

Aeros Gyro II 6/0 / 9.5 Parafoile depowered

Specification

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Safety system of Aeros Gyro II

Kite construction

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Individual kite tunings

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Take off

Turning the kite on spot

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Maintaining direction of the motion, turns

Changing direction,

Motion against the wind

Reverse launch

Landing and packing

Storage and service, repair recommendations

Application: snow kiting, buggy, mountain board.

Technologies:

- high tenacity edges Darcon 140 g/m
- all seams inners and doubles;
- substantial edges of holes flowing;
- system of the diagonal nervures

Materials:

- the main textile Porcher Marine New Skytex NCV 90/7 40 g/m;
- reinforcements Dacron TM Polyant ;
- lines with elastic impregnate pre-stretched(Cousine Trestec);
- nylon cottons Barbour ;
- metal pulles.

Standard set:

- kite GYRO II (6.0 / 9.5 / 12.5);
- bar ("depower") with chicken loop;
- color lines 250 kg dyneema 4*25m;
- leash of safety system;
- repair set (self-stick rip stop + scrap of main textile);
- bag.

Safety rules

Kite surfing is an amazing sport. But without proper skills it can cause in serious injuries both of your health and of health of spectators. It is recommended to learn kite surfing in the kite schools, with private teachers or with experienced pilots. First skills of piloting you can receive on the small piloting kites, (for example XAN), and only after that you can start to open up the big kites. You can't use only this manual as a manual for studies.

1. You have to determine correct by the wind conditions. Open up the kite on the wind not more than 5 m/sec. For precise determination of the wind speed you can use anemometer and the dates of the forecast.

2. Don't forget about protection: helmet, warm gloves, for snowboarders additionally: elbow-caps, kneecaps and safety shorts.
3. For riding you can choose places without any obstacles: fields and frozen reservoirs, which covered by the sufficient layer of snow.
4. Keep away from the electrical lines, bridges, littoral buildings, underbrush of trees, icy cracks.
5. Do riding always in the company. Even if the kite is one for all, the help for launch and landing will be very useful. Use the portative radio station for connection.
6. Secure the kite while preparing for start and for packing. To secure kite use a small ice bore from the alpinist equipment.
7. Be attentive on the start place. Spread out the kite so thus during the launch you won't damage the kite and the lines of another kites.
8. Take care of lines of your kite that they don't touch the people. The stretch line is dangerous!
9. Don't use damaged or wear out lines, change them.
10. Untangle the lines with gloves, for that your assistant has to hold the kite. You can put some snow on the kite or press it with bag, but you can be sure that It won't be fly away because of the wind blow. If entangle of the lines is complicated, always disconnect the lines from the kite.
11. Always put on the safety leash and periodically train to use safety system.
12. Before take off – open the Velcro which secures the release loop in the transport position.

Safety system Aeros Gyro II

If you foresee the dangerous situation or stop control the kite, pull the release loop for opening the lock of chicken loop. On that way you can disconnect harness from the main line. The kite will be connected to you only by means of rear lines, breaks and leash. Kite will land by itself.

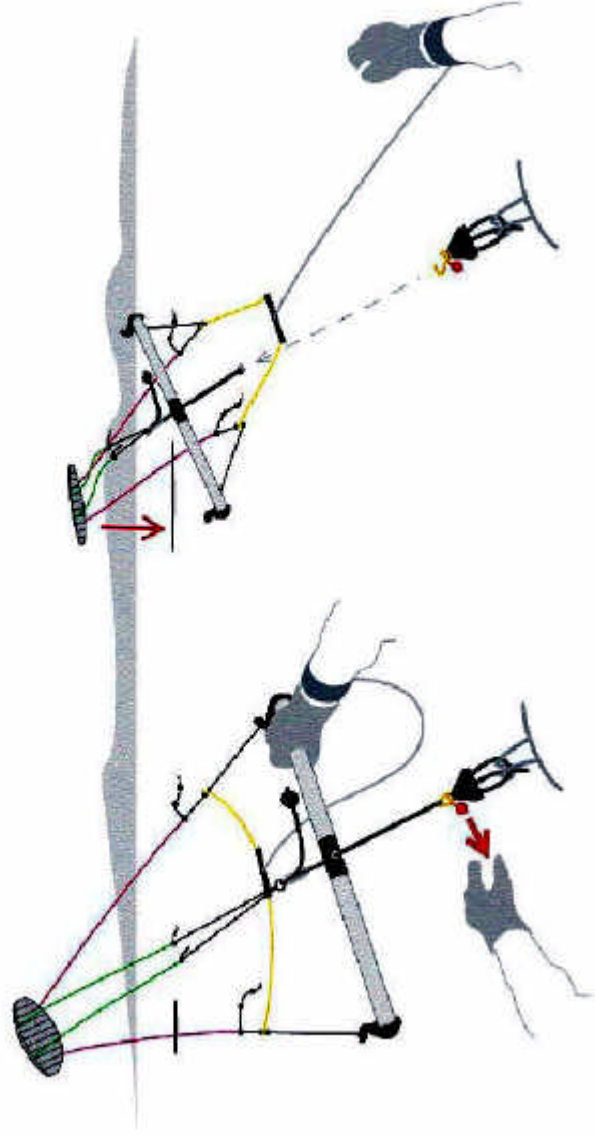
Attention! On the wind's blows and strong wind the rest tracking will be significant even if the main line is disconnected. On the worst case disconnect the leash.

For re-launch the kite, close the chicken loop lock: kite is ready for new launch **(pic.1)**

During connection of chicken loop and lock, hold safety cross line of the kite for prevent casual lifting before launch. On the strong wind change the kite for the kite of smaller area or refuse from riding.

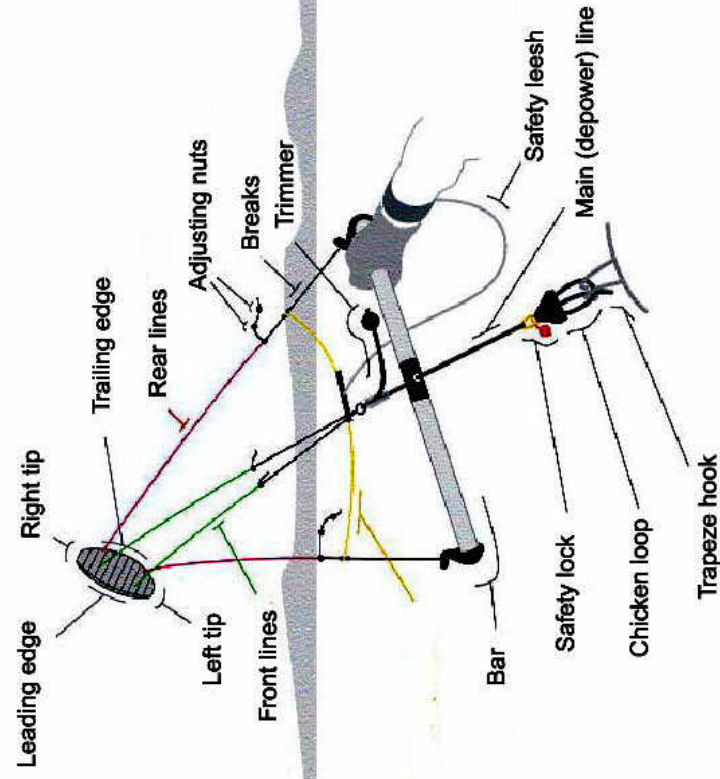
1. Safety system

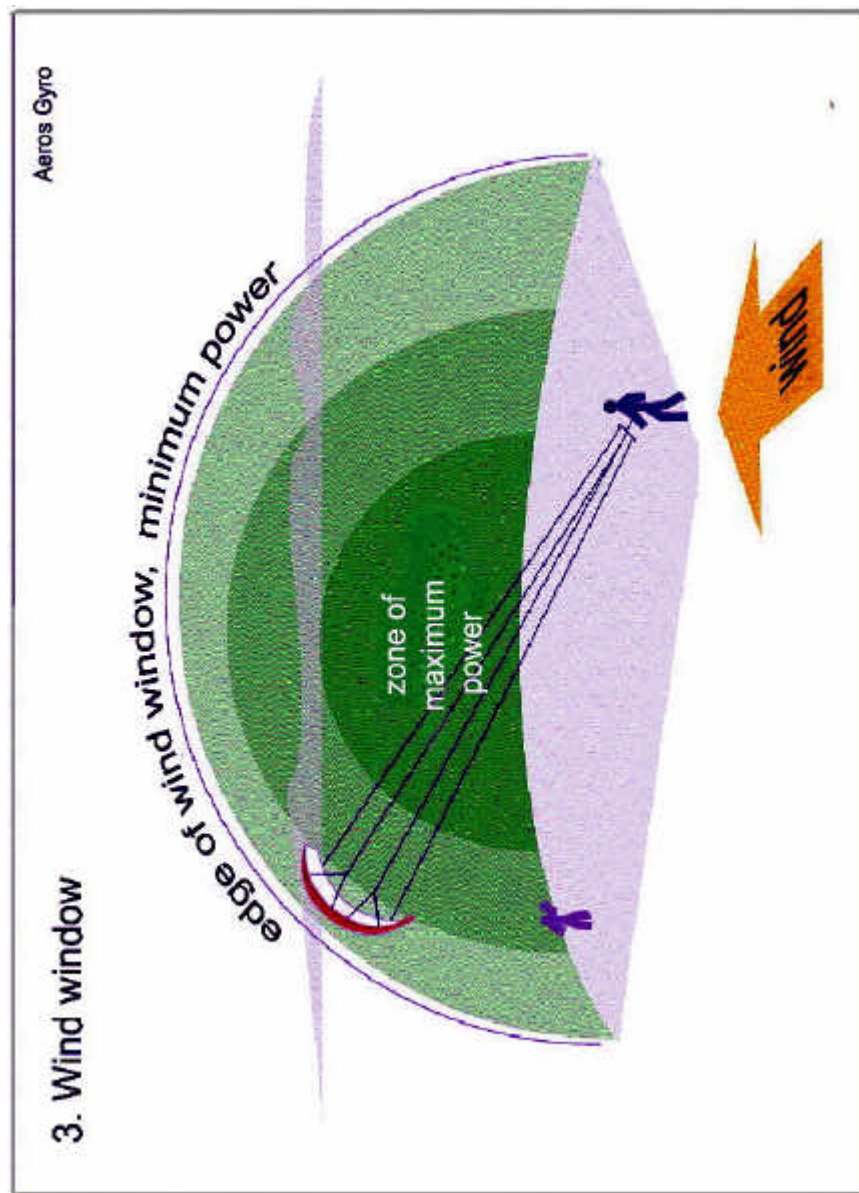
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2. Kite design. Main terms

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System of tracking regulations (depower) and Range of wind

The system of the traction adjustment (depower) Aeros Gyro 07 allows to use the kite of the same area on the wide range of wind. The principle of the system operation is changing the angle of wing mounting (**pic.4**) to the axis kiter – canopy . to change the angle of attack. For this you can use trimmer and bar that supplementing each other. By means of trimmer we fixe the wing on the required position and with the bar we can regulate angle (tracking) near this position. Tightened “pulled” trim kite work better on the upper wind’s range, with the “release” trim – on the lower wind’s range.

		Wind speed, m/sec		
area	kiter's weight	min	optimum	max
12,5	75kg	2	3-6	8
9.5	75kg	3	4-7	9
6.0	75kg	5	6-9	11

If your weight is differs to smaller side, the range must be reduced slightly and on the contrary – if you heavier, the range should be slightly moved up.

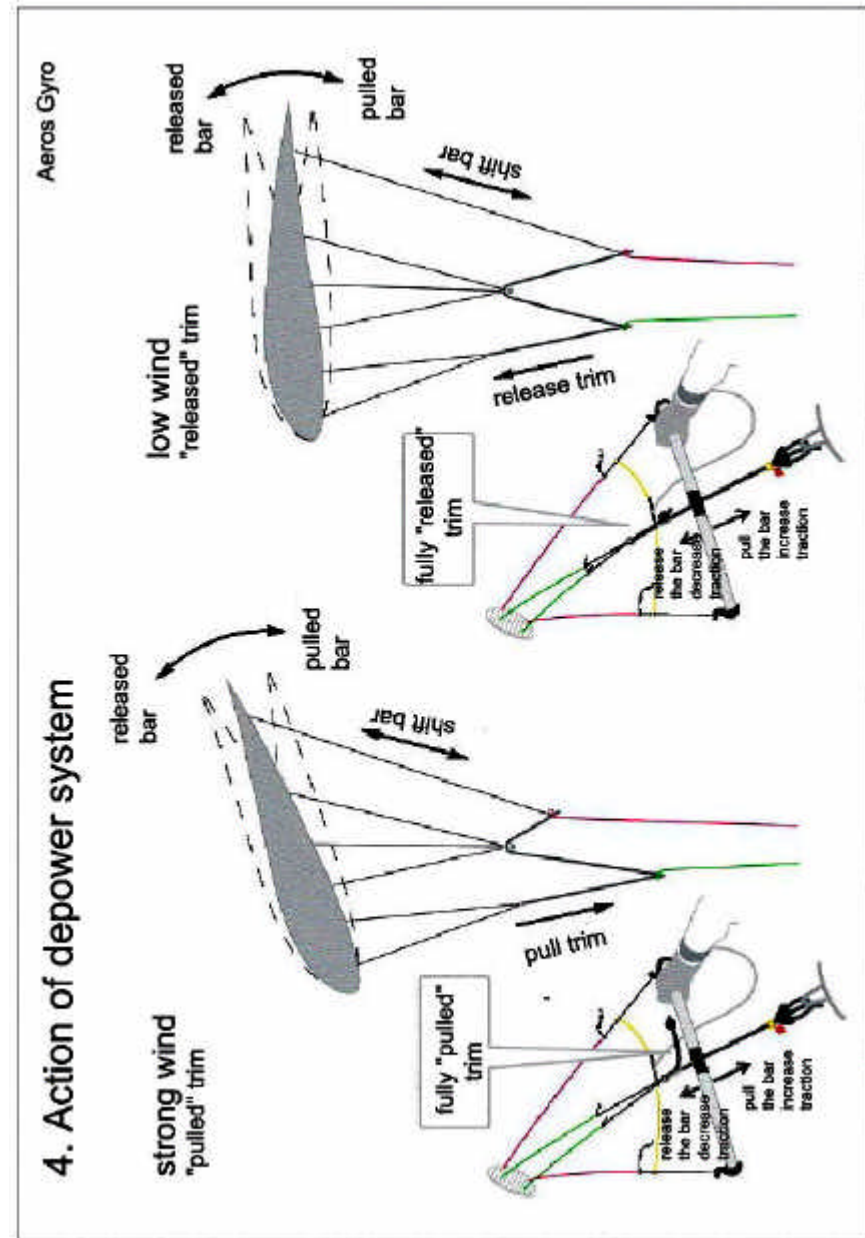
For the strong wind use the kite of smaller area. If you don't control the traction and don't manage to the kite, take kite of the smaller area or reduce from the riding. Check range of the wind conditions during the riding and always be ready to use safety system!

Individual tuning of kite

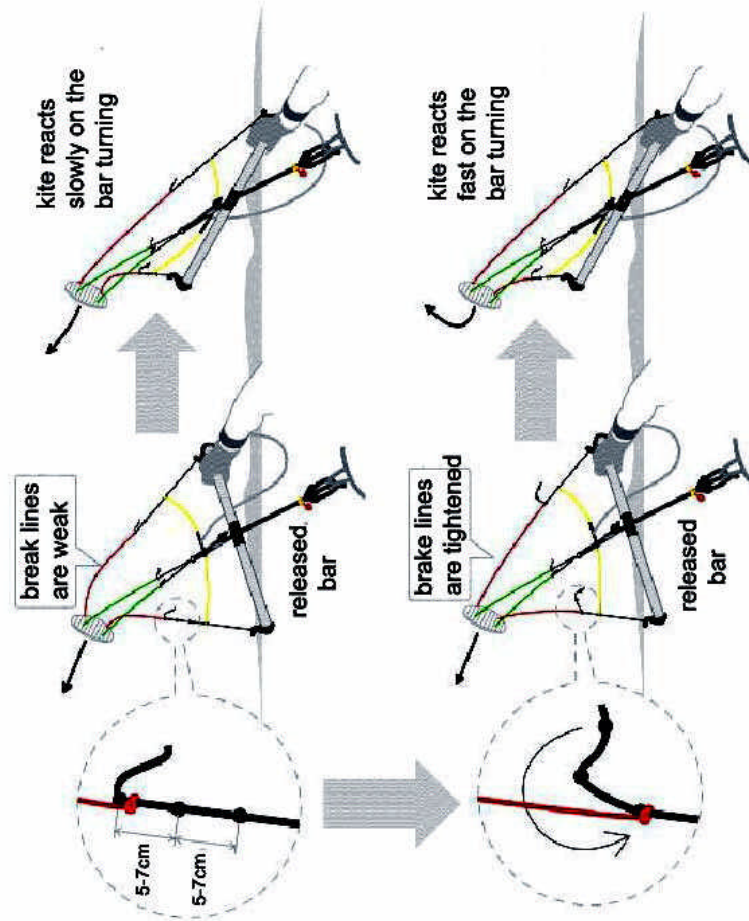
For the kite tuning use 2-3 supplement adjusting nuts on the breaks. You can tie the nuts on the distance 5-7cm apart by yourself. Fixing rear lines on the different nuts, we tune the kite's reaction on the shift and turning of the bar. This tuning is individual and sort out according to your value of the kite's reaction on the actual wind's conditions. For example, if on the slow wind the lines are not on the nearest to you nuts - reaction of the kite will be normal. In a strong wind kite reaction will be rapid. It's important to know, that by this tuning (on front nuts), upper edge of wind window is lower. That's why before the riding on the strong wind the rear lines you have to throw on the front nuts. At that rear lines won't be tightened and won't be weak. Reaction of the kite will be normal already for the strong wind. This tunings is better to install on the beginning of the riding.

With the strengthening of wind during the riding use a trimmer to temporarily change kite reaction and trust. Though we shift the effectiveness of the kite into the upper wind range.

How to check the tunings? In the normal wind conditions, launch the kite on spot. On position "release" bar, rear lines don't have to be tightened and don't have to be weak. With the weak lines, kite turns slower. Watch for the kite's reaction in the air. At the normal tuning it has to react on the tuning of bar without delay (**pic.5**). In conclusion: move the kite to zenith; release the bar – under not big loading on rear lines the bar has to stay on the upper position. If the kite flies behind you, it means that the rear lines are weak. If the kite doesn't reach zenith - the rear lines are tightened. At the normal tuning the kite stabilized in zenith and it needs only slight control with the bar.



5. Kite tuning. Low wind



Preparing to the launch

Measure the speed and determine the wind direction. If the wind is lower than the middle of the wind's range, you can prepare for launch both from the edge of wind's window and from the power zone. During the strong wind you can launch only from the edge of wind window. The help during the launch is preferable. Choose the start direction. According to the actual wind conditions, spread the kite, leashes and skies (board).

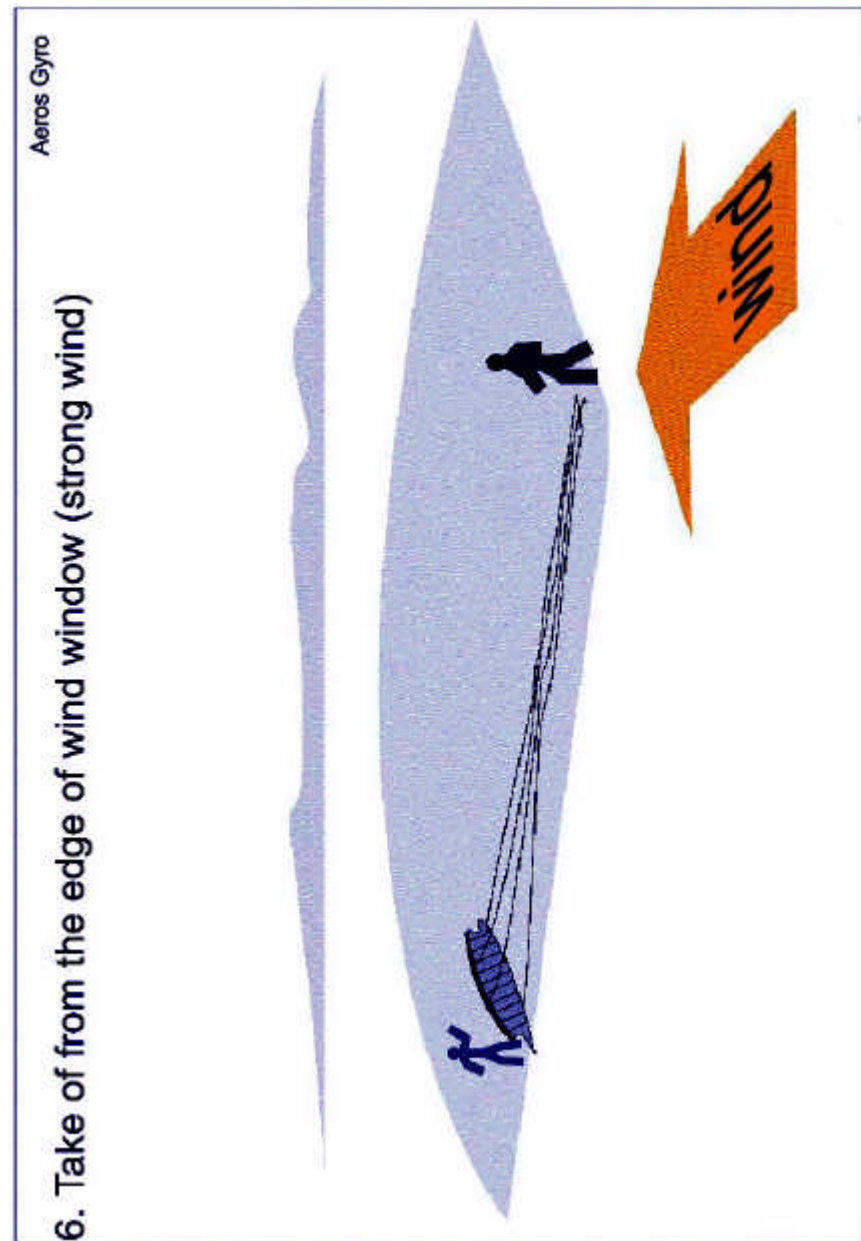
If you start from the edge of the wind window, the line "lines – kiter" is by the angle of the wind, trailing edge direct to the kiter (**pic.6**).

If we launch from zone of power, the line "lines – kiter" is by the wind – rear edge towards the wind, leading edge from the wind. (**pic.7**).

With the middle and strong wind, the tips we can remain a little bit collapsed –the launch kite will be filled gradually and won't drag you from your place. If you launch without assistant, to prepare the kite you can temporarily press it with the bag and put the snow on the edges. The medium wind you should not secure the kite, but you have to be sure that the kite won't fly away because of casually wind's blow.

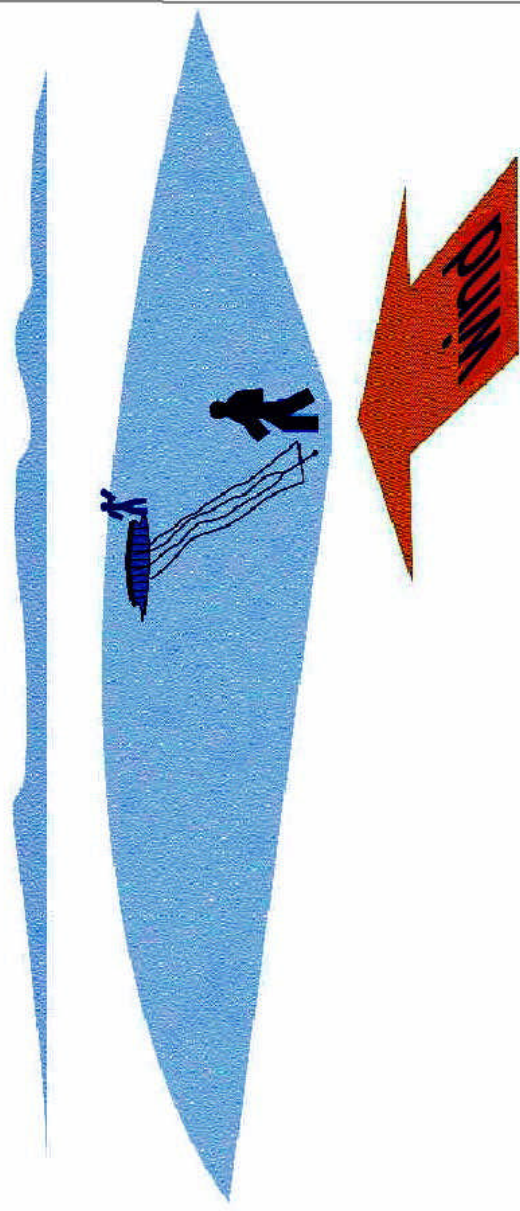
- 1) Remain rolled canopy on the snow and go away from it, unwind the lines.
- 2) Check condition of the lines, untangle if necessarily.
- 3) Twist to the ice the ice bore, attach the safety cross line on the ice bore.
- 4) Return to the canopy. You can check the lines.

- 5) At first connect the rear lines. The scheme of connection of lines is on the **(pic.8)**.
- 6) Spread the canopy so that it will lie bottom to the top with the lines upwards.
- 7) After that check and untangle suspension system of lines.
- 8) Connect forward lines. The scheme of connection of the lines is on the **(pic.8)**.
- 9) Return to the bar (don't forget the bag :-).
- 10) Put on the skies (board), stand back to the wind, turn the skies at the small angle to the kite and to the direction of the beginning of moving **(pic.9,10)**.
- 11) Put on the safety system to the wrist or to the basis of the hook. At that you can take safety cross line from the ice bore.
- 12) Take the bar in the arms.
- 13) Connect the chicken loop to the hook of harness.
Attention! Now the kite can start to rise. It hold the kite drag the breaks to you with the safety cross line and release it for the launch.



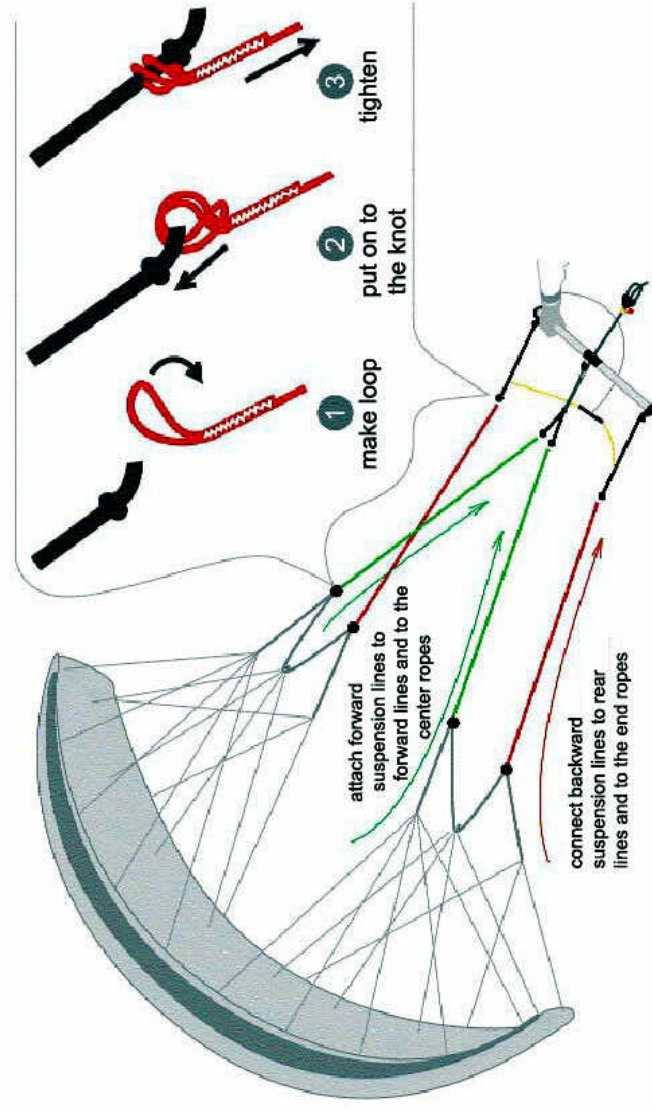
7. Take off from the center of wind window (low wind)

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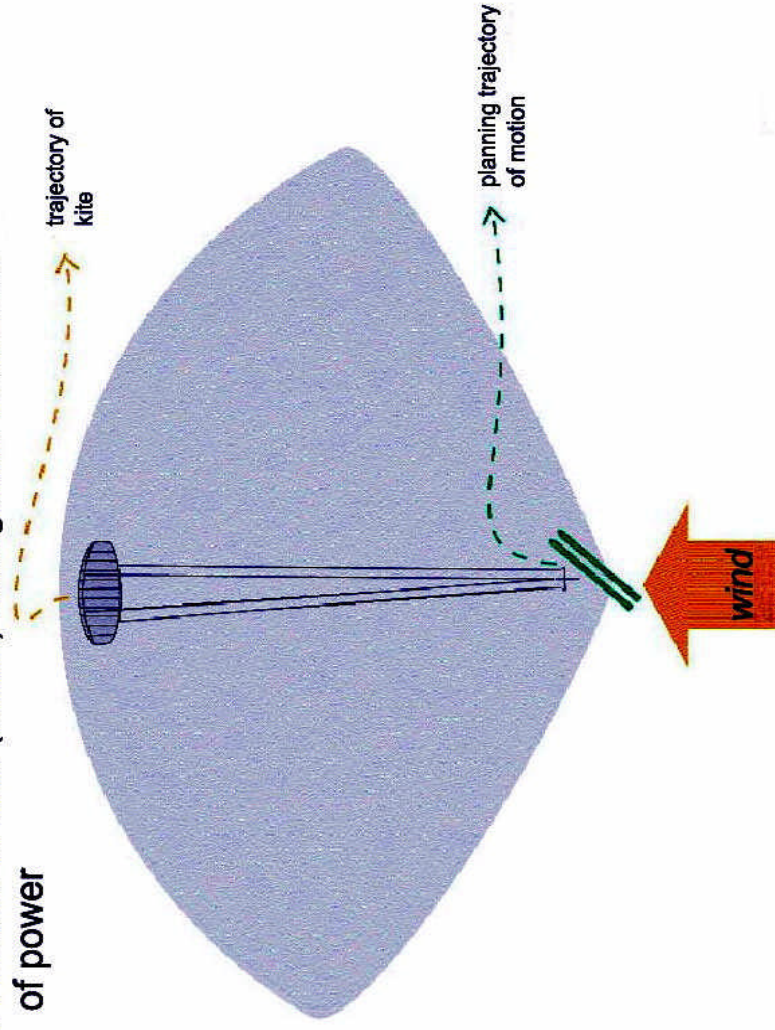


8. Kite connection to the lines and bar

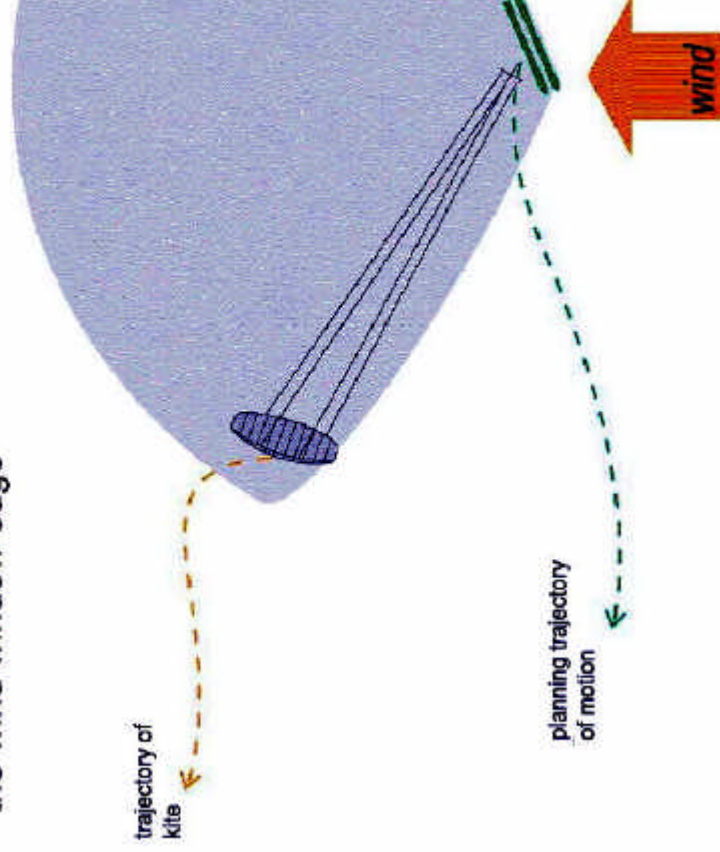
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9. Position of skis (board) during start from zone of power



10. Position of skis (board) during start from the wind window edge



Take off

Self-depended take off from the power zone (pic.11).

Drag the front lines so that leading edge of kite will rise. Kite will be filled with the air from the inlets, and, because of it's own rising power it will drop out the snow. If the kite will be delayed, you can pump it smoothly pulling front lines. On the beginning of the rising watch that the kite won't be turn over. If one of the tips rises faster, break the tip with the turn of the bar energetically.

Take off with assistant from the power zone.

Show the sign that you are ready. Assistant has to stay on the leeward side of the canopy, raise the kite above the land and hold the leading edge on the level of breast. In that position kite will fill good with the air and takes it's normal shape. Assistant show the sign of his readiness and let off the kite. Kiter let off the cross line, the kite flies. Assistant doesn't have to throw up the kite – the kite flies even with the low wind.

Self-depended take off from the edge of wind window. (pic.12).

Drag the front lines so that the leading edge of the kite will rise. As soon as the kite flies up, turn the kite against the wind so that the kite doesn't go to the power zone. Hold it with the coordinated motions of the bar at the edge of wind window.

Take off from the edge of wind window with assistant.

Show the sign about readiness. Assistant has to stay on the leeward side of the canopy, raise the most part of the kite above the land and hold the leading edge. In this position kite will fill good with the air and takes it's normal shape. On this stage your assistant can do the visual check of the line's system. Assistant show the sign of readiness and let off the kite. The assistant

doesn't have to throw up the kite – it takes off by itself with the low wind. As soon as the kite flies up, turn the kite against the wind so that the kite doesn't go to the power zone. Hold it with coordinated motions of the bar on the side of the wind window.

Turning the kite on spot

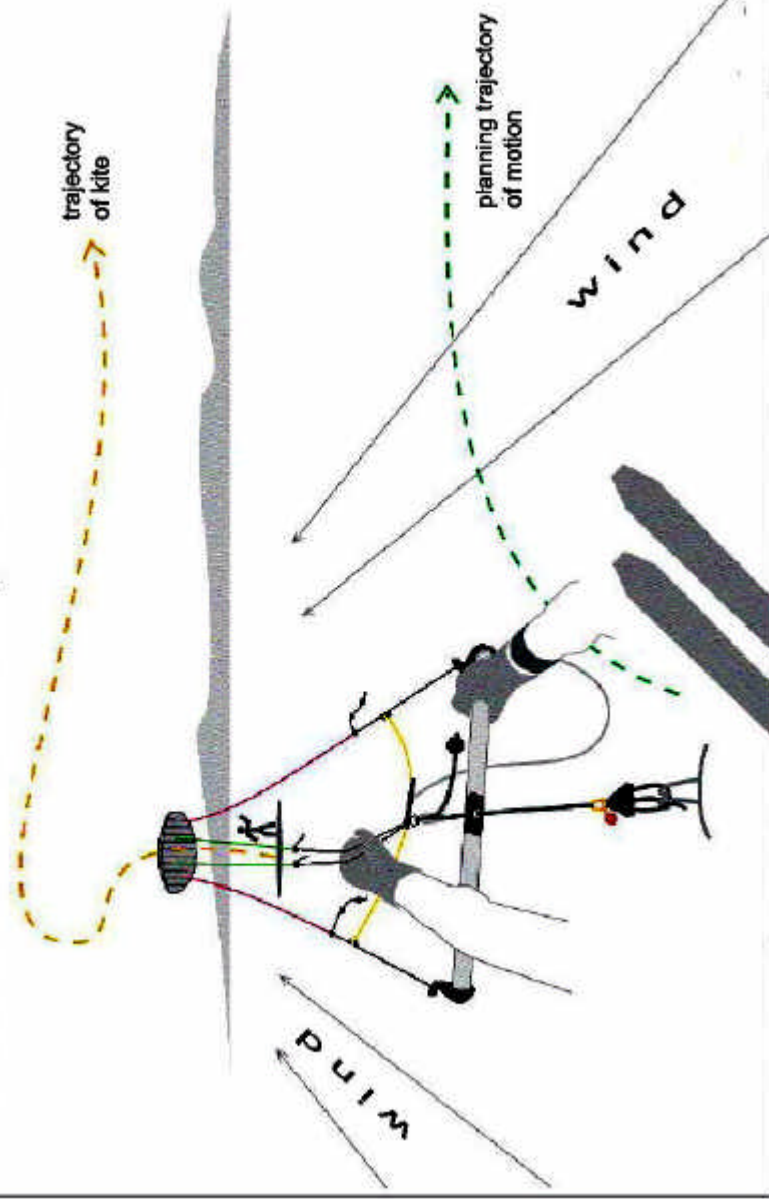
Direction of the kite's motion sets with the turn of the bar. For turning the kite clockwise – right hand “pulled”. For turning the kite counter-clockwise – left hand “pulled” (**pic.13**). Braking of the kite – “pulled bar”, acceleration the kite – “released bar”.

Depending on the position of the wind and speed motion in the window, kite has a different traction. Minimum traction will be on the edge of the window, maximum traction will be in the low part of zone on the line “wind – pilot -- kite”.

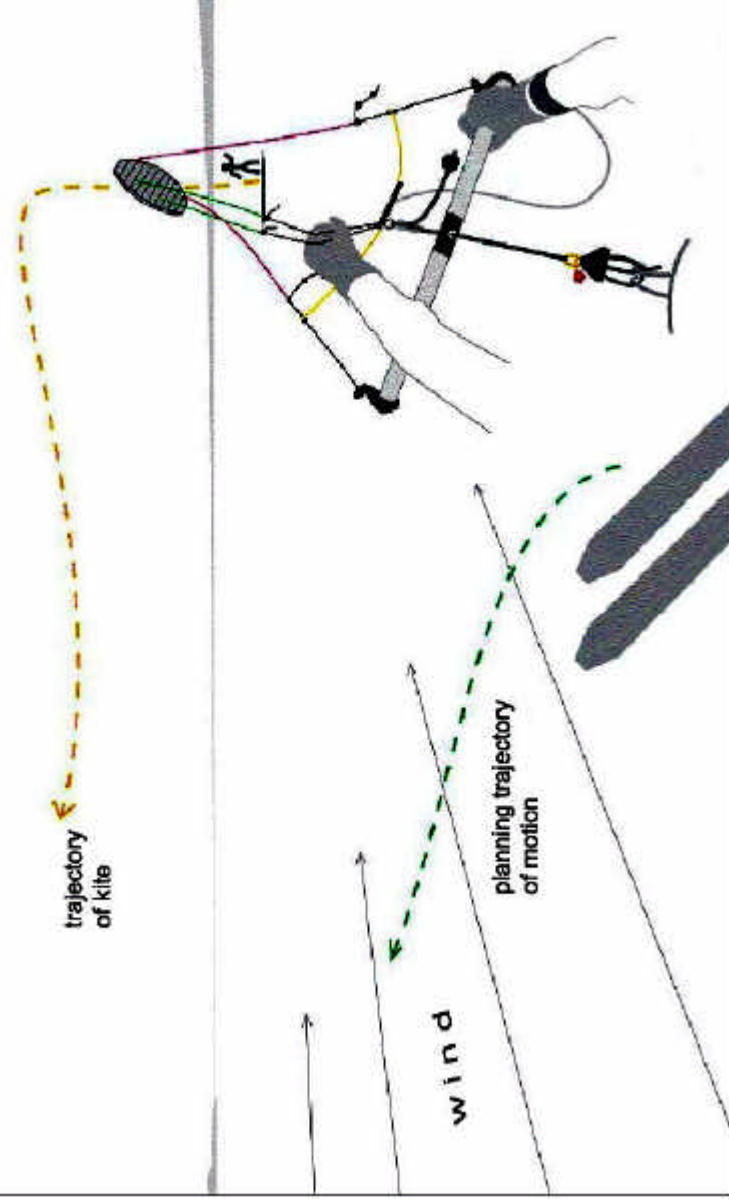
When the kite is moving in the wind window - the air speed of the kite is changes. During the acceleration, rising power of wing (therefore the traction too) increases, during the braking – decreases. Traction on the hook changes pro rata to the kite's speed relative to the wind. To not to run to the dragging kite, it's enough to make counterweight. Rest by feet I front of you, hang on the hook of harness.

During familiarization with the kite, work with trimmer. Also try the different positions of rear lines on the break's nuts. Watch for the traction and for the kite's reaction when you change tunings. Experiment more courage. It's normal. In that way you can understand more quickly the core of all turnings. Fly with the kite to the wind not more then 4-5 m/sec

11. Take off from the maximum power zone

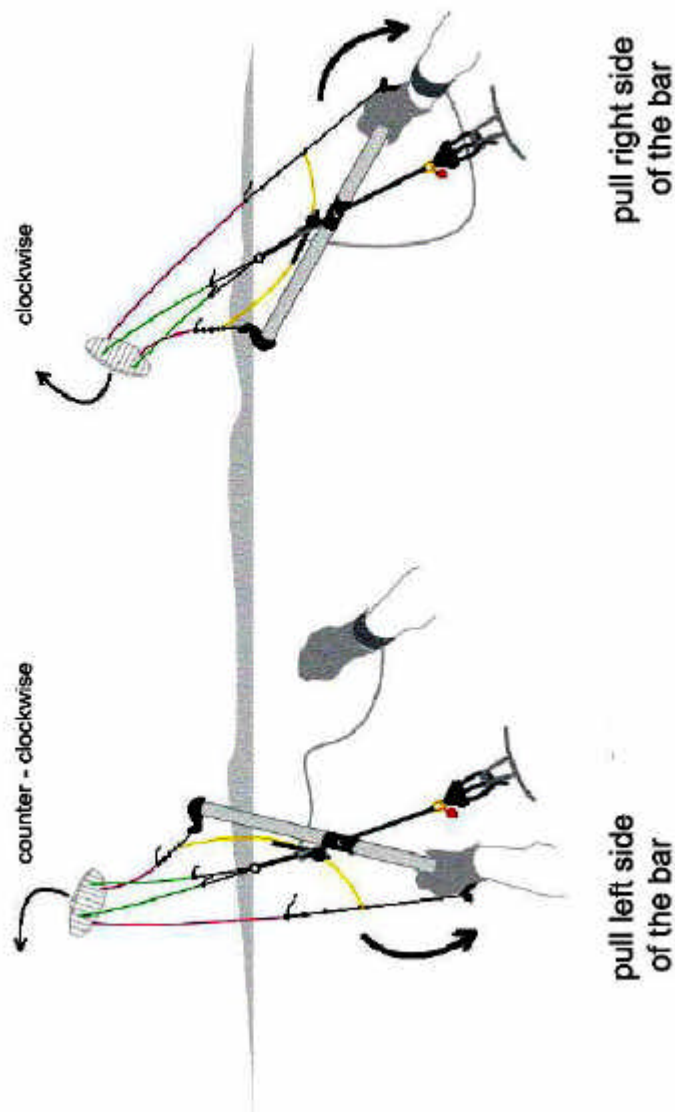


12. Take off from the edge of wind window



13. Turning the kite on the spot

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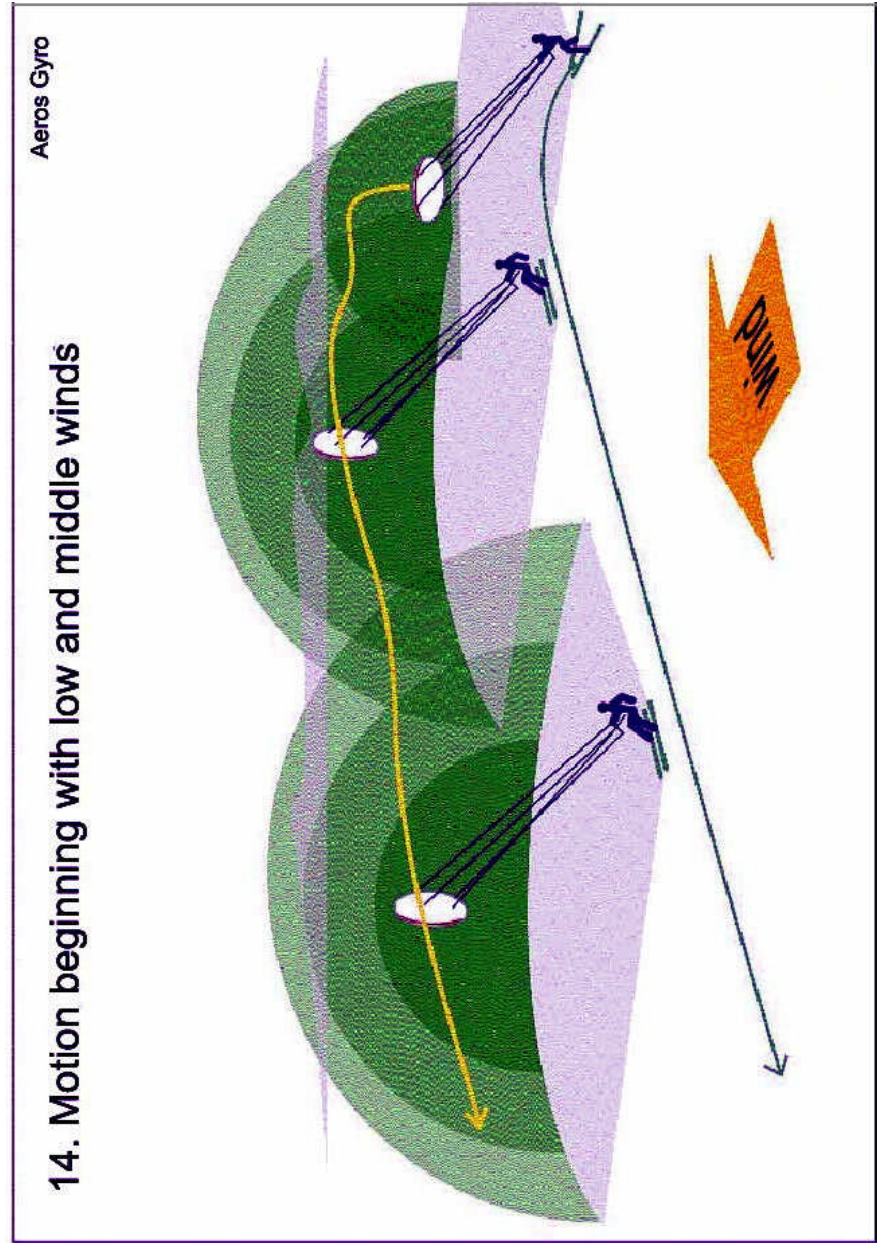
Beginning of the motion

To allow the kite to begin to drag and shift you from your place, you have to give it the airspeed, accelerate the kite. In a middle and strong wind kite is good blown on the wind and it has enough airspeed. In that case no need to accelerate the kite, it start to drag good right away after raising.

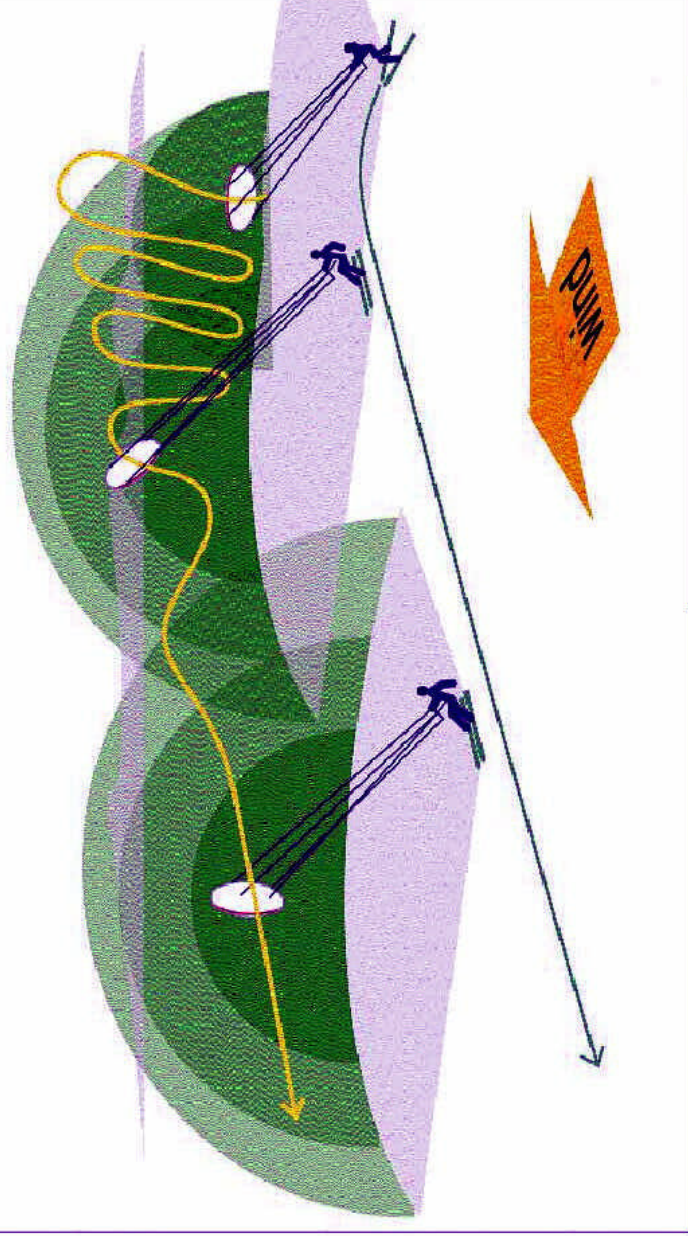
To begin to move, direct the kite parallel to the land. Slide a little bit to the side of kite, take speed and start to drag "from the kite", direct the skies (board) parallel to the course of motion of the kite. Slide gradually so that loading on the hook doesn't disappear, otherwise kite will fall down. It's important to hold the kite in a zone of maximum power with control bar. This zone is always on the line "wind – kiter" (**pic.14**). If the kite goes ahead, break it ("pull bar"). If it remains behind you – accelerate ("release bar"). During the motion hold the balance, taking into account, that the kite drags you to the waist, not to the arms.

If the wind is low, kite needs help. After rising of the kite you have to accelerate it by means of one or some motions of sinusoid (swinging) (**pic.15**). The feature of this motion is that on the descending the kite obtains more air speed and as a consequence, more power. Due to power skier begins to move behind the kite. Then with control motion of the bar return kite to the upper point of sinusoid. On this stage kiter overtakes the kite as if slide "behind the traction, uptilt off skies or board. By the next motion of the bar kite turns down again. Already having a speed, kiter takes the next dose of traction for further acceleration. With increasing speed of kite, you can decrease the arcs. If your speed decreases, swing the kite again.

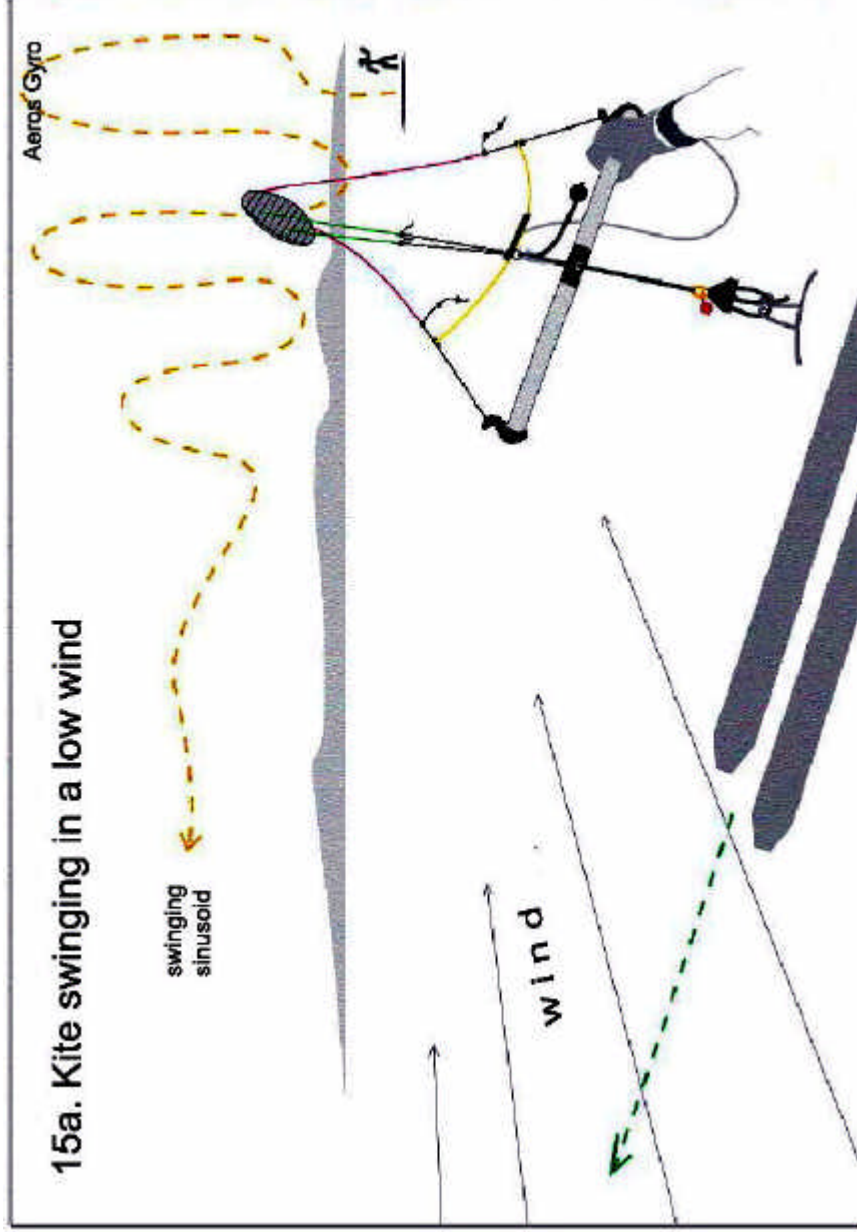
How “sinusoid” (swinging) helps us? Due to the less speed of kiter, kite wants to go away from the power zone. With the motions by sinusoid we hold the kite in the power zone and simultaneously keep necessary airspeed. At this speed it creates a sufficient traction for the motion. By swinging hold the kite in the zone of maximum power of the wind window (**pic.15a**). If it necessary, to the motion of bar “right – left”, add break “pulled”.



15. Motion beginning with swinging in a low wind



15a. Kite swinging in a low wind



Maintaining direction and turns

To maintain direction and constant speed of motion, kite and you have to move with the same speed. If the kite leaves you behind – break it (“pulled bar”), overtake the kite, stabilize the speed. If the kite remains behind you, let off the bar so that the kite will overtake you. If it necessary you can decrease also your speed by uptilting shortly, equalize your speed and speed of the kite and prolonging the motion (**pic.16**). At low wind use “sinusoid” (swinging, look above), so that the kite doesn’t leave power zone.

Change direction of motion while moving left traverse (wind on the left side, kite on the right side). Right turn: break the kite (“pulled bar”), leave the kite behind to the desired course (with another words, turning around the kite by arc), unbrake the kite (“released bar”) and equalize with the kite on a new course. Left turn: accelerate the kite (“released bar”), uptilt from the kite to the turn’s direction, take the kite to the desired direction (now kite turns round us by arc) and accelerate, equalize with the kite on the new course. If speed of kiter and speed of the kite are maximum, for turn to the left will be enough to uptilt to the turning side, thus break. Kite will overtake. Stabilize on the new course (**pic.17**).

Change direction of motion by the motion of the right traverse (wind on the right side, kite on the left side), do to the contrary. Turn right: accelerate the kite, uptilt from the kite to the turning side and stabilize on the new course. If you have no possibility to accelerate the kite (maximum speed) uptilt to the side of turn so that the kite will overtake us by arc. Stabilize on

the new course. Turn left: break the kite, overtake it by arc to the desired direction, stabilize on the new course (**pic.18**).

Changing the traverse (turn) on skies – do the ordinary mountain-ski turn from the wind to the kite side, simultaneously turning the kite in front of you around the upper tip (from the lower position of kite) (**pic.19**).

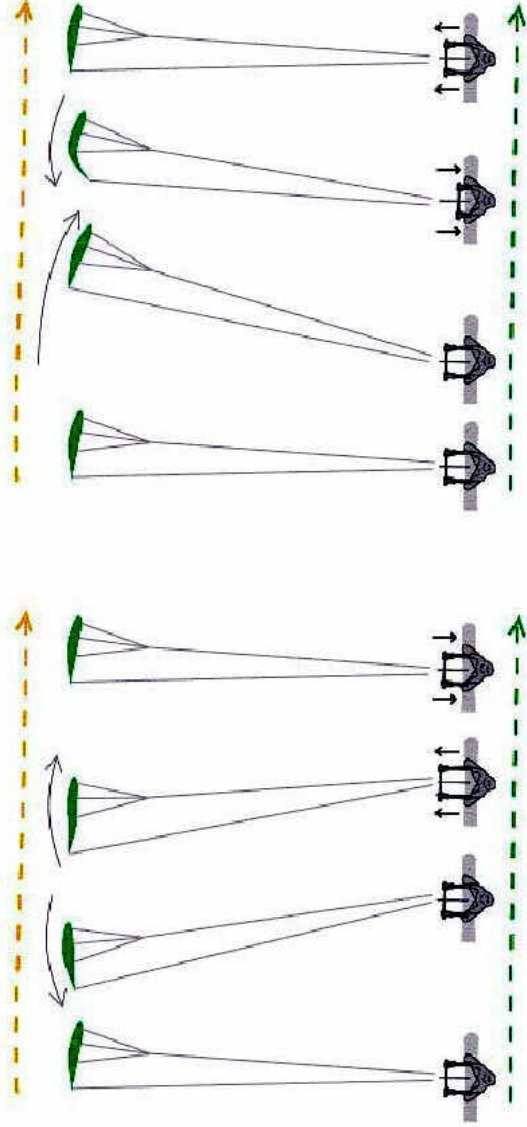
Changing the traverse (turn) on board simultaneously with turning the kite. Stop (uptilt) and start to move to the opposite side after turning the kite. You can change the edge when you want. Changing the edge, you turn by arc together with the kite. Unlike from moving on rear edge, sliding on leading edge you turn back to the kite. The line of depower turn around the trapeze by side (**pic.20**).

Changing of traverse (turning) in strong wind and with high speed. Reaction of the kite is very strong, **be attentive!** The order of motions is the same that was above. But now the radius of turning skies (board) greatly increase:

- 1) Smoothly start to turn from wind to kite to decrease the power;
- 2) Shift the kite to the opposite edge of wind window (turn the kite around the tip);
- 3) Turn around simultaneously with the kite, watch for the traction, hold it on the minimum and don’t allow increasing of traction. If the kite begins to drag – slide with the wind to the kite. If the traction disappears, uptilt from the kite, watch that the kite won’t collapse. As the radius of turning greatly increases, take this into account when foresee the estimate trajectory of motion.

16. Maintaining of constant speed and direction

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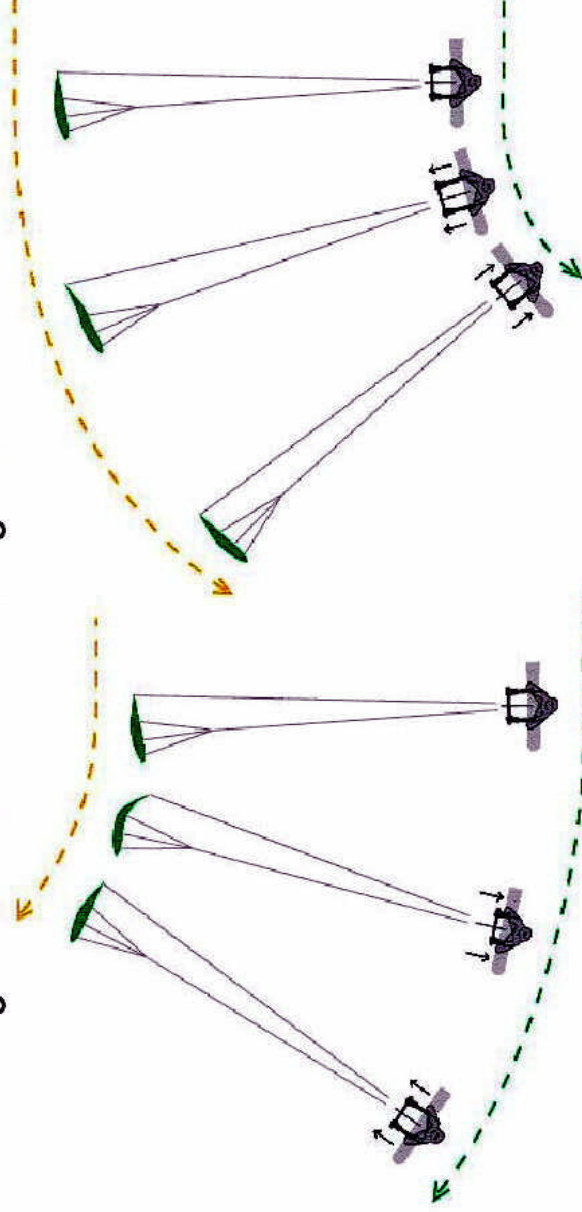


if the kite remains behind you, speed it up.
Possible also to decrease your own speed by dragging with skis or board. Equalize your and kite speeds and prolong motion.

if the kite overtakes you, pull the bar.
Equalize your and kite speeds and prolong motion.

17. Change of direction while moving left

Aeros Gyro

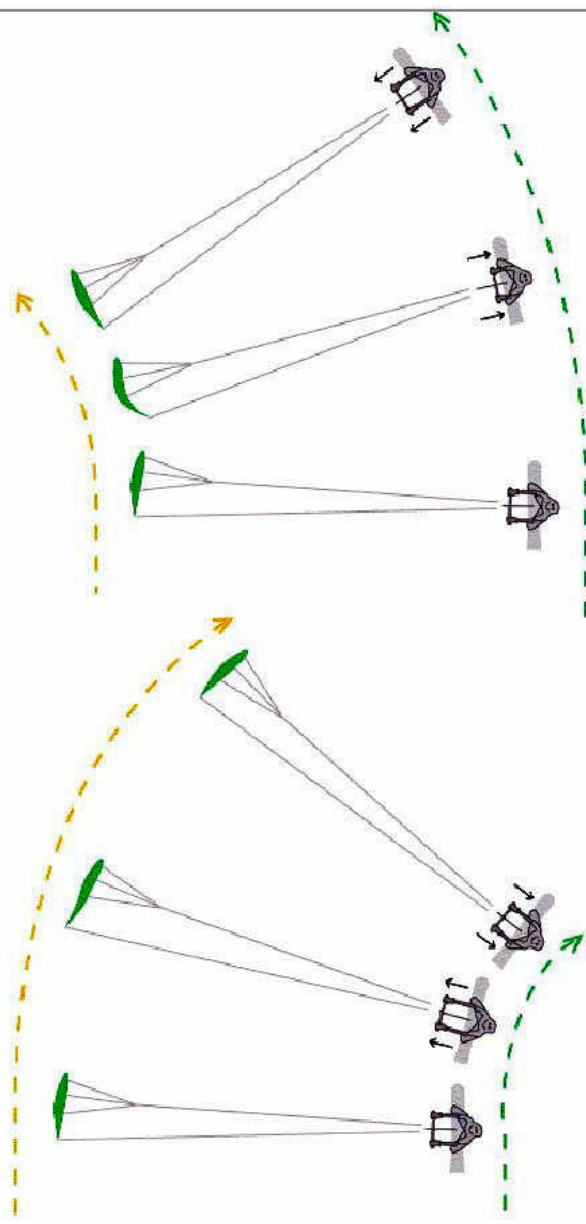


Right turn:
break the kite (pull the bar).
Leave the kite behind until you will be on desired course (turning around the kite by arc). Equalize your and kite speeds on a new course.

Left turn:
accelerate the kite (release the bar). Turn with skis outside of kite (kite will turn around you by arc). if the speed of kite was maximum before turn break yourself with skis - kite will pass you by arc. Equalize your and kite speeds on a new course.

18. Changing of the direction during right traverse

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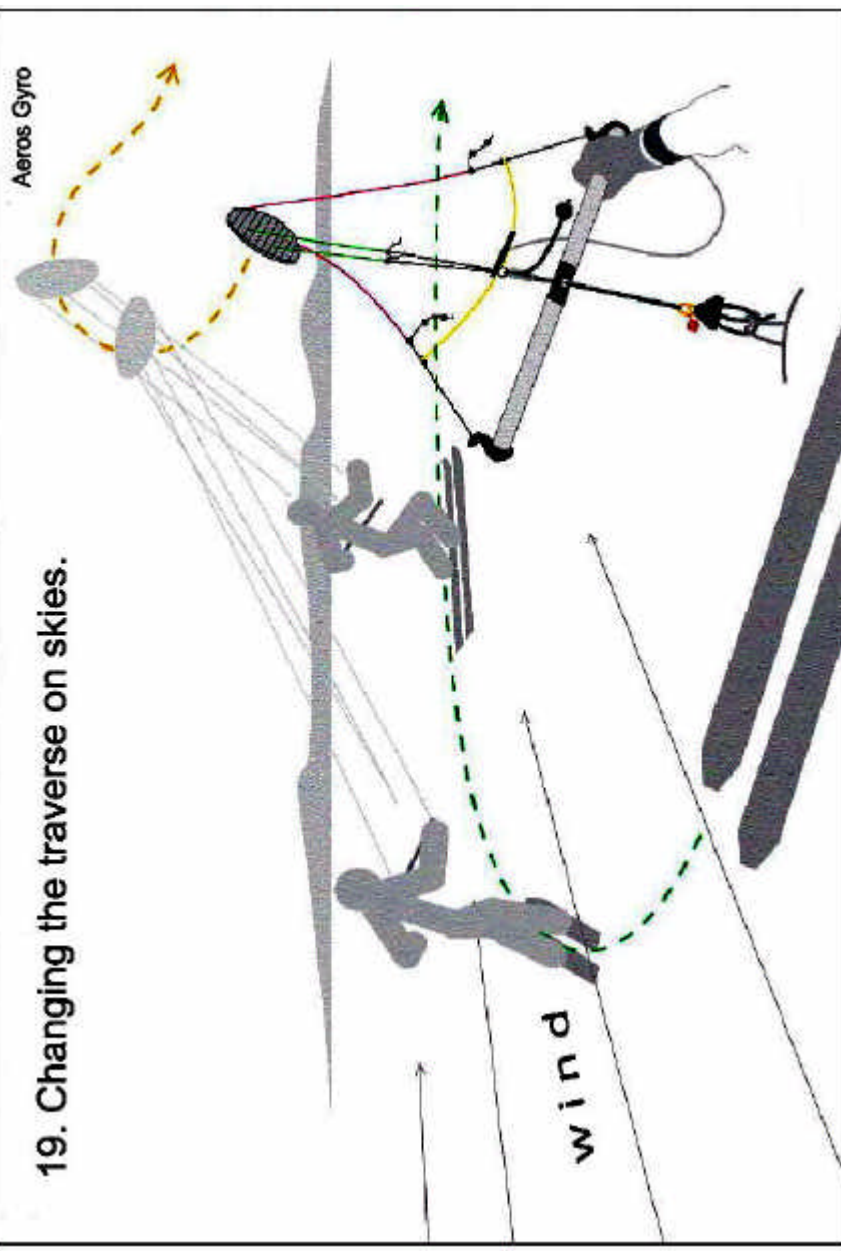


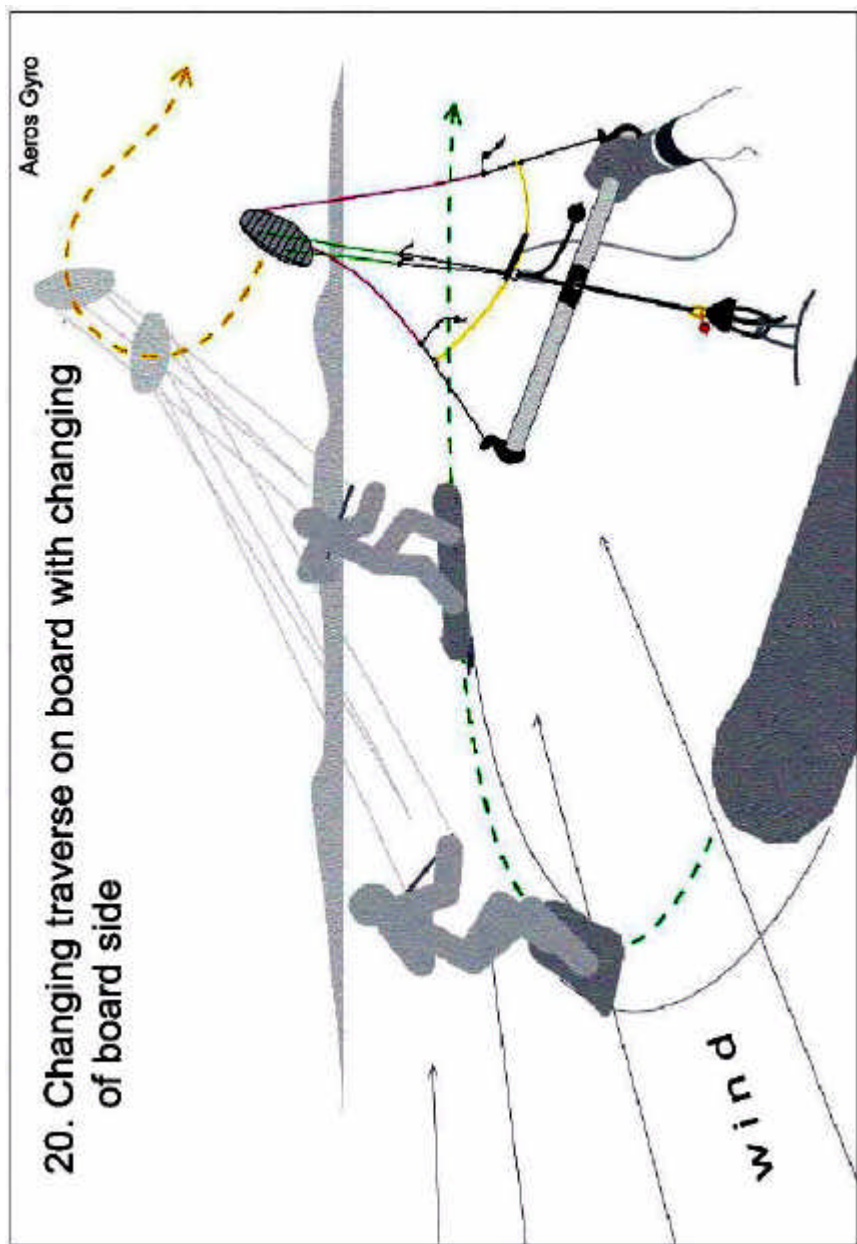
Turning right:
accelerate the kite, turn right and stabilize the kite on the new direction. If the speed is high and its impossible to accelerate the kite, turn right with decreasing your speed, allow the kite to pass you. Stabilize trajectory.

Turning left :
break the kite slightly, pass the kite untill the required direction and stabilize at a new direction.

19. Changing the traverse on skies.

Aeros Gyro





Moving against the wind

The rules of maintaining direction (course) and turns are the same. The feature is that for this moving we have to hold the kite not in zone of maximum power, but closer to the edge of window. On this position kite has less power, because of this the total speed will be less. The wind window is always by wind and not depends on direction of kite's moving (**pic.21**). If you need to move district against the wind, use the method of traverse – periodical changing of traverse (**pic.22**).

Stop when the wind is strong and on the high speed.

- 1) Smoothly turn from the wind to kite, so that the traction decreases;
- 2) Moving to the wind behind the kite, pull the loop of safety system;
- 3) Wait until the kite will fall down on the snow;
- 4) Secure the kite. If you are on ice – holding the safety cross line of kite, twist the ice bore, throw the cross line on it. If there is a snow – use skis or snowboard for securing.

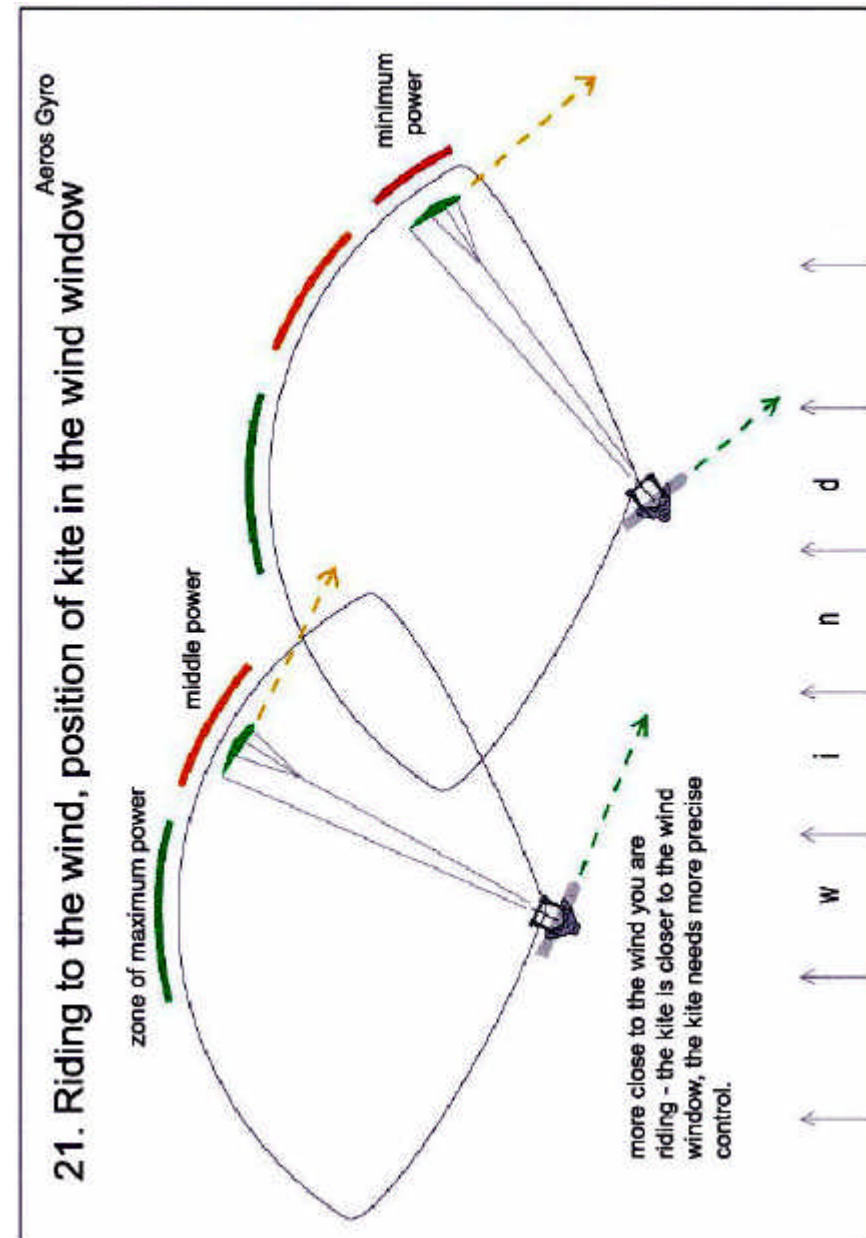
Be attentive! In a strong wind after using a safety system, kite has rest traction. It is necessary to hold the kite by the safety cross line with effort.

During familiarization with the kite on the move, work with trimmer. Watch to the reaction of the kite. With the experience you will learn to sort out a most optimal setting just on the move. Tie the trimmer for the stronger wind, let it off when wind is weakening.

Reverse launch

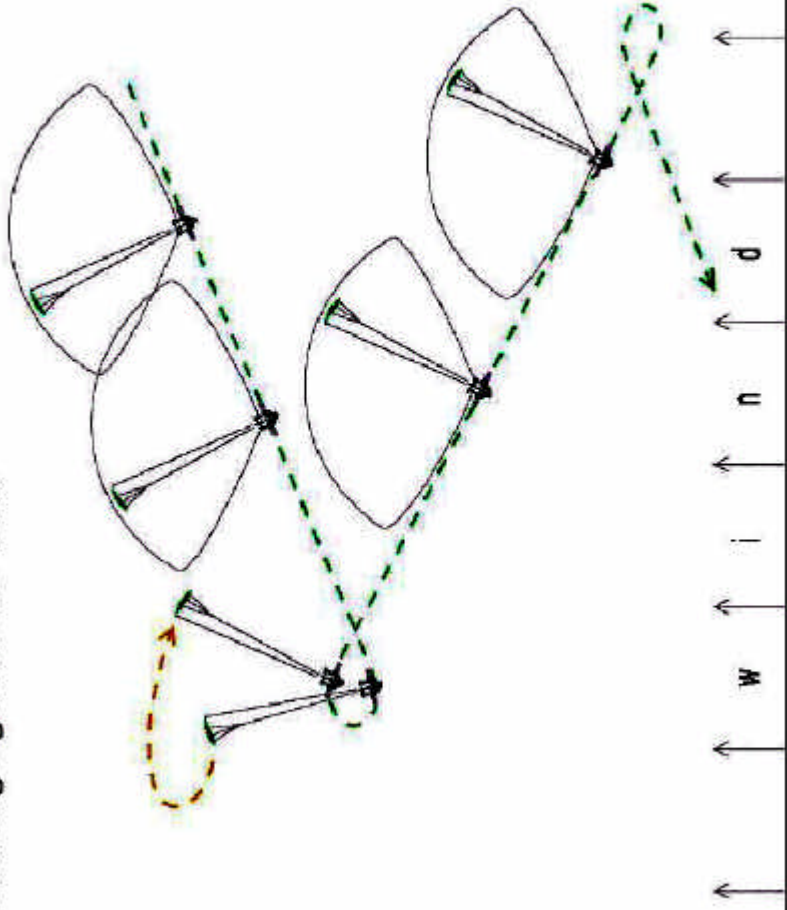
Attention! You have to avoid a frontal stroke of the kite with the land (ice, snow). You can break the nervures. If the kite turned over or fall down on the snow, you have to return it to the normal position (**pic.23**).

- 1) If it's happened in motion and you have a speed, smoothly drag the break of the tip that move ahead. Dragging the break, we raise the tip above the snow. Obtain, that the part of leading edge will raise and will open for the air. Kite will start to turn around the blown tip and gradually fill with the air in the normal position.
- 2) If the kite fell down when you are staying, your movements are the same. But you have to consider that the kite hasn't speed. That's why be patient. Alternately dragging right and left breaks you have to compel the kite to move by circle around you. In that way we give some speed of blowing. Watch to the reaction of tip. You have to obtain the same: so that the tip and a part of the leading edge will rise for inflating.
- 3) If the kite fell down and doesn't move by the radius (it can be with the middle and strong wind) you can try to raise the leading edge by swinging. With energetically motions of break try to swing the kite so that it will "jump" above the snow like a ball. On the moment that leading edge or tip opens, by moving of break with more amplitude try to turn over the kite.



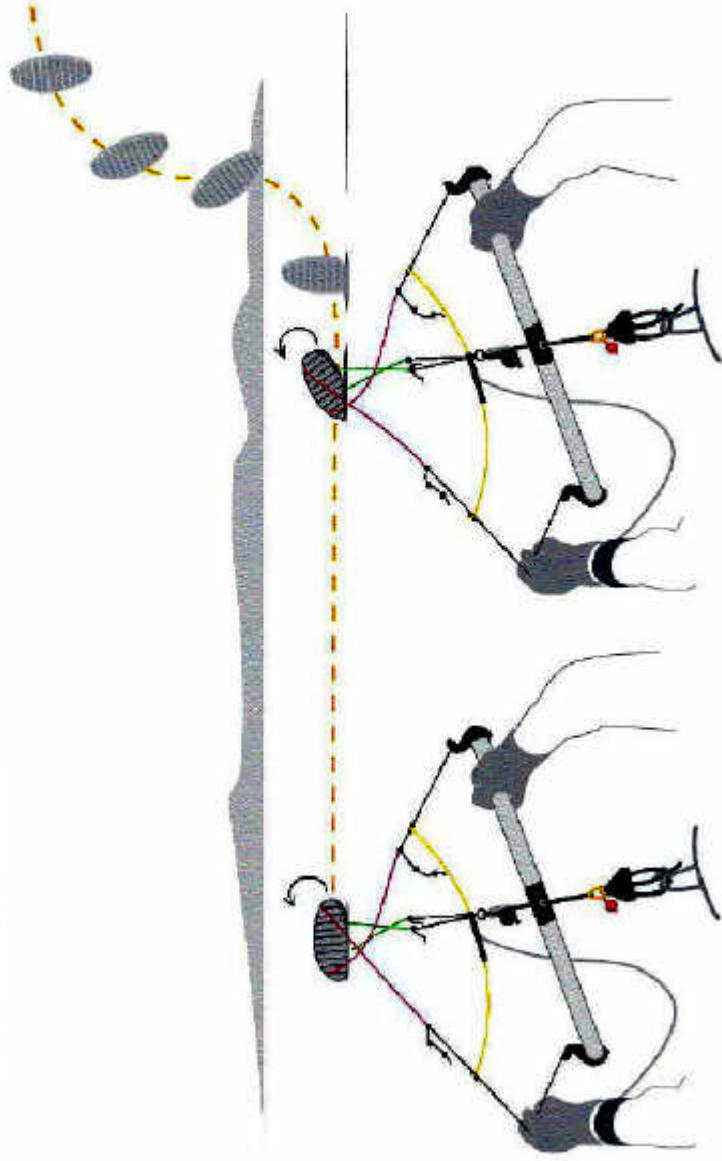
22. Riding against the wind

Aeros Gyro



23. Reverse launch

Aeros Gyro



Landing and packing

- 1) Direct the kite to the left or right edge of wind window.
- 2) Smoothly let down the kite along the edge of wind window, so that your assistant can take it by the middle of leading edge.
- 3) Now your assistant has to put the kite on the snow and secure it, strews the snow on it or presses with bag.

Without assistance you can land the kite, smoothly dragging the safety cross line. For this landing the kite slowly lie down on the snow with rear edge from leeward side. In a strong wind use the safety system; traction decrease and the kite will fall down on the snow. If you are going to prolong the riding later, secure the kite to the ice bore with the safety cross line.

Before packing lay down the kite so that one tip will be to the wind and press it with the bag (**pic.24**).

- 1) Disconnect the lines by consecution leads – rears.
- 2) Throw suspension lines evenly above the kite, fix free ends on the special holders on the rear edge.
- 3) Roll up the kite from tips to the center in the figure of “Z”.
- 4) This roll fold up 3 times and pack in to the bag.
- 5) Reel the lines on the lath by in the figure of “8” with a little tension. Watch that the lines are packed evenly and won't drop out from the skein.

In a strong wind you can roll up the canopy from tips to center for the urgent packing to the bag. If it possible, fix the free ends on the holders on the rear edge to prevent entangling the system of lines.

Storage and Maintenance

- 1) After riding we have to dry the kite. If the kite didn't “take snow”, it's enough to dry 30-50 min. in the normal room temperature.
If you have place, lay it on the floor. If you have not enough place, you can leave the kite half-unfolded. The main thing that you will take it on the air.
- 2) Check the kite for damages and track of deterioration Do repair if necessary.
- 3) Be sure that the kite is dry. Pack it from tips to the center in the figure of “Z”. The roll fold up once again by 3 times.
- 4) Packing the kite, don't press on it so that it occupy maximum place in the bag. It influence for the resources of textile.
- 5) Keep the kite in the dry, warm and air place on the side from the heating appliances.

If the kite is very dirty, you can wash it with warm water and soft cleanser, using sponge. Never use brushes, washing powder or abrasives for cleaning the kite. It can damage the textile. The right storage and timely repair can prolong his term of work.

Recommendations for the repair

In case of small damages use adhesive rip stop from the set. Gum the ruptures from two sides. In case of big damages apply to the specialist of the kite's repair.

24. Packing

Aeros Gyro

