

14+

# MAD WAVE



LiteHawk MAD WAVE Instruction Manual

**100% Factory Assembled, Tested and Ready To Run!**

Litehawk Videos! Tech Support! Replacement Parts! Just a Mouse Click Away!

PLEASE DO NOT RETURN THIS PRODUCT TO ANY RETAIL STORE.

For any questions or problems with this product please call us at 1-800-268-5797  
or visit our website [www.litehawk.ca](http://www.litehawk.ca)

Made for and distributed by Borgfeldt (Canada) Limited 50 Konrad Cres., Markham, ON L3R 8T4

The Device for use without any External Amplifiers

**IC Radiation Exposure Statement:**

This equipment complies with Canada radiation exposure limits set forth for uncontrolled environments.  
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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**LiteHawk MAD WAVE Precautions** - The LiteHawk MAD WAVE is not intended for children under the age of 14 unless closely supervised by an adult. Improper use may cause serious injury. Please read Li-Po Battery section before use. Do not use in areas close to high voltage lines or crowds. Do not use when windy. Do not run in rain, snow or if there is lightning and/or thunder. Do not touch ANY moving parts while the model is powered.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.



**WARNING: CHOKING HAZARD** - Small parts. Not For Children under 3 years



**CAUTION:** Do not touch the running propeller! Adult supervision is required!



**CAUTION:** Never insert any sharp objects, pins or screws into the model as this may puncture the internal battery!

#### SAFETY PRECAUTIONS

- Keeps hands, hair and loose clothing away from the propeller when the model is powered ON.
- Turn off controller/charger and MAD WAVE when not in use.
- Remove battery from controller/charger when not in use.
- Parental guidance is recommended for use.
- Keep your MAD WAVE in your sight so that you can supervise it at all times.
- A new 9V alkaline battery is recommended for use in the controller to obtain maximum performance.
- Your charger is tailor made for the Li-Po battery used in your LiteHawk MAD WAVE. Do not use it to charge any battery other than that in the LiteHawk MAD WAVE.

#### BATTERY SAFETY INFORMATION

- Requires 1 x 9V battery (included)
- Batteries are small objects.
- Replacement of batteries must be done by adults.
- Follow the polarity (+/-) diagram.
- Promptly remove dead batteries from the toy.
- Dispose of used batteries properly.
- Remove batteries for prolonged storage.
- DO NOT incinerate used batteries
- DO NOT dispose of batteries in fire, as batteries may explode or leak.
- DO NOT mix old and new batteries or different types of batteries (i.e. alkaline/standard)
- Always replace the whole set of batteries at one time.
- DO NOT short-circuit the supply terminals

#### CARE AND MAINTENANCE -

- Always remove batteries from the toy when it is not being used for a long period of time (controller/charger only).
- Keep the toy away from direct heat or extreme cold.
- Do not expose the toy's interior to water or moisture. This can damage the electronic assemblies.

#### Your LiteHawk MAD WAVE is equipped with a Li-Po battery.

##### Special Li-Po Battery Instructions:

- Never charge battery unattended.
- Charge battery in isolated area. Keep away from flammable materials.
- Do not expose to direct sunlight. There is a risk of the batteries exploding, overheating or igniting.
- Do not disassemble, modify, heat or short circuit the batteries. Do not place them in fires or leave them in hot places.
- Only charge the batteries with the specified battery charger.
- Only use the batteries in the device specified by LiteHawk.
- In the unlikely event of leakage or explosion use sand or a chemical fire extinguisher for the battery.
- Batteries must be recycled or disposed of properly.

#### Before charging the LiteHawk MAD WAVE please read the following!

- DO NOT leave the battery unattended during charging.
- DO NOT leave the battery plugged into the charger any longer than 2 hours. If the charging light does not go out in this time, the charger or battery could be faulty - unplug immediately!
- DO NOT install another battery without letting the motor cool first! 5-10 minutes is sufficient.
- DO NOT recharge the battery until it is cool to the touch! 10 minutes is sufficient.
- DO NOT store battery for longer than 24 hours without recharging to at least 65% capacity.

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## Welcome to the World of LiteHawk!

Welcome aboard, this is your new LiteHawk MAD WAVE! Before we get ready for your first water adventure, let's cover the basics together!

The design of your new boat is referred to as a "Deep V" or monohull, this design allows the boat to lift out of the water as it approaches speeds of over 40 km/h (25mph). This design also allows for increased agility - MAD WAVE corners like it's on rails.

Attempting to use your LiteHawk MAD WAVE without completely reading the manual may cause injury to yourself and people in the vicinity, as well as damage to the R/C model. Please read the Instruction Manual thoroughly before using this product.

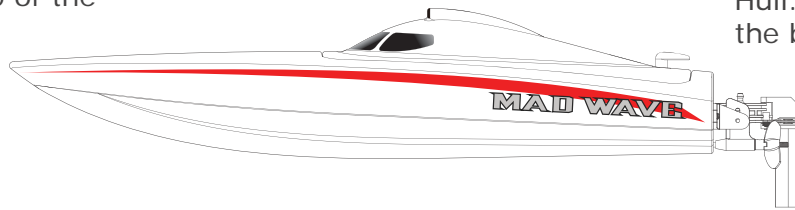
## LiteHawk Boating 101

Bow: Front of the boat

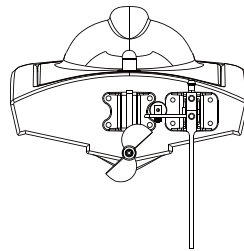
Stern: Back of the boat

Deck: The top of the boat

Hull: The body of the boat



Port: Left side of the boat when looking from the stern forward



Starboard: Right Side of the boat when looking from the stern forward

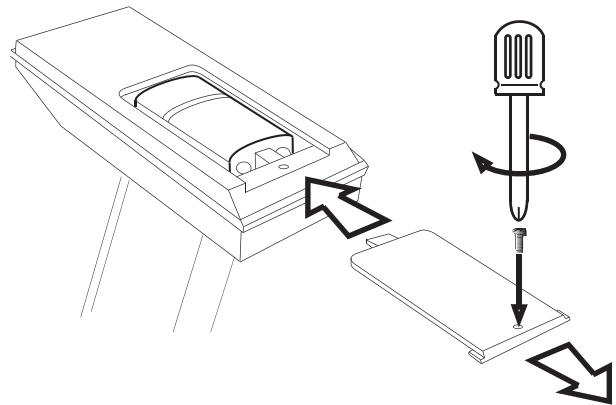
Rudder: Steers the boat left and right

## LiteHawk MAD WAVE - Transmitter Set Up

Always use a new 9 Volt battery in the Pistol Grip Radio Controller (Transmitter).

- Make sure the transmitter is turned off.
- Remove the screw in the battery cover. (Phillips or star head)
- Remove the battery cover at the bottom of the Controller by pressing down and sliding the cover as marked.
- Insert the 9 Volt battery as marked. (If you turn on the transmitter the indicator light will turn red. If not check battery installation)

- Slide the battery cover back into place and re-install the battery cover screw.
- ALWAYS REMOVE THE 9 VOLT BATTERY FROM THE TRANSMITTER WHEN YOU WILL NOT BE USING YOUR BOAT FOR LONG PERIODS OF TIME.
- Dispose and recycle correctly when there is no longer life in the battery



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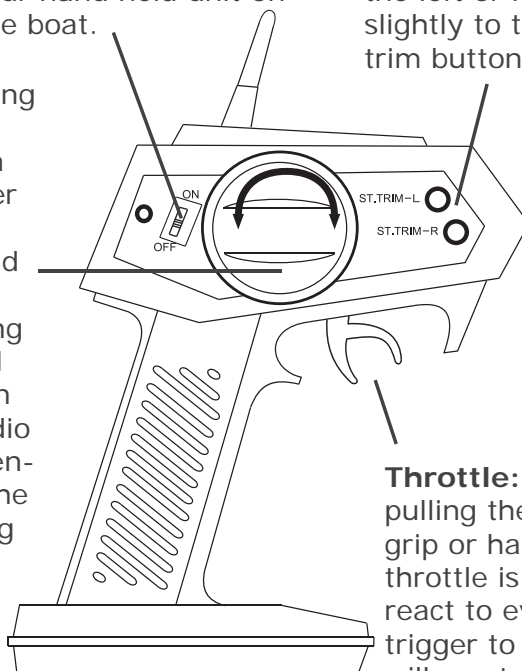
## LiteHawk MAD WAVE - 2.4 Ghz

Your LiteHawk MAD WAVE comes with a 2.4 Ghz radio system, which allows you to play without the fear of ever losing control! Race or play with countless other drivers. The range of your boat is approximately 250ft which, due to its small size, is in excess of normal vision. The farther the boat goes away from you the smaller it will become and the harder it will be to determine the boat's direction. We suggest you drive at a distance between 20ft-50ft, this keeps your boat within a safe operational distance.

## LiteHawk MAD WAVE - Controller Functions

**On/Off Power switch:** red light should come and remain solid when turned on. Make sure to turn your hand held unit on before plugging in the boat.

**Steering:** The steering wheel controls the boat's direction. Turn the wheel left to steer to the left. Turn the wheel to the right and the boat will steer to the right. The steering is 100% proportional and will react to even slight inputs. The radio is designed to self-centre. Simply release the wheel from a steering input and it will go straight.



**Steering trim:** Steering trim is used when your boat is turning or pulling to the left or right. If the boat is turning slightly to the right, then press the left trim button till the boat is tracking straight. If the boat is turning slightly to the left, press the right trim button until the boat is tracking straight. NOTE: If your rudder is noticeably out of centre the Steering trim may not solve your issue and a mechanical adjustment to the steering links may be needed.

**Throttle:** Forward drive is initiated by pulling the throttle trigger towards the grip or handle like a trigger. The throttle is 100% proportional and will react to even slight input. Release the trigger to slow and stop the boat. will go straight.

## LiteHawk MAD WAVE - Battery & Charger

Your LiteHawk MAD WAVE comes with an 11.1 Volt Li-Po battery, a 120V wall mount power supply and balance charging system.

### Battery:

The rechargeable Li-Po battery provides the power to propel your boat across the water at high speeds. You should expect 5-10min run time. Extra batteries are available at [www.litehawk.ca](http://www.litehawk.ca). However you do need to make sure to properly maintain your Li-Po Battery.

- Li-Po batteries don't like to be run down too low. If the voltage is dropped dramatically

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they will be damaged and will not recharge! The ESC (Electronic Speed Control) in the boat has low voltage hard cut off at 3.2V per cell: once the boat starts to slow bring it back to shore immediately. It is recommend charging the battery after you run the boat and store the battery with a charge. Never discharge or dead short a Li-Po battery!

- You Must FULLY charge the battery before using your new boat.
- Do not leave the battery plugged into the boat when it is not being used.

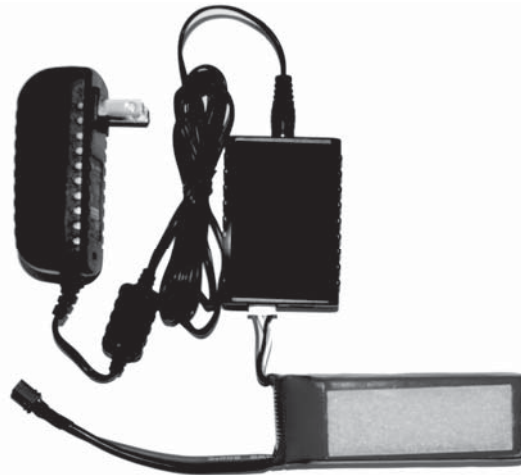
## Charging:

You will notice that there are 2 plugs with wires coming out of the battery. The white plug with the white, black, and red wires is the balance plug. This is the plug you use with the supplied balance charger. This is a keyed plug and will only go in one way.

1. Plug your wall mount power supply into a 120V outlet and connect the balance charger into the opposite end. The red light on the balance charger will be solid red to indicate there is power.

2. Connect the battery's white 4 pin balance connector into the corresponding port on the balance charger. The red light will turn off, a green light will blink to indicate charging. Charging time is Approx 1.5-2 hours.

3. Charging is completed once red light and the green light are both solid on. If both lights are still not solid on within 2.5 hours, unplug battery as the charger may be defective. Discontinue use immediately and call LiteHawk Technical Support.



## During charging:

- It is normal for the battery to get warm during the charging process. Do not charge the battery on a surface that is flammable or can be damaged by heat.
- Do not leave the battery and charger unattended while charging.
- Do not store the battery plugged into the charger

## Installation of battery into the boat:

Place your LiteHawk MAD WAVE on its supplied boat stand to avoid damage to the rudder and propeller. It is best to always have your boat on the provided stand when not in the water.

- Remove the hatch on the deck by turning the rear mounted latch, lift the cover from the back and remove.
- Insert the 11.1 Volt battery into the left side of the boat hull. You will see a Velcro tie to hold it in place.
- Plug the Red battery plug into the matching plug in the boat. This is a tight fit, but the plug is keyed so it will only go in one way.
- Reinstall the top hatch.
- Do not store the battery plugged into the boat.

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## Binding the Receiver and Transmitter:

If for some reason your boat is not connected with your Transmitter make sure you are turning the Transmitter (Pistol Grip radio) on first and then plug the battery into the boat. If this doesn't solve the issue you will need to bind the Transmitter to the boat's receiver.

- Switch on the Transmitter, making sure the indicator light is red.
- Plug in the battery into the boat
- Press down the BIND button on the boat's receiver.
- The receiver's green light will turn on to indicate that the binding has been successful.
- The boat should now accept inputs from the transmitter.
- **For ESC safety, the first time will cut-off after 2 seconds.**

If you were unsuccessful in binding the boat to the Transmitter unplug the battery in the boat and turn off the radio. Then repeat the binding process.

## Water-cooled and water-proof electronics:

All LiteHawk Marine items are water-cooled! Your LiteHawk MAD WAVE picks up water from the base of the rudder, as the boat is moving through the water. The water is forced through the Electronic Speed Control (ESC) and then into the water-cooled motor mount. This helps to keep everything cool. For added protection the Electronic speed Control (ESC) have been waterproofed. All this protection helps to avoid the classic problem that all R/C power boats have - how to keep everything cool.

- Before using your new boat carefully check the silicone cooling tubes are connected securely and not blocked. Ensure that the water inlet in the rudder is not obstructed. A good way to check for blockages is to use your mouth to blow air into the outlet tube and make sure you have air exiting the inlet at the base of the rudder.
- If you are running the boat in salt water, than you should blow out the cooling system as mentioned above after use. If possible run in fresh water for a minute or so to flush the lines.
- Your Receiver has a O-ring gasket to help keep water out. The wires going into the receiver have also been sealed. However water could penetrate the seals. If you notice ANY loss of control stop driving and un-plug the battery and remove the receiver from the boat and allow to air dry. Removing the screws from the bottom of the receiver will allow you to open up the receiver. This makes the air drying far more effective.

## LiteHawk MAD WAVE - On The Water

When using your MAD WAVE make sure the water is clear. NEVER DRIVE YOUR BOAT WITH PEOPLE IN THE WATER. Remember the MAD WAVE is fast. Apply the throttle slowly to avoid crashing into solid objects.

When using your boat in lakes or larger bodies of water, check the area for rocks, logs, etc.. that could damage the boat while driving. Do not run the boat in water with weeds growing to the surface, as they will get caught in the propeller and stress the motor and electronics. Check water currents before putting the boat in the water. Strong currents are not recommended. Make sure the water is at least 8 inches deep.

Make sure your hands are clear of the propeller and rudder when you are placing the boat in and out of the water. For your first few runs try to keep the boat within 10-30ft of you so you can see how the boat reacts to steering and throttle input. Once you have more experience you can venture a little farther away. Remember the controls are proportional just like a real boat. Ease on and off the throttle until you are comfortable.

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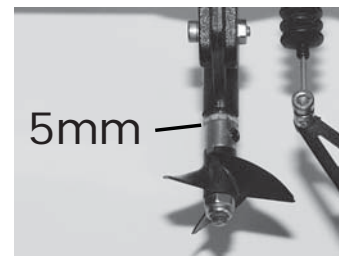
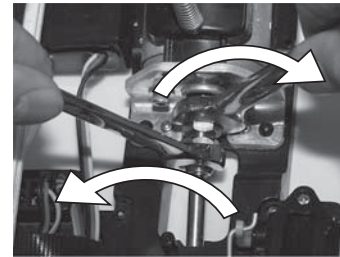
## Maintenance & Storage

When you have finished using your LiteHawk MAD WAVE disconnect the battery and switch off the Transmitter. Remove the battery from the boat and leave the top hatch off to allow moisture to evaporate. Leave the top hatch off until you are sure the boat is dry and then you can re-install the top hatch and store it. It is best to remove the battery from the boat and radio. Store the boat in a nice, dry place on the provided boat stand. Keep away from heat sources (Open flames, radiators, direct sunlight). Your boat has a foam gasket that keeps water from entering. When storing the boat with the top canopy on, remove the gasket so it stays firm for the next use.

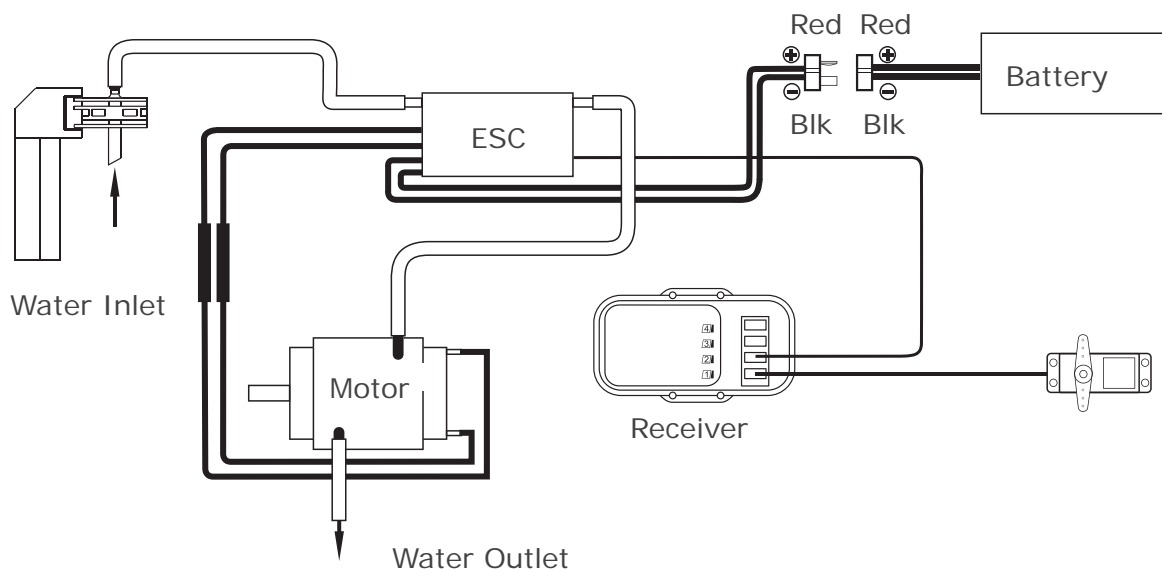
Your boat is virtually maintenance free, but one thing is vital to the life of the drivetrain. Lubricating the flex shaft keeps your boat running smooth and also acts as a water seal. This keeps water from entering your boat. Lubricate the flex shaft/propeller shaft after every 2-3 times you operate your boat.

The MAD WAVE uses a coupler to connect the flexshaft to the motor. Using two 8mm wrenches (not included), loosen the connection as shown. Grab the propeller and pull back removing the shaft 3/4's the way out of the boat. Lubricate the shaft with axle or bearing grease and re-install.

- Reinstall the shaft in reverse order.
- Before tightening the motor coupler, ensure the nylon washer has a .5mm gap between the rear shaft strut.
- Types of grease: Axle or bearing grease. Grease can be purchased at any auto parts supply retailer.



## Electrical / Water Cooling Diagram



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## LiteHawk Parts & Tech

There's nothing worse than buying a new toy, having a question, or needing a replacement part, and then being left out in the cold. No worries! We pride ourselves on the very best customer service!

We have all the parts you'll ever need to keep your new LiteHawk in tip top shape! Like we always say, "accidents happen, even to the best of us"....with that in mind [www.litehawk.ca](http://www.litehawk.ca) is available 24 hours a day, 7 days a week! Our technical personnel are just a phone call away! Monday to Friday 8:30am to 4:00pm EST. 1-800-268-5797 toll free in North America!

We ship your parts Same Day! Except weekends of course - that's when we are out playing too!

## LiteHawk Guarantee

All LiteHawk products have been tested and designed to perform as claimed out of the box. If you have an issue with a product or part of a product please contact us directly. We cover claims towards manufacturing defects. We know that there is nothing worse than having a question or needing a replacement part and having nowhere to go. We have all the parts and help you need to keep your LiteHawk ripping up the water! LiteHawk is not responsible for covering the costs of replacement parts or repair on products that have been damaged due to product use.



## LiteHawk Forum

Trust us, this is no ordinary forum! Staffed by a full team of LiteHawk Moderators whose backgrounds range from Engineering, Component Design, Forum Management, R/C Build and Development....professionally, you are in good hands. We cover everything under the LiteHawk sun! Do-It-Yourself Guides, common questions, Tips and Tricks, User Custom Mods...that's just the beginning, really!

It all has to do with community and we want you to see for yourself! With over one million views to date, we're doing something right!

Oh, Contests. We love to give away stuff, everything that we make is up for grabs. Contests are run at least once per month, so it's a great way to meet everyone and have some fun too!



See all of our Litehawk products in action! Everything from videos that show LiteHawks in their natural environments - flying, sailing, power boating....to helpful In-Depth product information too! It's all just a mouse click away!



Get the inside scoop - by joining LiteHawk INSIDER e-bulletin!

Keep up to speed with our newest product releases - we have some great stuff just around the corner! Ever missed a Forum contest, simply because it happened so fast? Heck, it was over before you even got to the party! LiteHawk will never, ever share your email address - it's private and we respect that.

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