittings for tension, corrosion, fraying, kinking or fretting	2	2	2	2	2	4
	Condition and security of all screws, bolts, nuts & washers	2	2	2	2	2	6
	Condition and operation of all push pins	2	4	2	4	2	4
	Outer part of leading edges		4		4		4
	Keel, cross bars, and visible tubing	2	3	2	3	2	4
	Hang bracket for condition, deformation, cracks	2	3	2	3	2	4
	Main hang bolt	2	4	2	4	2	6
	Nose assembly, U-channel and cable gooseneck catch for condition		3		3		4
	Tensioning u-channel and cable gooseneck catch for condition		3		3		4
	Central cross-bar assembly, protection and webbing for condition		3		3		4
	Cross-bars to leading edges assembly for condition		3		3		4
	Condition of wing tip tensioning device		3		3		4
	All rig/unrig parts for condition and operation		3		3		4
	All airframe tubing for cracks, dents, deformation, corrosion or fretting						4
	All airframe fittings for cracks, dents, deformation, corrosion or fretting						4

Code:

1. Oil, lubricate, clean and service
2. Check as directed
3. Check for security, cracks, wear and faulty operation
4. Remove, inspect and replace if necessary
5. Recommended replacement or overhaul
6. Mandatory replacement

PERIODICAL OVERHAULS BOARD

Serial number: .....

Date	Hours flown	Company which has carried out the overhaul Address and stamp

PERIODICAL OVERHAULS BOARD

Serial number: .....

Date	Hours flown	Company which has carried out the overhaul Address and stamp

Notes

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WING – QUALITY FORM

Anxious to ensure the perfection of our products, we have set a sequence of controls covering all the steps of production. We are working continuously on their improvement and we are in need of your help.
Please return this reply form accurately filled if you find any mistake or problem concerning your trike, which could affect its quality or finish, even if it is a minor one.

Your name, address and telephone number:

.....

.....

Type: .....

Delivery date: .....

Wing serial number: .....

Colors of wing: .....

Distributor: .....

Hours flown: .....

Problems noticed: (explanations and / or drawing)