

VECTRON[®]

LAND SAILER

FORCE 10

Instruction Manual

PLEASE DO NOT RETURN THIS PRODUCT TO A RETAIL STORE.
FOR QUESTIONS OR PROBLEMS WITH THIS PRODUCT,
PLEASE CALL OUR CUSTOMER SERVICE AT 1-800-637-3455
OR EMAIL: service@bhsciencetech.com

U.S. AND INTERNATIONAL PATENTS PENDING

"Landsailer Sailing Instructions"

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Illustration: John Sinisi, Joel Carpenter, John Hughes.

For more information on Landsailers, chats, parts,
accessories, tuning and regatta meets, visit
www.RC-Landsailer.com

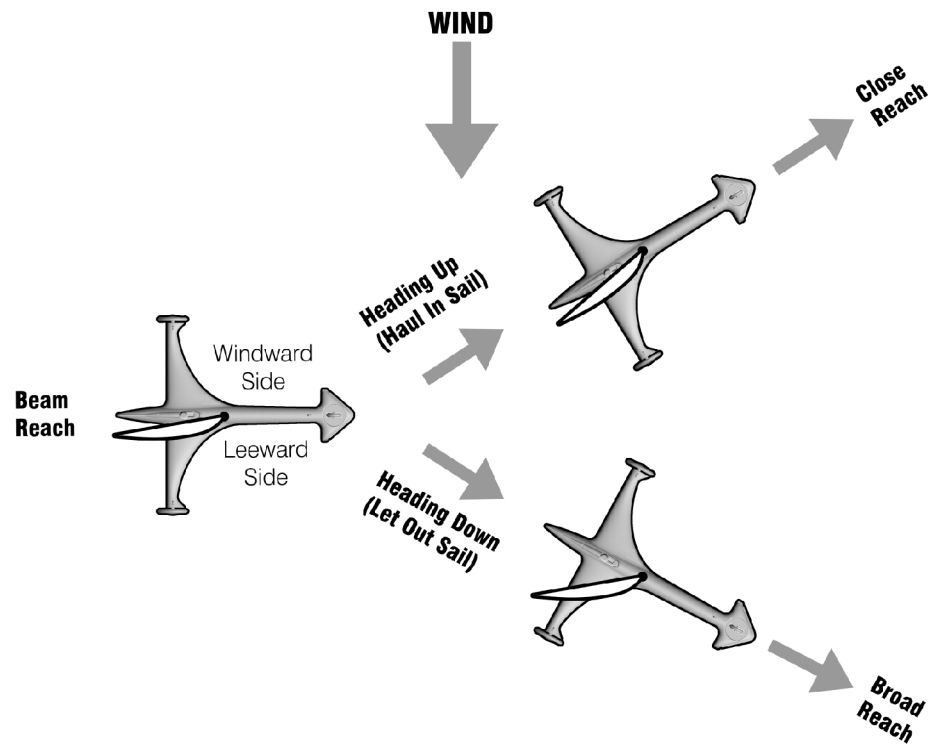
Fun for family and friends!



P38 - EL093 - 81001000



Glossary Reference



WARNING!

- Do not expose your Landsailer to rain or moisture.
- Do not play in a crowded environment.
- Do not play in a dusty area.
- Use only your Landsailer controller included in this package.
- Always turn your Landsailer "OFF" when not in use.
- This toy is not intended for children under 3 years old.
- The instruction manual contains important information and must be kept.

Battery Disposal

- Do not dispose of the battery in your regular household waste.
- Contact your local waste management officials for information on environmentally sound disposal of rechargeable batteries.
- If a battery leak develops, avoid contact with leaking fluid. Place the damaged battery in a plastic bag for proper disposal.
- If fluid comes in to contact with skin or eyes, wash with cool water for at least 15 mins.

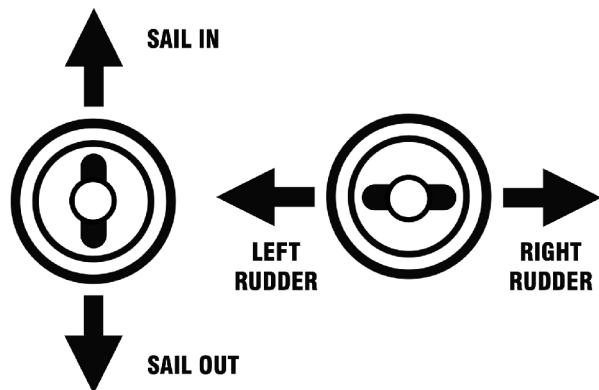
"Landsailer Sailing Instructions"

Steering the Landsailer

There are two things to consider when operating your landsailer: 1) steering the front wheel, referred to as the "rudder wheel", and 2) angling the sails referred to as "trimming the sail"

1) The rudder wheel allows you to steer your landsailer in the direction in which you want to travel. The wheel is controlled by moving the right joystick located on your remote control. Moving the joystick from right to left will turn the landsailer to the left. Moving the joystick from left to right will allow the landsailer to turn to the right.

2) The angle of the sail, as compared to the wind, will allow you to control the speed of the landsailer. The angle, or "trim", is controlled by moving the left joystick up or down. Moving the joystick down moves the sail out or away from the center of the body, or hull, of the landsailer. Moving the joystick up brings the sail closer to the center of the hull.

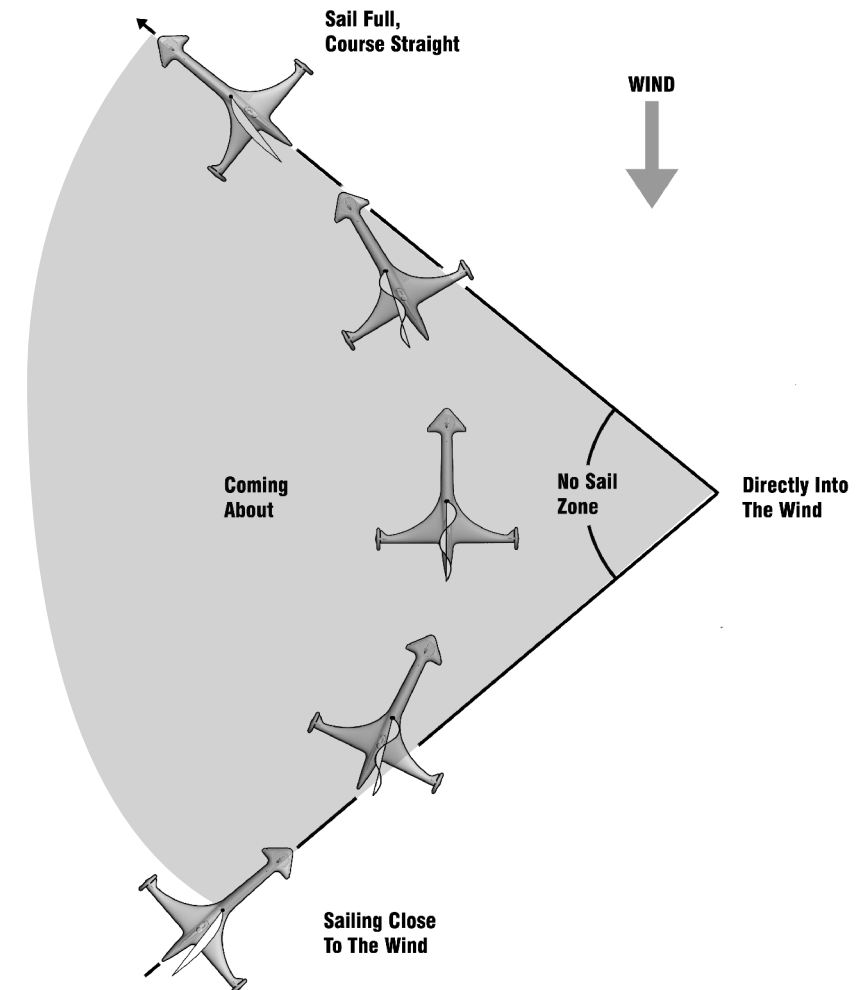


To help you get started, the instructions below will provide you the correct sail angles known as "sail trim" in relationship to wind direction. Finding the best balance between the sail trim, the landsailer's direction of travel, and the wind direction will allow you to obtain the greatest speeds.

Because you can't sail directly into the wind, in order to get to a point directly upwind, you must tack, or turn, through the wind and zigzag upwind towards your destination.

In order to tack, turn the landsailer's front through the wind. Keep the sail trimmed in so that you keep up your speed as you turn through the wind.

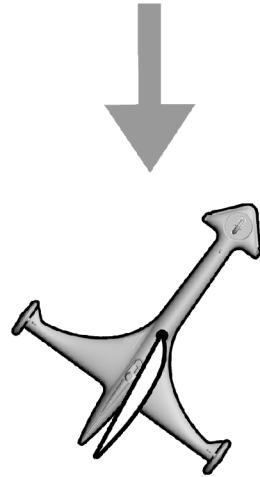
TACKING



The most challenging direction is steering closer to the direction from which the wind is blowing or into the wind. In order to sail your landsailer close to the wind, you must trim the sail much more closely to the center of the landsailer. If you are racing upwind, the best pilots will be able to find the balance that will allow you to sail as closely to the "no sail" zone as possible.

CLOSE REACH

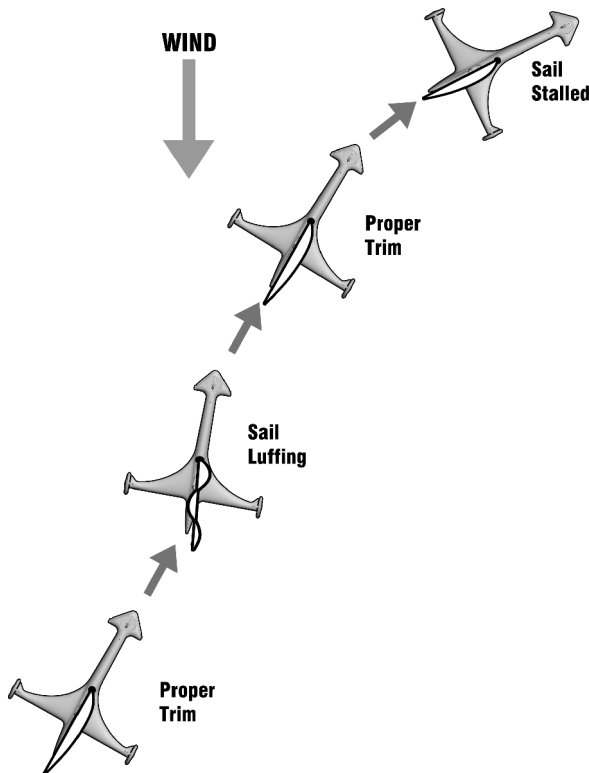
WIND



To find the no sail zone you can bring the sail all the way in to the center of the landsailer and gradually steer more and more into the wind until the sail begins to flap like a flag, and lose the power. This is known as "luffing." When the sail is luffing, it has no pushing or pulling power. You can also lose sail power by steering more and more away from the wind without moving or adjusting the sail until it stalls.

NO SAIL ZONE

WIND

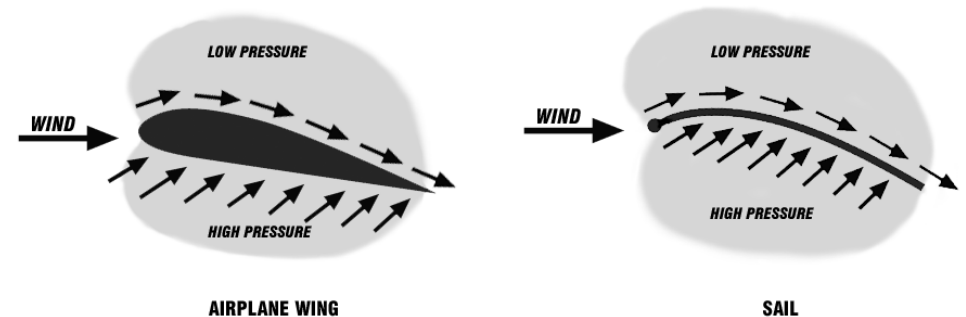


Harnessing the Wind

When you are ready to sail, the first step is to determine from which way the wind is blowing. Use the ribbon, known as a "telltale" attached the top of the landsailer's mast to determine wind direction.

Most days, we can observe the force of the wind pushing objects such as leaves blowing and flags flying. But, with the right equipment, such as an airplane wing or a sail, which works very much like an airplane wing, the wind can be harnessed to push and pull things in many different directions - even into the wind!

SAIL PRINCIPLE

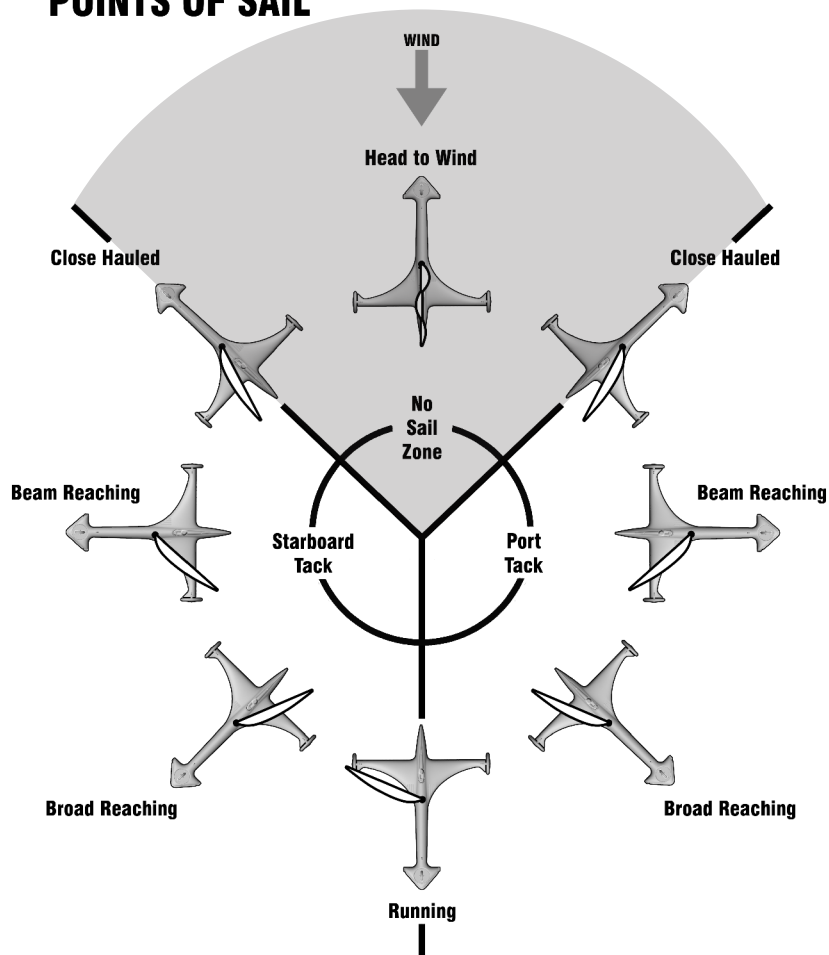


Going into the wind (upwind), when the wind blows over the front end of an angled sail, it divides and meets at the back end of the sail. Because the wind on one side travels a farther distance around the curve of the sail, and the wind on the other side travels a straight line, it creates a low-pressure zone along the curved side of the sail. This force pulls the sail, and the landsailer, attached to it forward, or towards the wind changing the angle of the sail can change the amount of low pressure the sail creates. When the sail is correctly angled into the wind, the resulting force drives the sail forward at its maximum speed towards the wind. Going downwind, the sail is no longer being pulled by the wind, but it is actually being pushed.

A general guideline for sail trim, or angle, is that when the landsailer is pointed as close to the wind direction as possible, the sail is trimmed all the way in. When going dead downwind, or with the wind behind, the sail is let all the way out. When the wind is perpendicular to the boat, the sail is halfway in, halfway out.

However, it is not possible to sail directly into the wind. The closest you can sail towards the wind is about 45 degrees to either side of the wind direction.

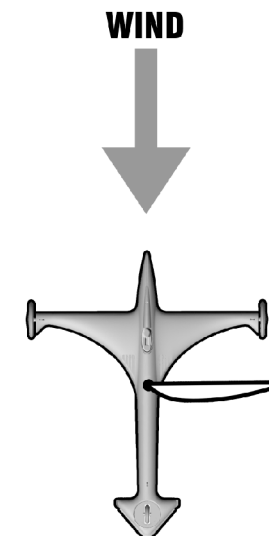
POINTS OF SAIL



There are many directions that you can sail your Landsailer.

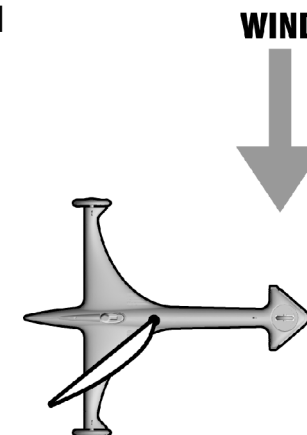
The easiest direction is away from the wind, also known as "running with the wind". When steering away from the wind, let the sail out and point the landsailer away from the wind. The wind will push the landsailer.

RUNNING



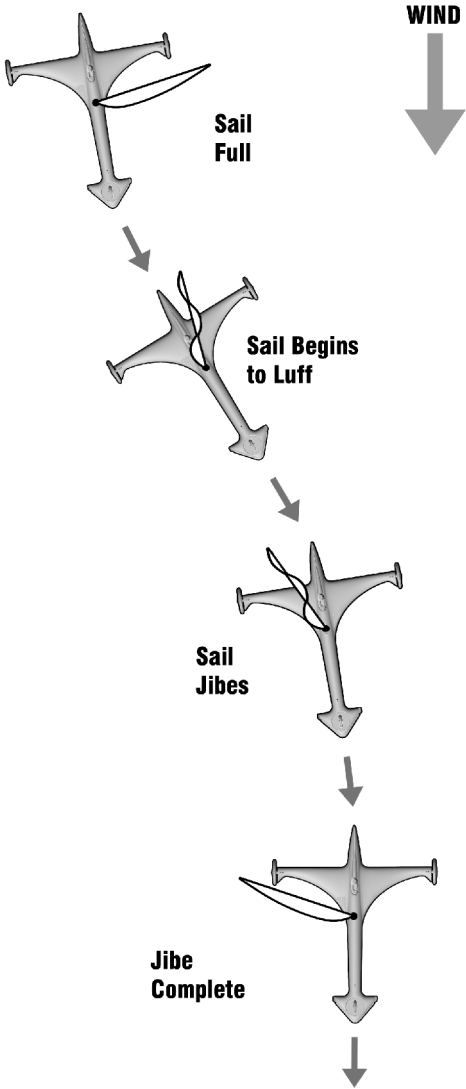
A more challenging direction is parallel to the wind, also called a "beam reach". If you angle the sail 45 degrees from the wind direction, you can run the landsailer back and forth parallel to the wind. This angle will provide you with the maximum speed for the landsailer.

BEAM REACH



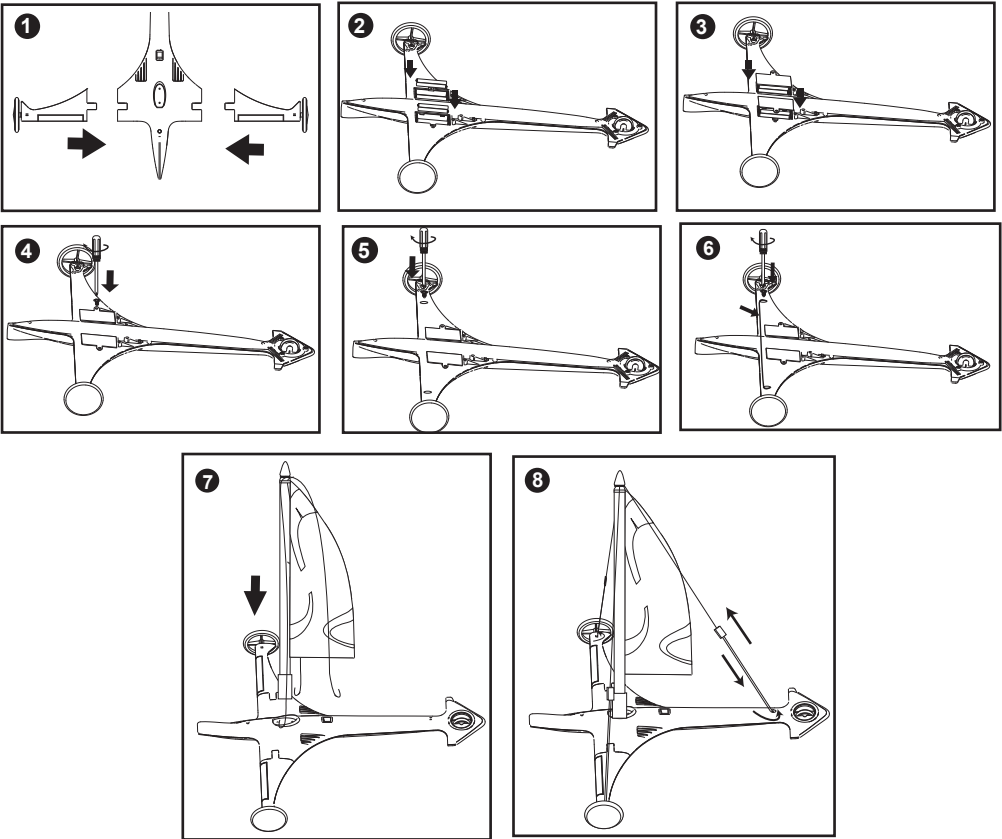
You can also turn around by turning the back of the landsailer through the wind, also called a jibe, with the sails all the way out. This is usually done when the landsailer is going away from the wind.

JIBE

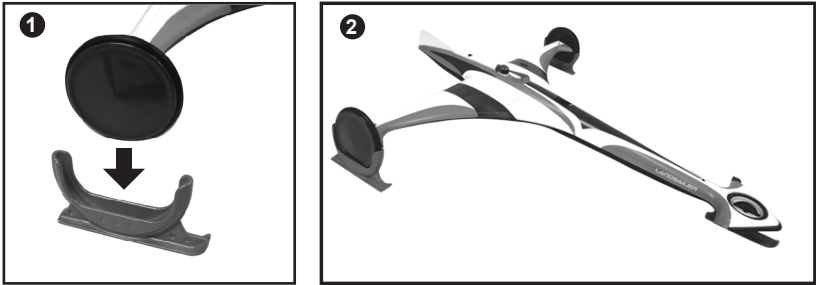


Assembly:

For Landsailer/parts:



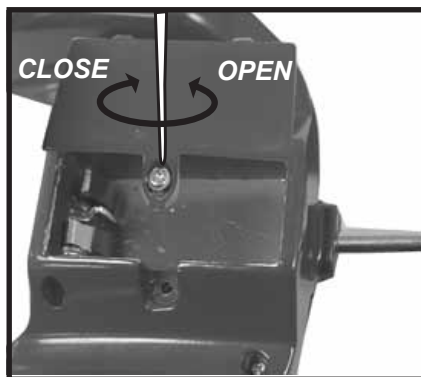
For Ice Blades:



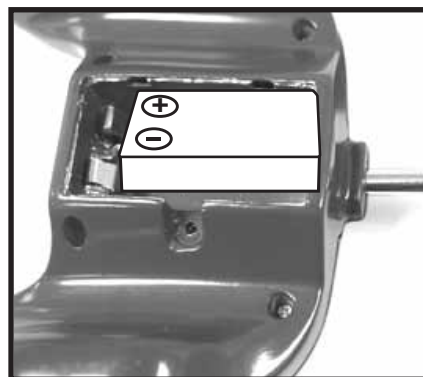
Now that you have finished assembling your Landsailer, you are ready to learn how to sail!

Battery Installation:

For Thrust Transmitter:-



1) Open or close the cover with a Philips screwdriver.

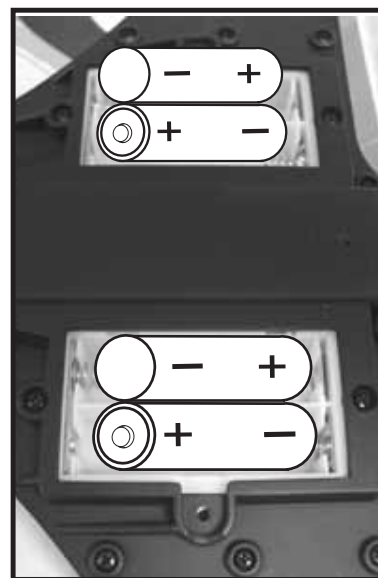


2) Insert one size "9V" (6LR61) Alkaline batteries.

For Landsailer:-



1) Open or close the cover with a Philips screwdriver.



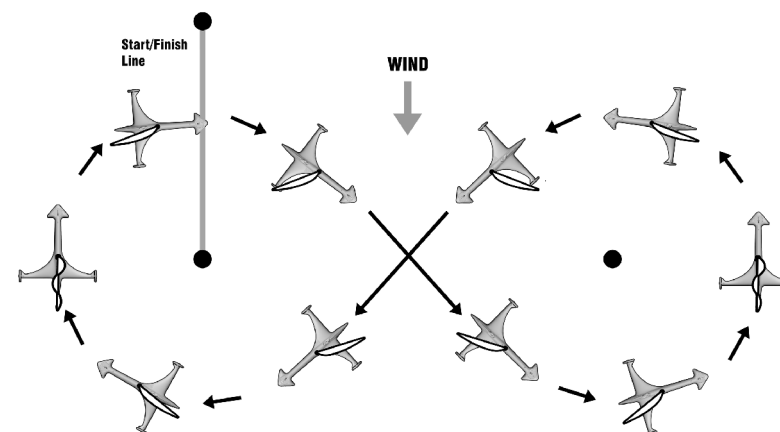
2) Insert four size "AA" (LR6) 1.5V batteries.

Expert Level:

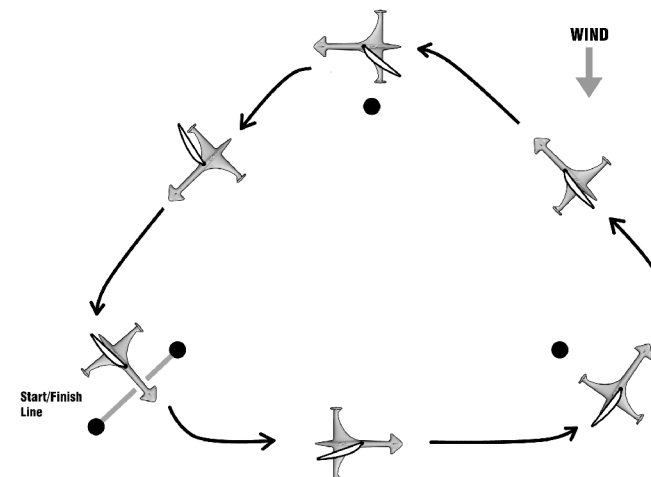
Once you've mastered the basic directions, or points of sail, it's time to put your Landsailing skills into action!

Set up different courses with your friends and see who can maneuver your landsailer through the courses in the fastest times. Challenging courses encompass all points of sail and can be upwind/downwind, circular, triangular, or any shape.

PRACTICE COURSE #1



PRACTICE COURSE #2



You can also race multiple landsailers at the same time on the same course. Some rules do apply.

Glossary

Abeam - Directly to the side, or at a right angle of the ship.

Battens - Thin plastic strips attached to the sail to hold its shape.

Beam - The width of the ship at its widest point

Beam Reach - Sailing with the wind coming directly from the beam, or at a right angle.

Bear Away - To turn away from the wind.

Boom - The spar or pole at the bottom of the sail.

Bow - The forward end of the ship.

Broad Reach - Sailing with the wind coming between the beam and the stern.

Close Hauled - Sailing as close to the wind as possible.

Close Reach - The point of sailing with the wind approximately 45-75 degrees off the bow.

Come About - Turning the front of the ship through the wind. (Also referred to as "tacking")

Come Up - Turning towards the wind.

Downwind - Away from the wind.

Ease Up - To let out the sail.

Harden Up - To bring in the sail.

Head To Wind - Pointing the bow directly into the wind.

Heel - The angle of the ship when tipping upon one rear wheel or blade while under sail.

Hull - The central body of the ship.

Jibe - Turning the stern through the wind.

Leeward - The side away from the wind.

Luffing - The flapping of a sail when pointed into the wind.

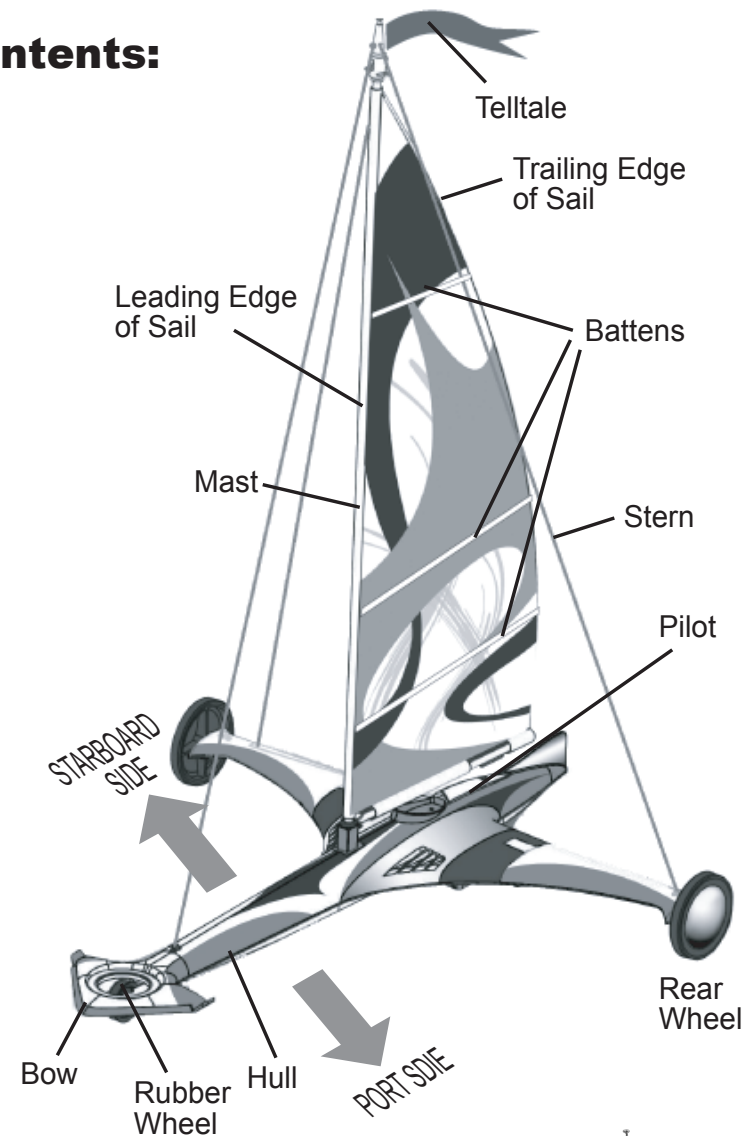
Mast - A central pole supporting the sail.

Outrigger - A structural rail extending the width or beam of one side or both sides of the hull.

Port - The left hand side of the hull while looking forward towards the bow.

Port tack - When the wind is coming over the port side of the ship and the sail and boom are set to starboard.

Contents:



Ice Blades



Thrust Transmitter

Battery Safety Guidelines

- To prevent battery leakage: Be sure to insert batteries correctly.
- Batteries should be replaced by adult.
- Never dispose of batteries in fire as this may cause them to explode.
- Do not mix old and new batteries (replace all batteries at the same time).
- Do not mix Alkaline, standard (Carbon-Zinc) or rechargeable (Nickel-Cadmium) batteries (or equivalent). Only batteries of the same or equivalent type as recommended are to be used.
- Non-rechargeable batteries are not to be recharged.
- Always remove exhausted or dead batteries from product. Remove batteries from product which is not going to be used for a long time. Otherwise the batteries may leak and cause damage.
- The supply terminals are not to be short-circuited.
- Make sure battery compartment is secure.
- Do not immerse battery operated toys. Wipe clean only.

Reach - Sailing across the wind.

Regatta - A sailing meet or race involving multiple ships, and usually multiple races.

Rudder Wheel - The single steerable front wheel of the landsailer, used to change direction.

Run - Sailing directly away from the wind.

Spar - Lines supporting the mast from side to side and front to back.

Starboard - The right hand side of the hull while looking forward towards the bow.

Starboard Tack - When the wind is coming over the starboard side of the ship and the sail and boom are set to port.

Stern - The back end of the ship.

Tack - The current path of the ship.

Tacking - Turning the front of the ship through the wind from one side to the other. Changing tack.

Telltale - Thin sting or cloth used to tell wind direction.

Trim - Adjusting the angle of the sails.

Upwind - Towards the wind.

Windward - The side towards the wind.

NOTE:

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