

# Sea Eagle

INSTRUCTION  
MANUAL

RTF



## WARNING

Please read the **ENTIRE** instruction manual to become familiar with the features of the product before operating. Failure to operate the product correctly can result in damage to the product, personal property and cause serious injury.

This is a sophisticated hobby product. It must be operated with caution and common sense and requires some basic mechanical ability. Failure to operate this product in a safe and responsible manner could result in injury or damage to the product or other property. This product is not intended for use by children without direct adult supervision. It is essential to read and follow all the instructions and warnings in the manual, prior to assembly, setup or use, in order to operate correctly and avoid damage or serious injury.

**Age Recommendation: Not for children under 14 years. This is not a toy.**

## MEANING OF SAFETY SIGNAL WORDS

The following terms are used throughout the product literature to indicate various levels of potential harm when operating this product:

- **NOTICE:** Procedures, which if not properly followed, create a possibility of physical property damage AND a little or no possibility of injury.
- **CAUTION:** Procedures, which if not properly followed, create the probability of physical property damage AND a possibility of serious injury.
- **WARNING:** Procedures, which if not properly followed, create the probability of property damage, collateral damage, and serious injury OR create a high probability of superficial injury.

## SAFETY PRECAUTIONS AND WARNINGS

As the user of this product, you are solely responsible for operating in a manner that does not endanger yourself and others or result in damage to the product or the property of others.

- Always keep a safe distance in all directions around your model to avoid collisions or injury. This model is controlled by a radio signal subject to interference from many sources outside your control. Interference can cause momentary loss of control.
- Always operate your model in open spaces away from full-size vehicles, traffic and people.
- Always carefully follow the directions and warnings for this and any optional support equipment (chargers, rechargeable battery packs, etc.).
- Always keep all chemicals, small parts and anything electrical out of the reach of children.
- Always avoid water exposure to all equipment not specifically designed and protected for this purpose. Moisture causes damage to electronics.
- **Never** place any portion of the model in your mouth as it could cause serious injury or even death.
- **Never** operate your model with low transmitter batteries.
- Always keep aircraft in sight and under control.
- Always move the throttle fully down at rotor strike.
- Always use fully charged batteries.
- Always keep transmitter powered on while aircraft is powered.
- Always remove batteries before disassembly.
- Always keep moving parts clean.
- Always keep parts dry.
- Always let parts cool after use before touching.
- Always remove batteries after use.
- **Never** operate aircraft with damaged wiring.
- **Never** touch moving parts.

## CONTENTS

- Airplane
- Battery-200mAh 1S 3.7V 40C Li-Po
- Charger-1S USB Li-Po Charger
- Transmitter

## SPECIFICATIONS

- Length: 13.82in (351mm)
- Wingspan: 20.28in (515mm)
- Weight: 1.3oz (38g)

## FIRST FLIGHT PREPARATION

- Remove and inspect contents
- Begin charging the flight battery
- Install batteries in the transmitter (as required)
- Test the controls
- Familiarize yourself with the controls
- Find a suitable area for flying

## CHARGING WARNINGS



**CAUTION: All instructions and warnings must be followed exactly.**

**Mishandling of Li-Po batteries can result in a fire, personal injury, and/or property damage.**

- By handling, charging or using the included Li-Po battery, you assume all risks associated with lithium batteries.
- If at any time the battery begins to balloon or swell, discontinue use immediately. If charging or discharging, discontinue and disconnect. Continuing to use, charge or discharge a battery that is ballooning or swelling can result in fire.
- Always store the battery at room temperature in a dry area for best results.
- Always transport or temporarily store the battery in a temperature range of 41–104° F (5–40° C). Do not store battery or aircraft in a car or direct sunlight.
- If stored in a hot car, the battery can be damaged or even catch fire.
- Always charge batteries away from flammable materials.
- Always inspect the battery before charging and never charge damaged batteries.
- Always disconnect the battery after charging, and let the charger cool between charges.
- Always constantly monitor the temperature of the battery pack while charging.
- **ONLY USE A CHARGER SPECIFICALLY DESIGNED TO CHARGE LI-PO BATTERIES.**
- Failure to charge the battery with a compatible charger may cause fire resulting in personal injury and/or property damage.
- Never discharge Li-Po cells to below 3V under load.
- Never cover warning labels with hook and loop strips.
- Never leave charging batteries unattended.
- Never charge batteries outside recommended levels.
- Never attempt to dismantle or alter the charger.
- Never allow minors to charge battery packs.
- Never charge batteries in extremely hot or cold places (recommended between 40–120° F or 5–49° C) or place in direct sunlight.

Li-Po cells should not be discharged to below 3V each underload. In the case of the Li-Po battery used for the Airplane, you will not want to allow the battery to fall below

3V during flight.

The Airplane receiver unit features a soft low voltage cutoff (LVC) that occurs when the battery reaches 3V under load. When the soft cutoff occurs, the ESCs of the receiver unit reduce power to the motor (regardless of the power level set with the throttle stick) in order to prevent the voltage of the battery from dropping below 3V. This power reduction usually requires you to land the model immediately, at which point you should power down the model and unplug the flight battery. While it is possible to power the model up and to fly again after the soft LVC occurs, this is NOT recommended as this will over-discharge the battery.

**Continued discharging to the soft LVC will cause permanent damage to the Li-Po battery resulting in lost power and duration during subsequent flights, or failure of the battery entirely.**

Continued attempts to further discharge the battery may also result in loss of control while the motor is running, as the voltage may drop below the minimum operating voltage of the receiver and the other electronics.

Also, you should not fly to the soft LVC every time you fly. Instead, you should be aware of the power level of the battery/airplane throughout the flight, and if at any time the airplane begins to require more throttle than typical to maintain flight, you should land the airplane immediately. Routinely discharging the battery to the soft LVC can still cause permanent damage to the battery.

**Note: Battery performance can suffer greatly in cooler temperatures. It is recommended the batteries be warm before flight.**

## BATTERY CHARGING



**CAUTION:** Only use chargers specifically designed to charge the included Li-Po battery. Failure to do so could result in fire, causing injury or property damage.

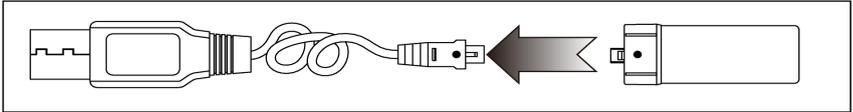


**CAUTION: Never exceed the recommended charge rate.**

**NOTICE:** Inspect the battery to make sure it is not damaged e.g., swollen, bent, broken or punctured. Charge only batteries that are cool to the touch and are not damaged.

1. Insert the charger into a USB port.

2. Connect the battery to the charger as shown in the illustration (Notice: Keep both red dots on the same side.) When you make the connection successfully, the LED on the charger turns solid red, indicating charging has begun. The LED turns solid green when the charge is complete.



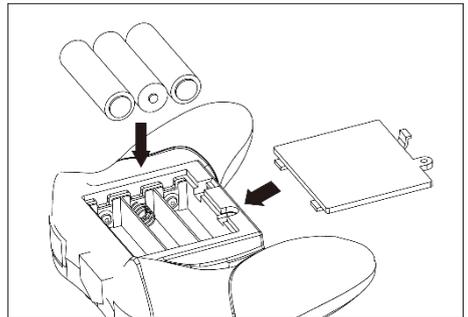
3. Always disconnect the flight battery from the charger immediately upon completion of charging.

**⚠ CAUTION: Once charging is complete, immediately remove the battery. Never leave a battery connected to the charger.**

## INSTALLING THE TRANSMITTER BATTERIES

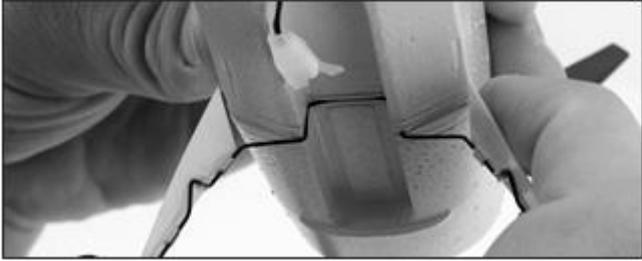
The LED indicator flashes and the transmitter beeps progressively faster as the battery voltage drops.

Replace the transmitter batteries when the transmitter begins to beep.



## REMOVING AND INSTALLING THE LANDING GEAR

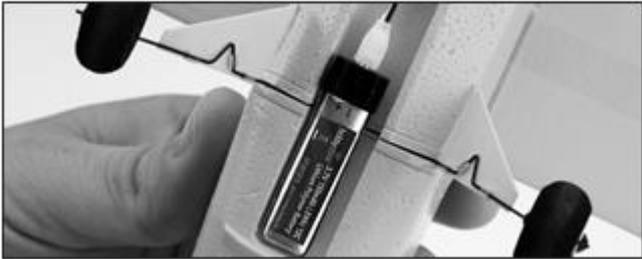
To remove the landing gear, squeeze the wheels together and gently pull the landing gear out of the fuselage. To install the landing gear, squeeze the wheels together and slide the landing gear wire into the slot located on the bottom of the fuselage.



## INSTALLING THE FLIGHT BATTERY

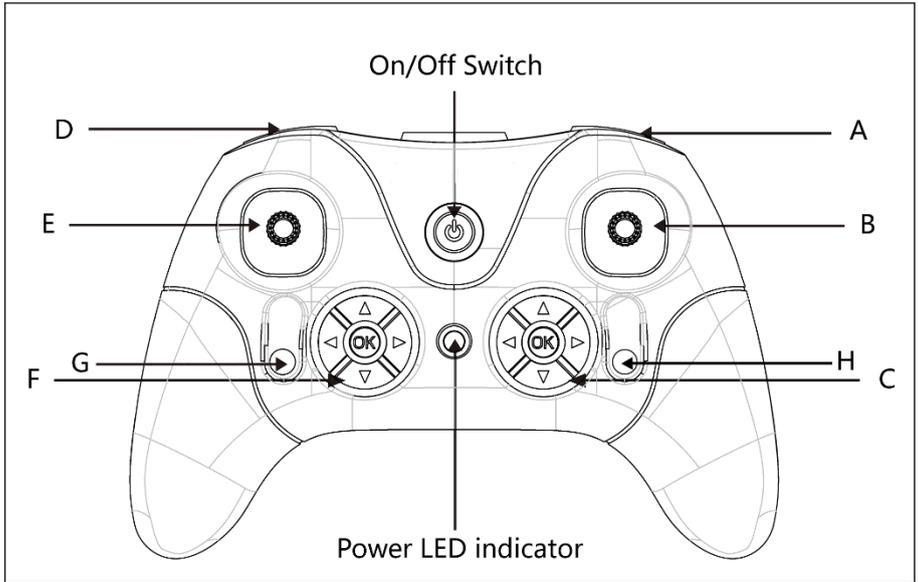
After fully charging the battery, install it in the airplane by placing it into the slot on the bottom of the fuselage with the plug facing toward the front of the airplane.

**Note:** If you are using additional batteries without hook and loop tape, we have included extra hook and loop tape pieces to allow you to use these batteries.



## TRANSMITTER CONTROL





Button	D	G
Mode	3/6 axis	manual mode

## CONTROL TEST

You must test the controls prior to the first flight to ensure none of the servos, linkages or parts were damaged during shipping and handling and the controls function in the correct directions.

Turn the transmitter on first and lower the throttle stick completely. Then, plug the battery into the battery lead of the receiver unit.

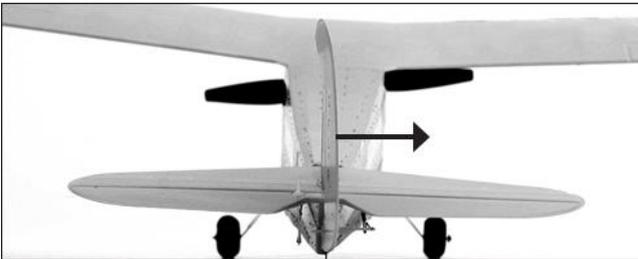
Move the elevator stick on the transmitter forward and backward to check elevator pitch control. When the stick is pushed forward, the elevator should move down. This will cause the nose of the airplane to drop in flight.



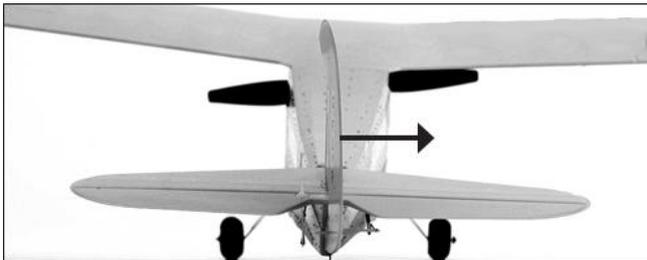
When the elevator stick is moved backward, the elevator should move up. This will cause the nose of the airplane to lift in flight.



Move the rudder stick left and right to check turn control. When the stick is pushed to the right, the rudder should also move to the right.



With the rudder stick pushed to the left, the rudder should move to the left.



If at any time during the test the controls respond in the opposite direction, reverse/change the direction of operation of the flight controls. To do this, consult the Reversing Flight Controls section.

After reconfirming the flight control directions, all controls should function properly.

## **TRANSMITTER AND RECEIVER BINDING**

Power off the transmitter. Press button D and power on the transmitter at the same time. Then release button D, the transmitter beeps and the LED flashes for 5 seconds.

Power on the drone in 5 seconds.

The LED turns solid, indicating the bind is successful.

The LED flashes if bind is failed.

**Note:** You do not need to do it again once the binding is successful.

Power on the remote controller first and then plug in the battery to the drone.

## **RECEIVER CONTROL UNIT DESCRIPTION, ARMING AND MOTOR CONTROL TEST**

Before each flight ALWAYS turn the transmitter on before connecting the flight battery to the receiver unit. Never connect the flight battery to the receiver unit before powering the transmitter on first. After each flight, always disconnect the flight battery from the receiver unit before powering the transmitter off.

**NOTICE:** The only time you should connect the flight battery to the receiver unit before powering the transmitter on is when binding the receiver of the receiver unit to the transmitter. Please see the Transmitter and Receiver Binding section for more information.

The following checklist contains the steps to properly arm and operate the receiver unit, and check proper motor response.

You **MUST** set the throttle stick in the lowest possible position, and, for most transmitters, the throttle trim must also be set to the lowest possible position in order for the receiver unit to arm. If this is the first test flight, or a test flight following repairs, you should also center the rudder, aileron and elevator trims.

When the status LED on the receiver becomes solid red, the receiver unit is initialized and ready for flight. Also, as long as you had the throttle stick in the idle position and the throttle trim in the lowest position during the initialization process, the ESC/motor will now be armed. Use caution as the propeller will now spin with throttle stick input.

**Note:** If the status LED of the receiver does not become solid red, please review the following.

- If after blinking red the status LED becomes solid red, but you have no control of the motor, you have a positive Radio Frequency (RF) link between the transmitter and receiver, but the throttle stick and throttle trim may not be set to the correct positions. Check that the throttle stick is in the lowest possible position, and the throttle trim is set to the middle or a lower-than-the-middle position. If you now have control of the motor, proceed to the next step of the checklist. If the blinking red status LED keeps flashing, you do not have a positive RF link between the transmitter and receiver. Ensure the transmitter has been powered on and the LED indicator on the transmitter glows solid red. If the transmitter is powered on and functioning properly, disconnect the flight battery from the receiver unit, then reconnect it. Now the receiver unit should initialize and arm properly.

**Note:** In the event you inadvertently enter Bind Mode, the LED on the receiver flashes red continuously. If this occurs, cycle the flight battery while the transmitter is on (if previously bound).

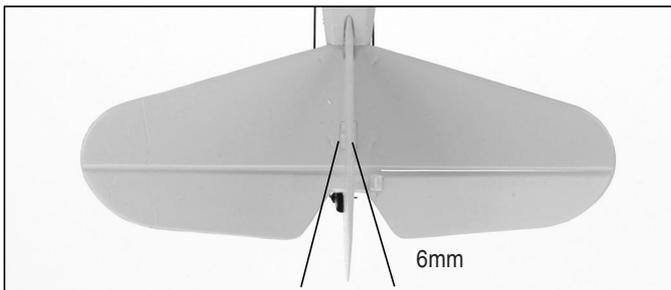
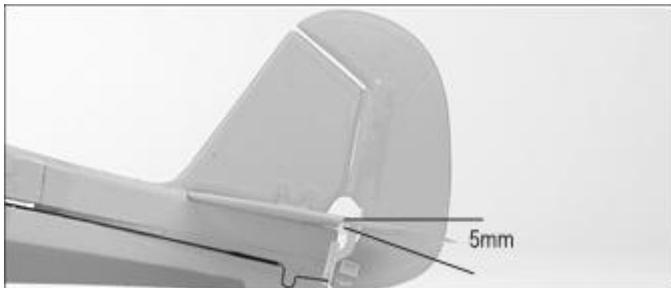
Once you have placed the airplane in a safe area, free of obstructions, and are clear

of the propeller, you can safely power up the model to check for proper operation of the motor.

- Advance the throttle stick upward slowly, just until the propeller begins to spin. DO NOT attempt to fly the airplane at this time. Note the direction the propeller spins. If viewed from the front of the airplane, the propeller spins counterclockwise. If it is spinning backwards, disconnect the battery and reverse the polarity of the motor's input power leads.

## STOCK CONTROL THROW

Out of the box, your Airplane should have the approximate control throws. In production, this can vary by approximately 2mm without any effect on flight performance.



	High Rate	Low Rate
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Elevator	5mm up/down	3mm up/down
Rudder	6mm left/right	4mm left/right

With the battery installed, the center of gravity is approximately 28mm as measured back from the leading edge of the wing. This can vary by approximately 1 to 2mm.

## FLYING CHECKLIST

- Always turn on the transmitter first
- Plug the flight battery into the lead from the receiver
- Allow the receiver to initialize and arm properly
- Make sure all control surfaces are responding correctly to transmitter input
- Ensure propeller is secure and not damaged
- Fly the model
- Land the model
- Unplug the flight battery from the receiver
- Always turn off the transmitter last

## CHOOSING A FLYING AREA

When ready for your first flight, select a relatively open area, the size of a basketball court or larger, that is free of people and obstructions with calm wind (if flown outdoors). Once you have properly trimmed your airplane and become familiar with its handling and capabilities, you will be able to fly in other smaller, less open areas. Larger open areas are preferred for first flights.

## FLYING THE AIRPLANE

Use the low-rate settings for your first flight to become familiar with the flying characteristics before increasing the throw of the control surfaces.

Place the Airplane in position for takeoff (facing into the wind if flying outdoors). Gradually increase the throttle to  $\frac{1}{2}$  to  $\frac{3}{4}$  and steer with the rudder. Once the Airplane reaches flying speed it lifts off on its own. The Airplane climbs with  $\frac{3}{4}$  to full throttle,

and roughly  $\frac{1}{2}$  throttle allows the Airplane to fly without climbing or descending.

**Note: If at any time you become disoriented or get in trouble, pull the power all the way off and release the controls. The Airplane will stabilize into a steady gliding descent.**

1. After launching, your Airplane will climb at full throttle. Keep the throttle  $\frac{3}{4}$  to full on until reaching a safe altitude. At this same time, make sure you are keeping the airplane steady, directed on its intended path.
2. Make necessary right and left adjustments to keep the plane on course. After reaching 4–6 feet of altitude, you can make the directional changes you desire.
3. Remember—the Airplane is a small, lightweight aircraft. Do not allow the plane to get too far away from you. When the plane is farther away from you it is harder to see and could cause you to lose orientation.
4. Avoid holding the stick full right or left for more than two seconds. This will cause the plane to enter a spiral and could threaten your Airplane.
5. Do not try to climb too fast by pulling all the way back on the stick (up elevator), or your plane may enter into a stall. Instead, climb by giving small amounts of elevator or by increasing throttle.
6. Damage/bends to the wings or tail can greatly affect flight control. Repair or replace damaged parts immediately.

## Sharp Turns

In order to make a sharper turn, move the stick in the desired direction and add some up elevator (pull back on the stick). The plane will make a sharper banking turn.

**Note:** With the throttle set at low or off (gliding), the plane will not turn as fast as when you are flying at or near full throttle.

## Rudder Trim

If the model wants to constantly turn one direction, use the digital trim buttons to correct. Your Airplane should fly straight with the control stick at neutral. Always make trim changes in one-click intervals.

## THROTTLE ADJUSTMENT

1. Climb to an altitude of 6–12 feet with full throttle.

2. To achieve and maintain a level “cruising” altitude, reduce the power by moving the throttle stick down to approximately 50%. The throttle stick is proportional, so you can add or reduce throttle in small increments as needed to maintain altitude.
3. To reduce altitude, reduce throttle.
4. To increase altitude, increase throttle.

## **USING ELEVATOR**

Your Airplane is equipped with a third channel for elevator (pitch control). Pulling back on the stick provides up elevator. This allows for shorter takeoffs, better flares for landing, better climb rates and more effective turns. Pulling back too far on the elevator, however, causes the airplane to enter a stall, causing the nose of the airplane to drop. To avoid crashing from a stall, always maintain enough altitude to recover.

Just after a stall, the nose of the airplane falls and the plane looks like it is diving. To pull out of a stall, pull back slowly on the elevator stick once your Airplane has built up airspeed. Remember, pulling back too quickly or for too long will cause the airplane to re-enter a stall. Effectively avoiding and recovering from stalls requires experience. Always seek the help of an experienced radio control pilot if you are not familiar with pitch control. Failure to do so could result in a crash and significant damage to your airplane.

### **Elevator Trim**

If the Airplane tends to go up or down, use the elevator digital trim buttons next to the control stick to correct. The model should fly straight with the control stick at neutral and should have a steady climb at full throttle.

## **LANDING YOUR AIRPLANE**

When you notice your Airplane no longer climbs well under full power (normally after approximately 6–9 minutes), the battery is getting low and it is time to land. Bring in your aircraft toward the desired landing spot. If flying outside, bring the airplane directly into the light wind. Gradually reduce throttle to reach an altitude of

approximately 4 feet. At this point, reduce even more throttle and your Airplane should glide in softly for a landing.

## **Auto Cutoff**

When the battery gets low enough, this feature automatically shuts off the motor and saves enough battery power to maintain control of the tail so you can land correctly and safely. If the motor cuts off, prepare to land immediately. If you are gliding down and have some time to rest the battery, you may re-arm the motor by moving the throttle slider back to off then advancing it again. This only allows the motor to run briefly, and may allow you to better adjust your landing. Do not re-arm the motor more than once.

**Note:** Your Airplane should be landed on a smooth surface (such as concrete or wood) so the landing gear can work effectively.

**Expert Tip:** As you get better and more experienced at flying, try adding a bit of “up” elevator just prior to landing to “flare” the plane. With some practice, your landings should become smooth and on target.



**CAUTION: Do not attempt to catch the airplane or injury may occur.**

**Remember, there is a spinning propeller on the front of the plane that can cause injury! Also, remember to cut power to the motor right before you land to prevent damage to the propeller.**

IN THE UNFORTUNATE EVENT OF A CRASH OR PROPELLER STRIKE, NO MATTER

HOW MINOR OR MAJOR, YOU MUST LOWER THE THROTTLE STICK AND TRIM TO THEIR LOWEST POSSIBLE POSITIONS AS QUICKLY AS POSSIBLE TO PREVENT

DAMAGE TO THE ESC OF THE RECEIVER UNIT.

Failure to lower the throttle stick and trim to the lowest possible positions in the event of a crash could result in damage to the ESC in the receiver unit, which may require replacement of the receiver unit.

**NOTICE: Crash damage is not covered under the warranty.**

