HORIZON HOBBY

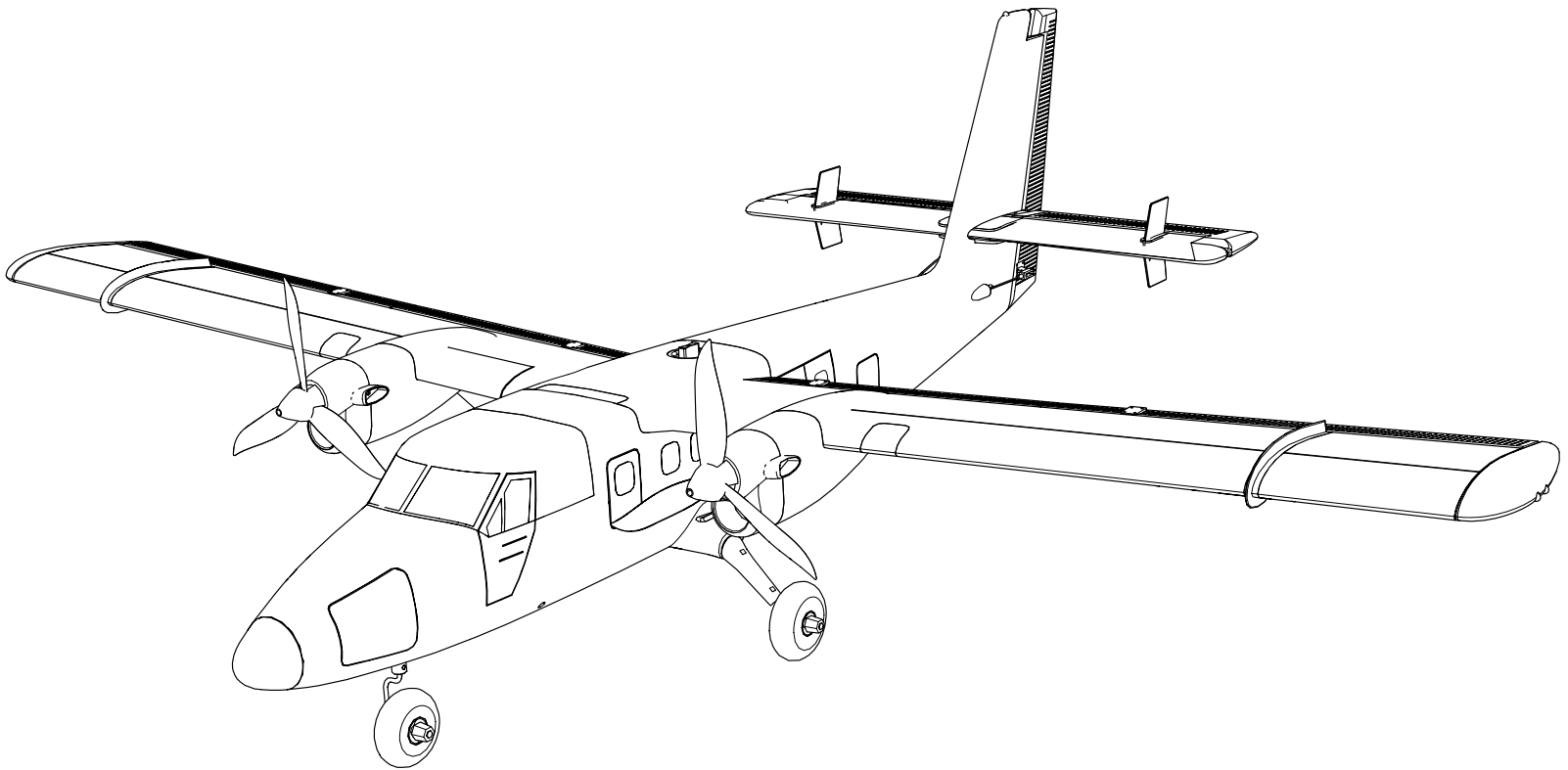## E-flite
ADVANCING ELECTRIC FLIGHT

Twin Otter 1.2m

Instruction Manual
Bedienungsanleitung
Manuel d'utilisation
Manuale di Istruzioni

SAFE®
SAFE® Select Technology, Optional Flight Envelope Protection

Bind-N-Fly® BASIC   Plug-N-Play®

Meaning of Special Language:
The following terms are used throughout the product literature to indicate various levels of potential harm when operating this product: 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. CAUTION: Procedures, which if not properly followed, create the probability of physical property damage AND a possibility of serious injury. NOTICE: Procedures, which if not properly followed, create a possibility of physical property damage AND little or no possibility of injury.

⚠ **WARNING:** 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. Do not use with incompatible components or alter this product in any way outside of the instructions provided by Horizon Hobby, LLC. This manual contains instructions for safety, operation and maintenance. 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.

14+ **AGE RECOMMENDATION:** Not for children under 14 years. This is not a toy.

⚠ **WARNING AGAINST COUNTERFEIT PRODUCTS:** If you ever need to replace your Spektrum receiver found in a Horizon Hobby product, always purchase from Horizon Hobby, LLC or a Horizon Hobby authorized dealer to ensure authentic high-quality Spektrum product. Horizon Hobby, LLC disclaims all support and warranty with regards, but not limited to, compatibility and performance of counterfeit products or products claiming compatibility with DSM or Spektrum technology.

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 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.

- Always ensure failsafe is properly set before flying.

- Never operate aircraft with damaged wiring.

- Never touch moving parts.

Quick Start Information

Transmitter Setup	Set up your transmitter using the transmitter setup chart	
Dual Rates		Low Rate	Hi Rate
	Ail	8mm	12mm
	Ele	8mm	12mm
	Rud	10mm	20mm
	Flaps	Half ▼=10mm	Full ▼=20mm
Center of Gravity (CG)	45mm (±5mm) from leading edge of wing at the fuselage	
Flight Timer Setting	6 minutes, initially	

Specifications

	BNF BASIC	PNP PLUG-N-PLAY
Motors: 2210–1350Kv (EFLM300514)	Installed	Installed
ESCs: 20A Brushless ESC (EFLA300515)	Installed	Installed
Servo: 9 gram servos (SPMSA330R)	Installed	Installed
Receiver: Spektrum™ AR631 6-Channel Sport Receiver (SPMAR631)	Installed	Required to Complete
Recommended Battery: 11.1V 3S 2200–3200mAh Li-Po (SPMX22003S30, SPMX22003S50, SPMX22003S100)	Required to Complete	Required to Complete
Recommended Battery Charger: Compatible LiPo battery balancing charger	Required to Complete	Required to Complete
Recommended Transmitter: Full-Range 6 channel 2.4GHz with Spektrum DSMX® technology with adjustable Dual Rates	Required to Complete	Required to Complete

(48 in 1219mm)

36.75 in (933mm)

37~39.5 oz
(1049~1118g)
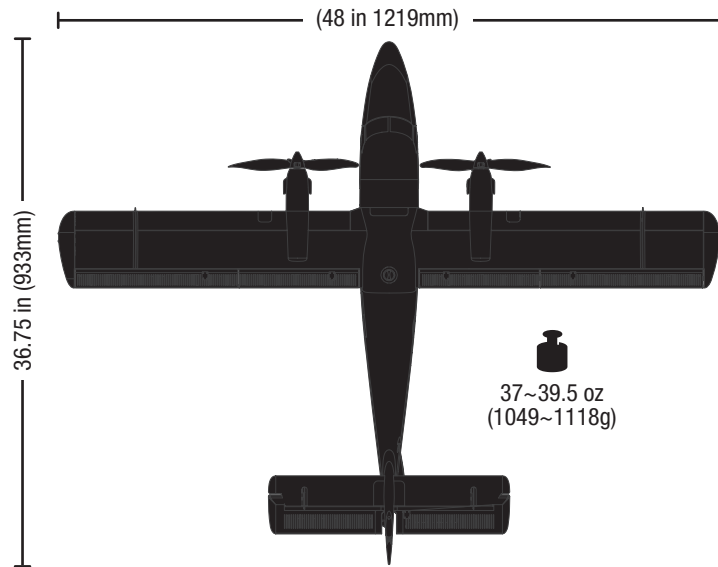
RECEIVER BIND INFORMATION (BNF)

Channels	6
Frequency	2405–2476 MHz
Compatibility	DSM2 and DSMX

Box Contents

Table of Contents

As of this printing, you may be required to register with the FAA if you own this product.
For up-to-date information on how to register with the FAA, visit
https://registermyuas.faa.gov/
For additional assistance on regulations and guidance on UAS usage, visit
https://knowbeforeyoufly.org/

To receive product updates, special offers and more,
register your product at https://www.horizonhobby.com/content/e-flite-rc

SAFE® Select Technology *(BNF Basic)*

The BNF Basic version of this airplane includes SAFE Select technology which can offer an extra level of protection in flight. Use the following instructions to make the SAFE Select system active and assign it to a switch. When enabled, SAFE Select prevents the airplane from banking or pitching past predetermined limits, and automatic self-leveling keeps the airplane flying in a straight and level attitude when the aileron, elevator and rudder sticks are at neutral.

SAFE Select is enabled or disabled during the bind process. When the airplane is bound with SAFE Select enabled, a switch can be assigned to toggle between SAFE Select mode and AS3X mode. AS3X® technology remains active with no banking limits or self leveling any time SAFE Select is disabled or OFF.

SAFE Select can be configured three ways:
- • SAFE Select Off: Always in AS3X mode
- • SAFE Select On with no switch assigned: Always in SAFE Select mode
- • SAFE Select On with a switch assigned: Assigned switch toggles between SAFE Select mode and AS3X mode

Preflight

|			
1	Remove and inspect contents.	9	Make sure linkages move freely.
2	Read this instruction manual thoroughly.	10	Test the flap operation.
3	Charge the flight battery.	11	Perform the Control Direction Test with the transmitter.
4	Set up the transmitter using transmitter setup chart.	12	Perform the AS3X Control Direction Test with the aircraft.
5	Fully assemble the airplane.	13	Adjust flight controls and transmitter.
6	Install the flight battery in the aircraft (once it has been fully charged).	14	Perform a radio system Range Test.
7	Check the Center of Gravity (CG).	15	Find a safe open area to fly.
8	Bind the aircraft to your transmitter.	16	Plan flight for flying field conditions.

Model Assembly

Landing Gear Installation

1. Remove the screw (2mm x 15mm) on the bottom of the fuselage and remove the landing gear cover.

2. Install the six mounting screws (2mm x 10mm) and three landing gear mounting clamps as shown.

3. Reinstall the landing gear cover and tighten the fuselage screw (2mm x 15mm).

4. Install the nose wheel, aligning the flat area on the nose gear with the set screw in the nose gear bracket.

   TIP: The steering arm for the water rudder can be removed when flying with wheeled landing gear if desired.

5. Tighten the set screw.

TIP: Apply a drop of CA to the landing gear strut covers and nose gear set screw, if desired.
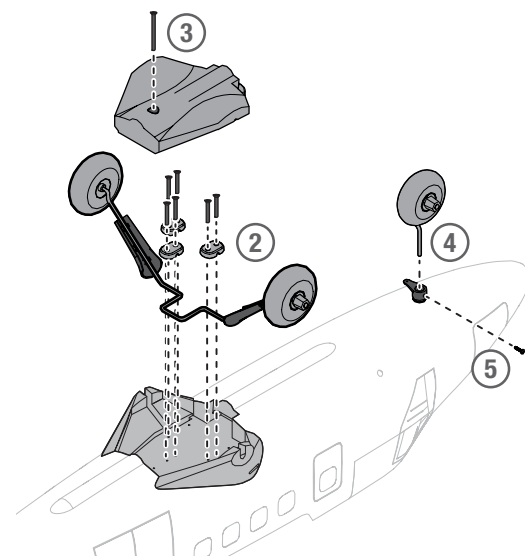
Horizontal Tail Installation

1. Slide the horizontal stabilizer into place within the vertical fin, inserting it with the elevator control horn on the bottom of the stabilizer and the right side of the fuselage.

2. Install two screws (2mm x 10mm) on each side of the horizontal tail, as shown.

3. Move the elevator up and down several times. If the elevator joiner binds against the fuselage, continue to flex it until the binding is eliminated to allow for proper movement.

   TIP: Check and tighten any screws securing the control horns as needed. Do not overtighten the screws as it could damage the control surface and/or control horn.

4. Snap the elevator clevis into place, then snap the rudder clevis into place, if needed.

5. Slide the horizontal stabilizing fins into place.

TIP: You may apply a drop of CA to secure the horizontal stabilizing fins, if desired.
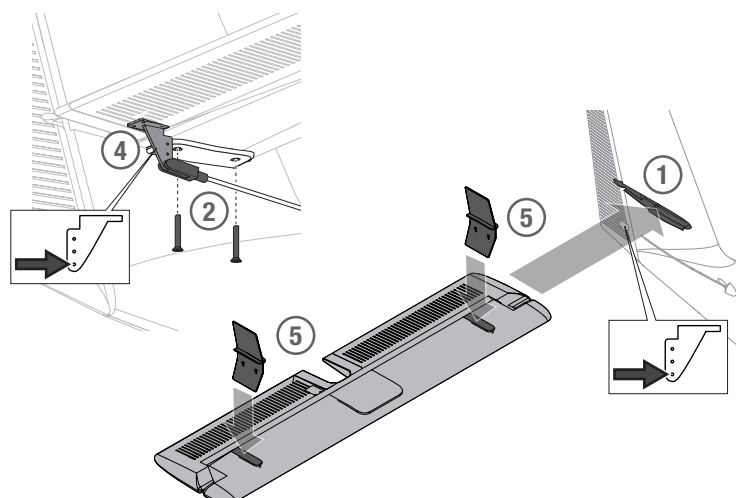
Model Assembly *Continued*

Wing Installation

1. Connect the ESC, ailerons, LED lights, and flaps to the receiver in the following locations:
   1–ESC   2–Aileron   3–Elevator   4–Rudder   5–LED Lights   6–Flaps

2. Install the wing, then secure it by tightening the thumb screw as shown.

3. Slide each wing strut into the fuselage slot.

4. Snap each wing strut into place at rear of motor nacelle.

AR631 Port Assignments
BND/PRG = BIND
1 = ESC
2 = Aileron
3 = Elevator
4 = Rudder
5 = LED Lights
6 = Flaps
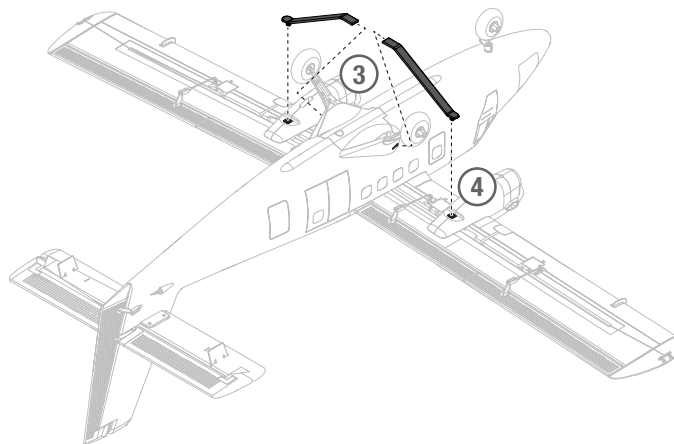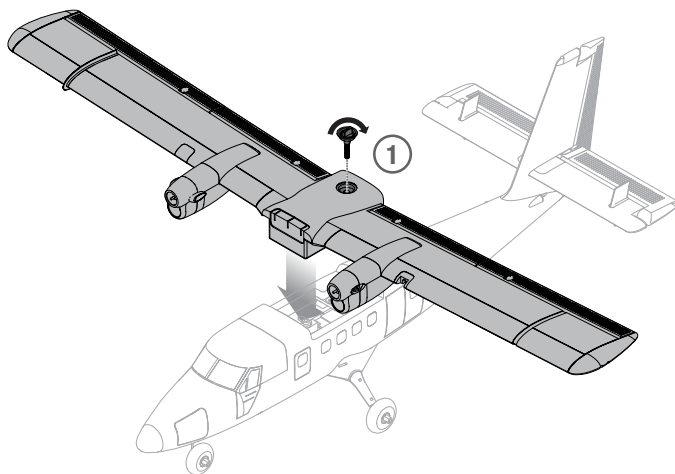
Propeller Installation

⚠ **WARNING:** Do not install the propeller until all system setups are complete. Failure to heed this warning could result in severe personal injury.

1. Determine which propeller matches each image and install as shown.

2. Install the left propeller (T7056C) on the left propeller adaptor.
   Install the right propeller (T7056CR) on the right propeller adaptor.
   Tighten each nut to secure each propeller in place.
   The nut securing the T7056CR propeller on the right wing is reverse threaded.

3. Install the spinners and secure them in place with a 2mm x 10mm machine screw.
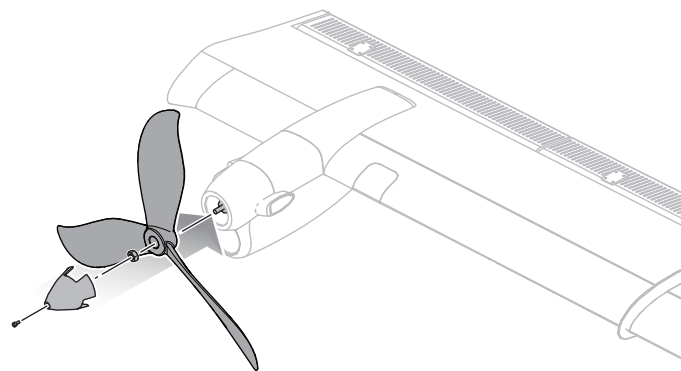
T7056CR   **T7056C**
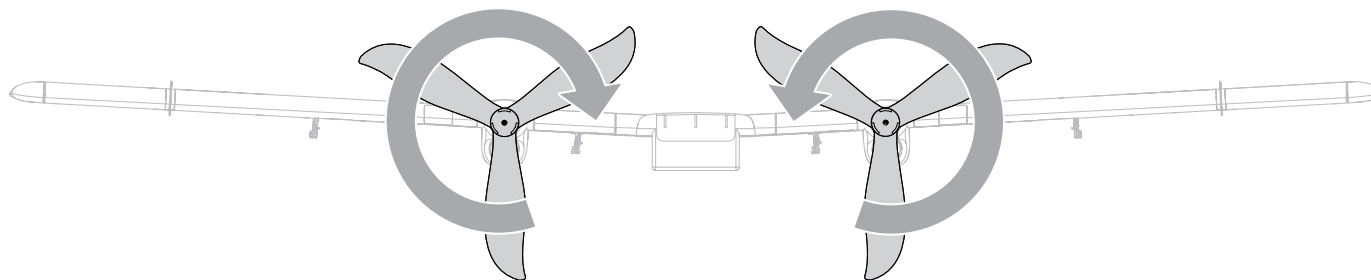
Receiver Installation *(PNP)*

The Spektrum AR631 receiver is recommended for this airplane. If you choose to install another receiver, ensure that it is at least a 5-channel full range (sport) receiver. Refer to your receiver manual for correct installation and operation instructions.

Installation (AR631 shown)
1. Mount the receiver parallel to the length of the fuselage as shown. Use double-sided servo tape.

⚠️ **CAUTION:** Incorrect installation of the receiver could cause a crash.

2. Attach the appropriate control surfaces to the their respective ports on the receiver using the chart in the illustration.

AR631 Port Assignments
BND/PRG = BIND
1 = ESC
2 = Aileron
3 = Elevator
4 = Rudder
5 = LED Lights
6 = Flaps

Transmitter Setup *(BNF)*

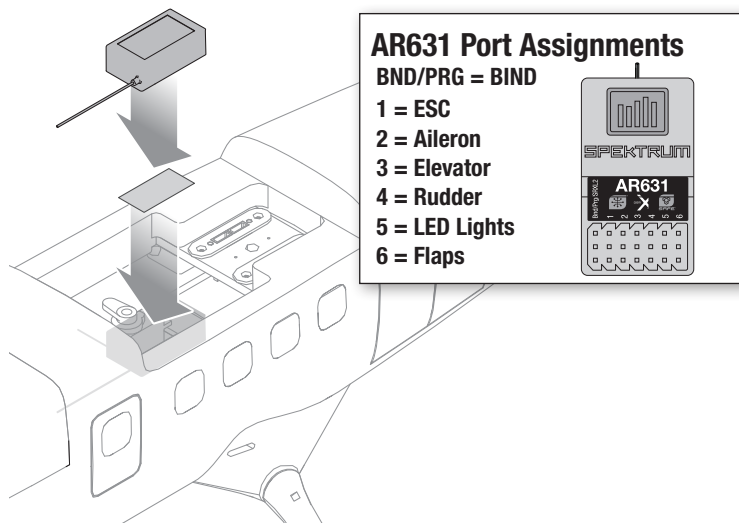**IMPORTANT:** After you set up your model, always rebind the transmitter and receiver to set the desired failsafe positions.

If you are using a 6 channel transmitter, the FLAP Channel (CH 6) controls the flaps.

Dual Rates

Attempt your first flights in Low Rate. For landings, use high rate elevator.

NOTICE: To ensure AS3X technology functions properly, do not lower rate values below 50%. If lower rates are desired, manually adjust the position of the pushrods on the servo arm.

NOTICE: If oscillation occurs at high speed, refer to the Troubleshooting Guide for more information.

Expo

After first flights, you may adjust expo in your transmitter.

[†]Some of the terminology and function locations used in the iX12 and iX20 programming may be slightly different than other Spektrum AirWare™ radios. The names given in parenthesis correspond to the iX programming terminology. Consult your transmitter manual for specific information about programming your transmitter.

*Flap programming values may vary slightly. For your initial flights use the recommended flap travel settings provided in the Flaps section and adjust the flap travel to your preference on subsequent flights.

Computerized Transmitter Setup	
Start all transmitter programming with a blank ACRO model (perform a model reset), then name the model.	
Set Dual Rates to	HIGH 100%
	LOW 70%
Set Expo to	HIGH 20%
	LOW 15%
Set Servo Travel to	100%
Set Throttle Cut to	-130%
DXe	Refer to spektrumrc.com for the appropriate download setup.
DX6i	1. Go to the SETUP LIST MENU
	2. Set MODEL TYPE: ACRO
	3. Go to ADJUST LIST MENU
	4. Set TRAVEL: FLAPS ↑-100 ↓100
	5. Set FLAPS: Norm ↓-100 Flap Elev 0 LAND ↑100 Flap Elev 35
DX7S DX8	1. Go to the SYSTEM SETUP
	2. Set MODEL TYPE: AIRPLANE
	3. Set WING TYPE: 1 AIL 1 FLAP
	4. Go to the FUNCTION LIST

	5. Set FLAP SYSTEM: Choose Flap
	    NORM: -100% FLAP
	    MID: 0% FLAP 25% Elevator
	    LAND: 100% FLAP 35% Elevator
	    SPEED 2.0S: SWITCH = D

DX6e DX6 (Gen2) DX7 (Gen2) DX8e DX8 (Gen2) DX9 DX10t DX18 DX20 iX12 iX20 NX6 NX8 NX10	1. Go to the SYSTEM SETUP (Model Utilities)[†]
	2. Set MODEL TYPE: AIRPLANE
	3. Set AIRCRAFT TYPE (Model Setup, Aircraft Type)[†]: WING: 1 AIL 1 FLAP
	4. Set CHANNEL ASSIGN (Model Setup, Channel Assign)[†]: (Default switch assignments with a new model setup) Flap (CH6): SWITCH D
	5. Go to the FUNCTION LIST (Model Adjust)[†]

	6. Set FLAP SYSTEM:
	    SELECT SWITCH D:
	    POS 0: -100% FLAP*
	    POS 1: 0% FLAP* 25% Elevator
	    POS 2: 100% FLAP* 35% Elevator
	    SPEED 2.0

Twin Otter 1.2m

Battery Installation and ESC Arming

Battery Selection

A 3S 2200-3200mAh LiPo battery is required. Refer to the Optional Parts List for battery recommendations. If using a battery other than those listed, the battery should be within the range of capacity, dimensions and weight of the Spektrum Li-Po battery pack to fit in the fuselage.

⚠ **CAUTION:** Add nose weight for lighter batteries. Always verify the model balances within the recommended CG range before flying. Attempting to fly the model with an aft CG will cause the model to be unstable.

⚠ **CAUTION:** Never adjust the CG while a battery is connected.

⚠ **CAUTION:** When replacing the wheels with floats, recheck the CG. Place the battery further forward to compensate for the CG change.

1. For added security, apply the loop side (soft side) of the optional hook and loop tape to the bottom of your battery, and the hook side to the battery tray.
2. Remove the battery hatch.
3. Install the fully charged battery in the center of the battery compartment as shown. Secure using the hook and loop straps.
4. Connect the battery to the ESC. Two beeps indicate the ESCs are armed.

⚠ **CAUTION:** Always keep hands away from the propeller. When armed, the motor will turn the propeller in response to any throttle movement.

5. Keep the aircraft immobile and away from wind or the system will not initialize.
   • The motor will emit two even tones when the battery is connected and the ESC has a throttle signal.
   • The receiver LED will illuminate orange when it is initialized.
   • Fast continuous beeps indicate the ESCs are not armed.
6. Reinstall the battery hatch.
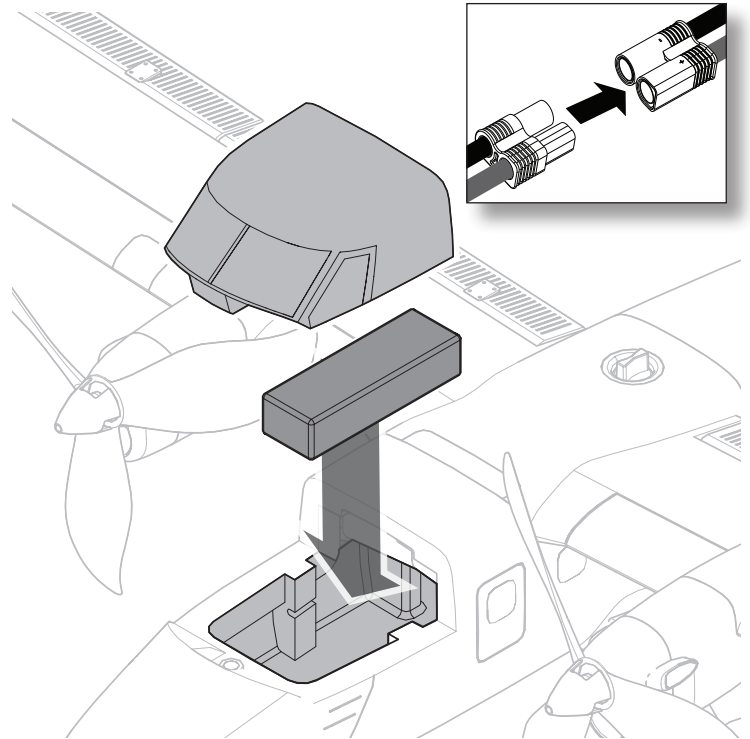
ESC Error Tone	Tone Meaning	Possible problem
Continuously repeating single tone	Abnormal throttle signal	Transmitter and receiver not bound
		Throttle lead damaged or not plugged into receiver
		Throttle lead plugged into receiver backward
	Throttle signal not at low position	Throttle stick not at low position
		Throttle reversed
		Throttle trim raised

Center of Gravity

The Center of Gravity (CG) location is measured from the leading edge of the wing at the root. The CG will be affected by cargo or battery changes. Always verify the CG is within the recommended range before flight.

IMPORTANT: Place the CG 45mm (±5mm) from the leading edge.

⚠ **CAUTION:** Install the battery but do not arm the ESC while checking the CG. Personal injury may result.

45mm ±5mm
back from leading edge
of wing at the fuselage.
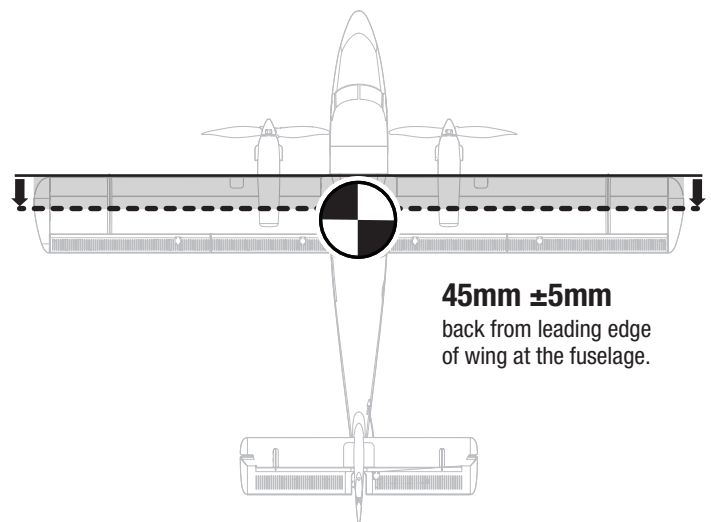
# Transmitter and Receiver Binding / Switching ON and OFF SAFE Select *(BNF Basic)*

This product requires an approved Spektrum™ DSM2®/DSMX® compatible transmitter. Visit www.bindnfly.com for a complete list of approved transmitters.

The aircraft has an optional SAFE Select feature, which can be switched ON or OFF easily by binding in a specific manner as described below.

IMPORTANT: Before binding a transmitter, read the Transmitter Setup section of this manual to ensure that your transmitter is properly programmed for this aircraft.
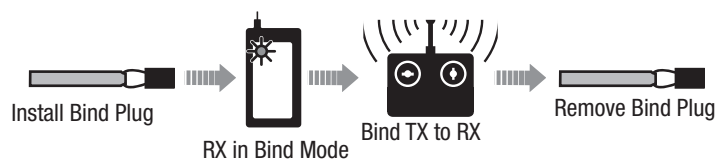
Bind Plug Installation

BIND PLUG
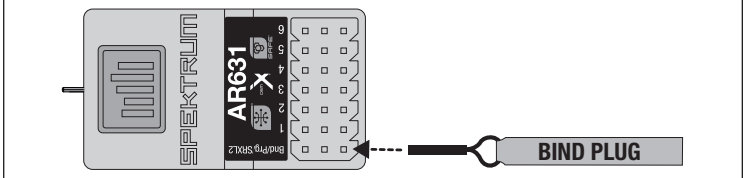
Switching ON SAFE Select Binding Sequence

Install Bind Plug

RX in Bind Mode

Remove Bind Plug

Bind TX to RX
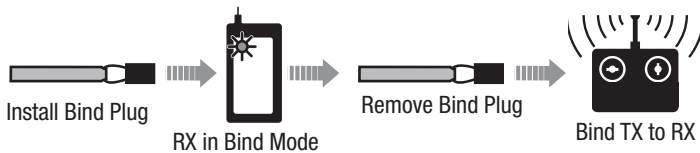
Binding Procedure / Switching ON SAFE Select

IMPORTANT: The included AR631 receiver has been programmed for operation specifically for this aircraft. Refer to the receiver manual for correct setup if the receiver is replaced or is used in another aircraft.

⚠ **CAUTION:** When using a Futaba® transmitter with a Spektrum DSM® module, you must reverse the throttle channel and rebind. Refer to your Spektrum module manual for binding and failsafe instructions. Refer to your Futaba transmitter manual for instructions on reversing the throttle channel.

1. Move the transmitter controls to neutral (flight controls: rudder, elevators and ailerons) or to low positions (throttle, throttle trim).*

2. Install a bind plug in the receiver bind port.

3. Place the aircraft level on its wheels, then connect the flight battery to the ESC. The motor will produce a series of sounds. The orange bind LED on the receiver will begin to flash rapidly.

4. **Remove the bind plug from the bind port.**

5. Take three steps away from the aircraft /receiver and then put the transmitter in bind mode. Refer to your transmitter's manual for specific binding instructions.
IMPORTANT: Do not point the transmitter's antenna directly at the receiver while binding.
IMPORTANT: Keep away from large metal objects while binding.

6. The receiver is bound to the transmitter when the orange bind light on the receiver stays orange. The ESC will produce a series of sounds. The tones indicate the ESC is armed, provided the throttle stick and throttle trim are low enough to trigger arming.

IMPORTANT: Once bound, the receiver will retain its bind settings for that transmitter until it has been intentionally changed, even when power is cycled ON and OFF. Repeat the binding process as necessary.

SAFE Select ON Indication
Every time the receiver is powered ON the surfaces will cycle back and forth **twice** with a slight pause at neutral position to indicate that SAFE Select is switched ON.

The throttle will not arm if the transmitter's throttle control is not put at the lowest position. If problems are encountered, follow the binding instructions and refer to the transmitter troubleshooting guide for other instructions. If needed, contact the appropriate Horizon Product Support office.

Switching OFF SAFE Select Binding Sequence

Install Bind Plug

RX in Bind Mode

Bind TX to RX

Remove Bind Plug

Binding Procedure / Switching OFF SAFE Select

IMPORTANT: The included AR631 receiver has been programmed for operation specifically for this aircraft. Refer to the receiver manual for correct setup if the receiver is replaced or is used in another aircraft.

⚠ **CAUTION:** When using a Futaba® transmitter with a Spektrum DSM module, you must reverse the throttle channel and rebind. Refer to your Spektrum module manual for binding and failsafe instructions. Refer to your Futaba transmitter manual for instructions on reversing the throttle channel.

1. Move the transmitter controls to neutral (flight controls: rudder, elevators and ailerons) or to low positions (throttle, throttle trim).*

2. Install a bind plug in the receiver bind port.

3. Place the aircraft level on its wheels, then connect the flight battery to the ESC. The motor will produce a series of sounds.
The orange bind LED on the receiver will begin to flash rapidly. DO NOT remove the bind plug at this time.

4. Take three steps away from the aircraft /receiver and then put the transmitter in bind mode. Refer to your transmitter's manual for specific binding instructions.
IMPORTANT: Do not point the transmitter's antenna directly at the receiver while binding.
IMPORTANT: Keep away from large metal objects while binding.

5. The receiver is bound to the transmitter when the orange bind light on the receiver stays orange. The ESC will produce a series of sounds. The tones indicate the ESC is armed, provided the throttle stick and throttle trim are low enough to trigger arming.

6. **Remove the bind plug from the bind port.**

IMPORTANT: Once bound, the receiver will retain its bind settings for that transmitter until it has been intentionally changed, even when power is cycled ON and OFF. Repeat the binding process as necessary.

SAFE Select OFF Indication
Every time the receiver is powered ON the surfaces will cycle back and forth **once** to indicate that SAFE Select has been switched OFF.

The throttle will not arm if the transmitter's throttle control is not put at the lowest position. If problems are encountered, follow the binding instructions and refer to the transmitter troubleshooting guide for other instructions. If needed, contact the appropriate Horizon Product Support office.

***Failsafe**
If the receiver loses transmitter communication, the failsafe will activate. When activated, failsafe moves the throttle channel to its preset failsafe position (low throttle) that was set during binding. All other channels move to actively level the aircraft in a descending turn.

SAFE® Select Switch Designation

SAFE® Select technology can be assigned to any open switch (2 or 3 position) controlling a channel (5–9) on your transmitter. Once assigned to a switch, SAFE select ON gives you the flexibility to choose SAFE technology or AS3X mode while in flight. If the aircraft is bound with SAFE select OFF, the aircraft will be in AS3X mode exclusively.

IMPORTANT: Before assigning your desired switch, ensure that the travel for that channel is set at 100% in both directions and the aileron, elevator, rudder and throttle are all on high rate with the travel at 100%.

⚠ **CAUTION:** Keep all body parts well clear of the propeller and keep the aircraft securely restrained in case of accidental throttle activation.

TIP: SAFE Select is assignable on any unused channels 5–9. See your transmitter manual for more information about assigning a switch to a channel.

TIP: Use your radio channel monitor to confirm that the four primary channels are showing 100% travel while assigning the switch.

TIP: Use the channel monitor to make sure the switch you are assigning for SAFE Select is active and driving a channel between 5-9 and that it is traveling 100% in each direction.

TIP: Make sure your four primary channels are not reversed if you are having trouble assigning a SAFE Select switch.

Assigning a Switch

1. Bind the aircraft to choose SAFE Select ON. This will allow the system to be assigned to a switch.
2. Hold both transmitter sticks to the inside bottom corners and toggle the desired switch 5 times (1 toggle = full up and down) to assign that switch. The control surfaces of the aircraft will move, indicating the switch has been selected.
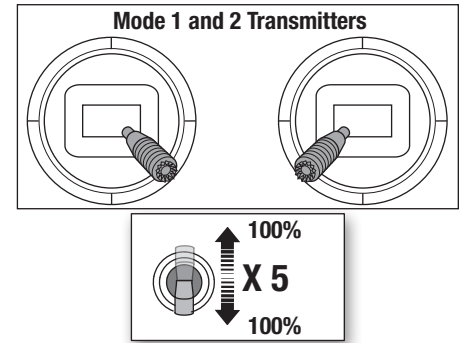
Repeat the process to assign a different switch or to deactivate the current switch if desired.

Mode 1 and 2 Transmitters

100%
X 5
100%

Control Surface Centering

After assembly and transmitter setup, confirm that the control surfaces are centered. The model must be powered up bound to the transmitter in AS3X mode, with the throttle left at zero. When enabled, SAFE mode is active at power up. AS3X mode is activated when the throttle is raised above 25% for the first time after being powered on. It is normal for the control surfaces to respond to aircraft movement if the aircraft is in AS3X or SAFE modes.

1. Verify the trims and subtrims on your transmitter are 0.
2. Power up the model in AS3X mode and leave the throttle at 0.
3. Verify the control surface tips are mechanically centered.

4. If you need to make an adjustment, rotate the clevis on the linkage to alter the linkage length between the servo arm and the control horn.

After binding a transmitter to the aircraft receiver, set the trims and sub-trims to 0, then adjust the clevises to center the control surfaces.

5. Center the elevator approximately 3mm down from neutral for level flight.

≈3mm
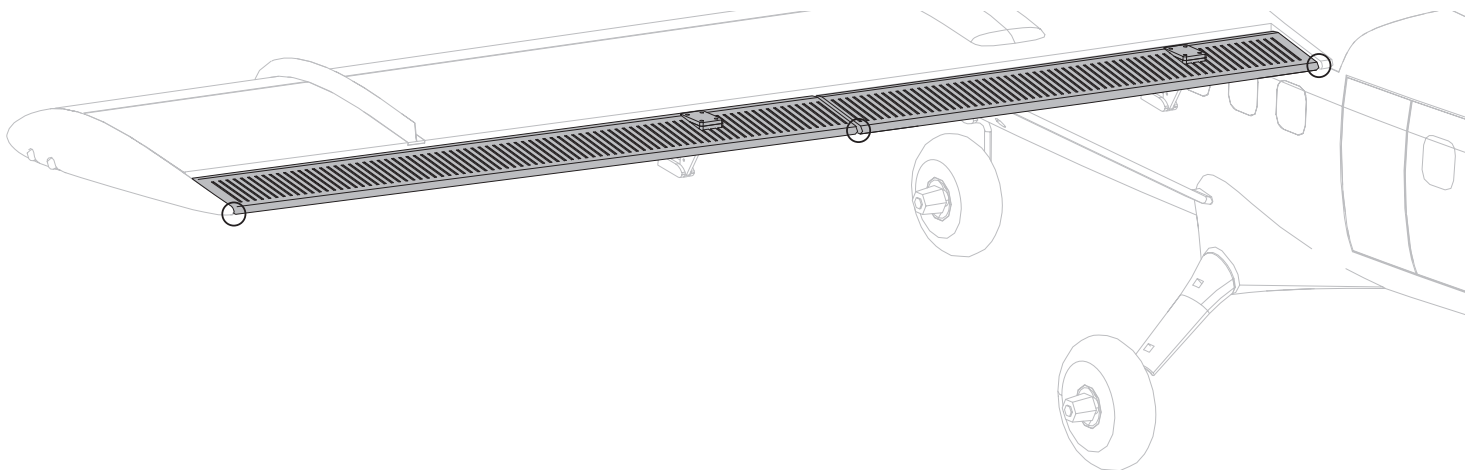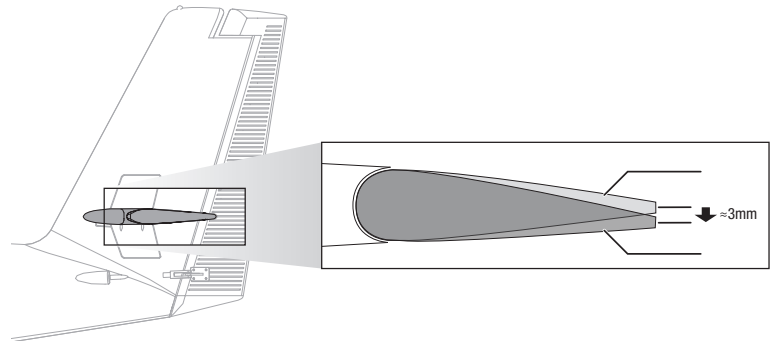
Control Surface Direction

Power on the transmitter and connect the battery. Use the transmitter to operate the aileron and elevator controls. View the aircraft from the rear when checking the control directions.
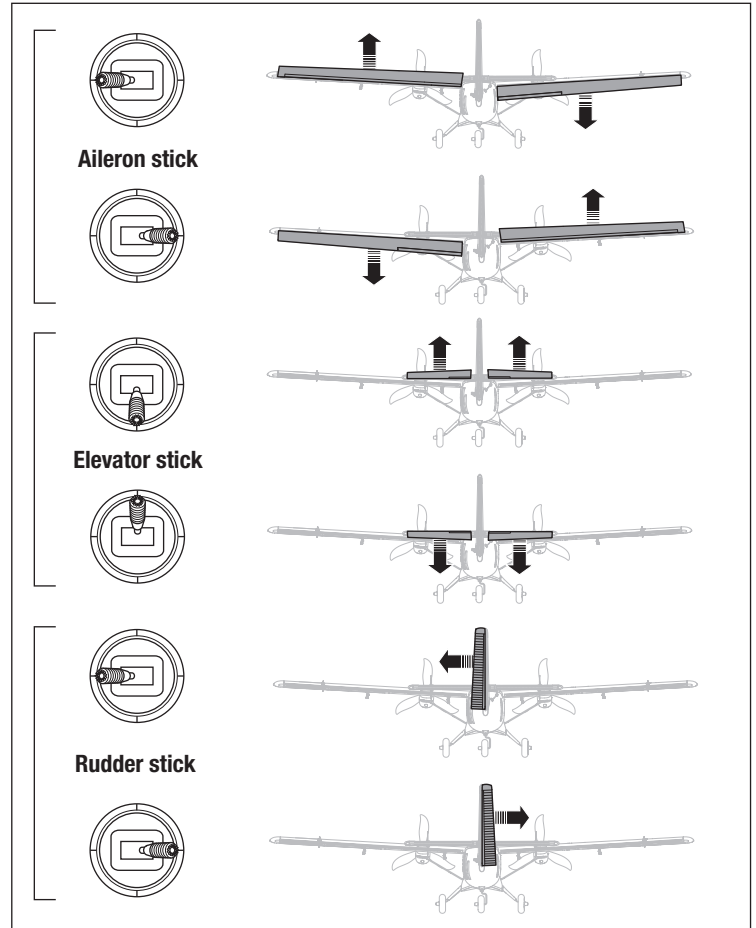
Ailerons

1. Move the aileron stick to the left. The right aileron should move down and the left aileron up, which will cause the aircraft to bank left.

2. Move the aileron stick to the right. The right aileron should move up and the left aileron down, which will cause the aircraft to bank right.

Aileron stick

Elevators

1. Pull the elevator stick back. The elevators should move up, which will cause the aircraft to pitch up.

2. Push the elevator stick forward. The elevators should move down, which will cause the aircraft to pitch down.

Elevator stick

Rudder

1. Move the rudder stick to the left. The rudder should move to the left, which will cause the aircraft to yaw left.

2. Move the rudder stick to the right. The rudder should move to the right, which will cause the aircraft to yaw right.

Rudder stick

Dual Rates and Control Throws

Program your transmitter to set the rates and control throws based on your experience level.

After flying, you may choose to adjust the values for the desired control response.

	Low Rate	High Rate
Aileron	8mm	12mm
Elevator	8mm	12mm
Rudder	10mm	20mm
Flap Travel	Half ▼ = 10mm Full ▼ = 20mm	

The table to the right shows the factory settings for the control horns and servo arms. These settings, in conjunction with the low rate transmitter settings, are intended for intermediate level pilots to help ensure a successful flight.

Fly the aircraft at these factory settings before making changes.

	Horns	Arms
Aileron		
Elevator		
Rudder		Nose Wheel
Flaps		

AS3X Control Direction Test *(BNF)*
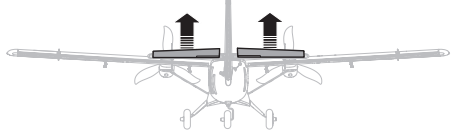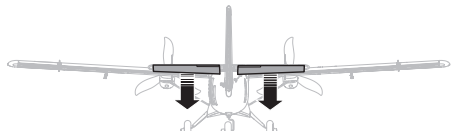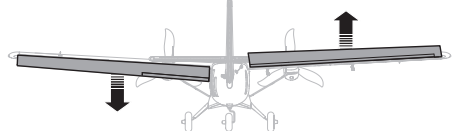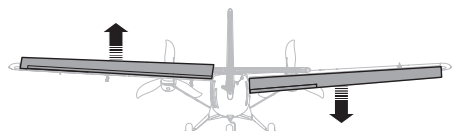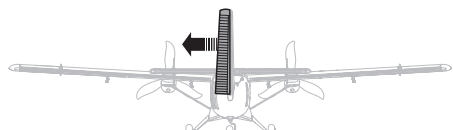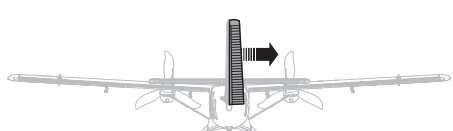
This test ensures that the AS3X® control system is functioning properly. Assemble the aircraft and bind your transmitter to the receiver before performing this test.

1. Raise the throttle just above 25%, then lower the throttle to activate AS3X technology.

⚠️ **CAUTION:** Keep all body parts, hair and loose clothing away from a moving propeller, as these items could become entangled.

2. Move the entire aircraft as shown and ensure the control surfaces move in the direction indicated in the graphic. If the control surfaces do not respond as shown, do not fly the aircraft. Refer to the receiver manual for more information.

Once the AS3X system is active, control surfaces may move rapidly. This is normal. AS3X remains active until the battery is disconnected.

Aircraft movement	AS3X Reaction
Elevator	
Aileron	
Rudder	

In Flight Trimming *(BNF)*

During your first flight, trim the aircraft for level flight at 1/2 throttle with flaps up. Make small trim adjustments with your transmitter's trim switches to straighten the aircraft's flight path.

After adjusting the trim, do not touch the control sticks for 3 seconds. This allows the receiver to learn the correct settings to optimize AS3X performance. Failure to do so could affect flight performance.

3 Seconds
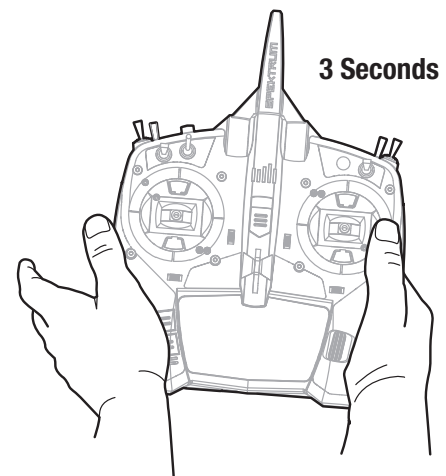
Flying Tips and Repairs

Consult local laws and ordinances before choosing a flying location.

Getting Started
Before you fly, range check the radio system. Refer to your specific transmitter instruction manual for range test information. When you first connect the battery to the airplane AS3X will not be active. After advancing the throttle the first time, the AS3X system will be active and it is normal to see the control surfaces react to aircraft movement. For your first flights set your transmitter timer or a stopwatch to 5 minutes. Adjust your timer for longer or shorter flights once you have flown the model.

Takeoff
Face the aircraft into the wind for takeoff. Set your transmitter to low rates and drop the flaps to takeoff position (half position). Flaps are not required, but lowering them makes takeoffs shorter.

Gradually increase the throttle to full, and steer on the ground with rudder as necessary to keep the aircraft rolling straight. Be aware the nose wheel will become more sensitive as speed increases. Leave the elevator at neutral and allow the aircraft to accelerate up to speed on the ground, then pull up gently on the elevator to rotate for takeoff. When airborne, climb to a comfortable altitude, and return the flaps to the level position.

Flying
For your first flights climb to a moderate altitude and get comfortable with the aircraft while the battery is fresh. Get a feel for the aircraft's low speed performance with the flaps up and down at a safe altitude (approximately 100 feet or more) before being required to make your first landing attempt. Land the aircraft when the timer expires. If at any time the motor power reduces, land the aircraft immediately to recharge the flight battery. See the Low Voltage Cutoff (LVC) section for more details on maximizing battery health and run time.

Landing
Plan to land the aircraft into the wind when possible. Fly downwind and turn into the wind to begin the approach. Lower the throttle and lower the flaps to the landing position (full down position.) Flaps will make the landing approach steeper and slower, and allow for a smoother landing. If there is a significant crosswind, only lower the flaps to the takeoff position (middle position) which will help maintain speed and better directional control during approach.

During the approach and descent, keep the wings level and the aircraft pointed into the wind. The angle of attack (the angle between the aircraft's pitch attitude and the horizon) should remain consistent and slightly nose high during the decent. With the angle of attack maintained during the descent, the speed and descent rate is mostly controlled with small throttle changes. Stay into the throttle to maintain speed and control during decent until the aircraft is ready to flare. As the airplane descends into ground effect, fully lower the throttle, pull the nose up more to bleed off airspeed (flare), and the aircraft will settle on its wheels.

Once on the ground leave the elevator neutral and avoid sharp turns until the plane has slowed enough to prevent scraping the wingtips.

NOTICE: If a crash is imminent, reduce the throttle and trim fully. Failure to do so could result in extra damage to the airframe, as well as damage to the ESC and motor.

NOTICE: After any impact, always ensure the receiver is secure in the fuselage. If you replace the receiver, install the new receiver in the same orientation as the original receiver or damage may result.

NOTICE: Crash damage is not covered under warranty.

NOTICE: When you are finished flying, never leave the aircraft in direct sunlight or in a hot, enclosed area such as a car. Doing so can damage the aircraft.

Low Voltage Cutoff (LVC)
When a Li-Po battery is discharged too much per cell, it will not hold a charge. The ESC protects the flight battery from over-discharge using Low Voltage Cutoff (LVC). Before the battery charge decreases too much, LVC removes power supplied to the motor. Power to the motor reduces, showing that some battery power is reserved for flight control and safe landing.

Disconnect and remove the Li-Po battery from the aircraft after use to prevent trickle discharge. Charge your Li-Po battery to about half capacity before storage. During storage, make sure the battery charge does not fall below 3V per cell. LVC does not prevent the battery from over-discharge during storage.

NOTICE: Repeated flying to LVC will damage the battery.

Tip: Monitor your aircraft battery's voltage before and after flying by using a Li-Po Cell Voltage Checker (SPMXBC100, sold separately).

Oscillation
For most flight maneuvers the aircraft should fly smoothly and normal, but it is possible in some flight conditions you may see oscillation (the aircraft rocks back and forth on one axis due to overcontrol). If oscillation occurs, refer to the Troubleshooting Guide for more information.

Repairs
Thanks to the EPO foam material in this aircraft, repairs to the foam can be made using virtually any adhesive (hot glue, regular CA, epoxy, etc). When parts are not repairable, see the Replacement Parts List for ordering by item number. For a listing of all replacement and optional parts, refer to the list at the end of this manual.

NOTICE: Use of CA accelerant on your aircraft can damage paint. DO NOT handle the aircraft until accelerant fully dries.

SAFE Select Flying Tips

When flying in SAFE Select mode the aircraft will return to level flight any time the aileron and elevator controls are at neutral. Applying aileron or elevator control will cause the airplane to bank, climb or dive, and the amount the stick is moved will determine the attitude the airplane flies. Holding full control will push the aircraft to the pre-determined bank and roll limits but it will not go past those angles.

When flying with SAFE Select it is normal to hold the control stick deflected with moderate aileron input when flying through a turn. To fly smoothly with SAFE Select avoid making frequent control changes and don't attempt to correct for minor deviations. With SAFE Select, holding deliberate control inputs will command the aircraft to fly at a specific angle and the model will make all corrections to maintain that flight attitude.

Return the elevator and aileron controls to neutral before switching from SAFE Select mode to AS3X mode. If you do not neutralize controls when switching into AS3X mode, the control inputs used for SAFE Select mode will be excessive for AS3X mode and the aircraft will react immediately.

Differences between SAFE Select and AS3X modes
This section is generally accurate but does not take into account flight speed, battery charge status, and many other limiting factors.

- In **SAFE Select mode** the aircraft will self level when the control stick is neutralized. In **AS3X mode** the aircraft will continue to fly at its present attitude when the control stick is neutralized.

- In **SAFE Select mode** holding a small amount of control will result in the model banking or pitching to a moderate angle and remaining at that angle as long as the control stick doesn't move.
In **AS3X mode** holding a small amount of control will result in the model continuing to pitch or roll at a slow rate as long as the control stick doesn't move.

- In **SAFE Select mode** holding full control will result in the airplane banking or pitching to the predetermined limits and the aircraft will keep flying at that attitude as long as the control stick is fully deflected.
In **AS3X mode** holding full control will result in the aircraft pitching or rolling as fast as possible, and it will continue to rapidly change attitude as long as the control stick is fully deflected.

Post Flight

1	Disconnect the flight battery from the ESC (Required for Safety and battery life).	5	Repair or replace all damaged parts.
2	Power OFF the transmitter.	6	Store the flight battery apart from the aircraft and monitor the battery charge.
3	Remove the flight battery from the aircraft.	7	Make note of flight conditions and flight plan results, planning for future flights.
4	Recharge the flight battery.		

Motor Service

⚠️ **CAUTION:** Always disconnect the flight battery before performing motor service.

Disassembly

1. Remove the spinner screw and spinner from the propeller shaft.
2. Remove the propeller nut. The right propeller nut for prop T7056CR is reverse rotation.
3. Remove the propeller.
4. Remove the two screws from the sides of the cowling and remove the cowling from the nacelle.
5. Remove top and bottom set screws.
6. Disconnect the motor wires from the ESC wires.
7. Remove the motor from the X-mount.
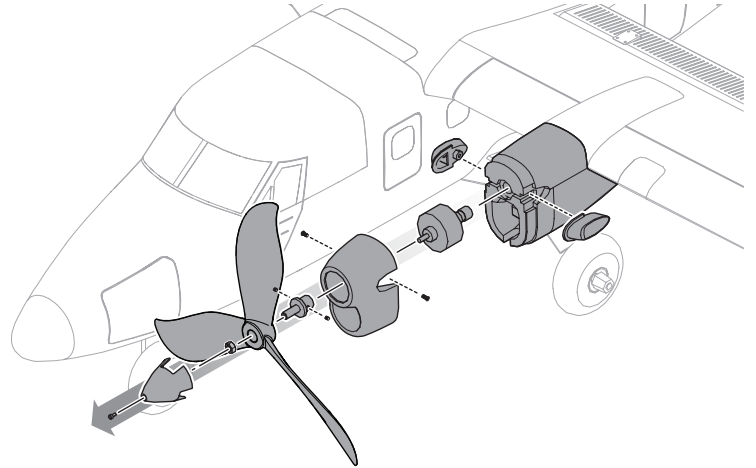
Assembly

Assemble in reverse order.

- Correctly align and connect the motor wire colors with the ESC wires.
- Install the propeller as shown.
- Tighten the spinner nut to secure the propeller into place.

T7056CR   **T7056C**
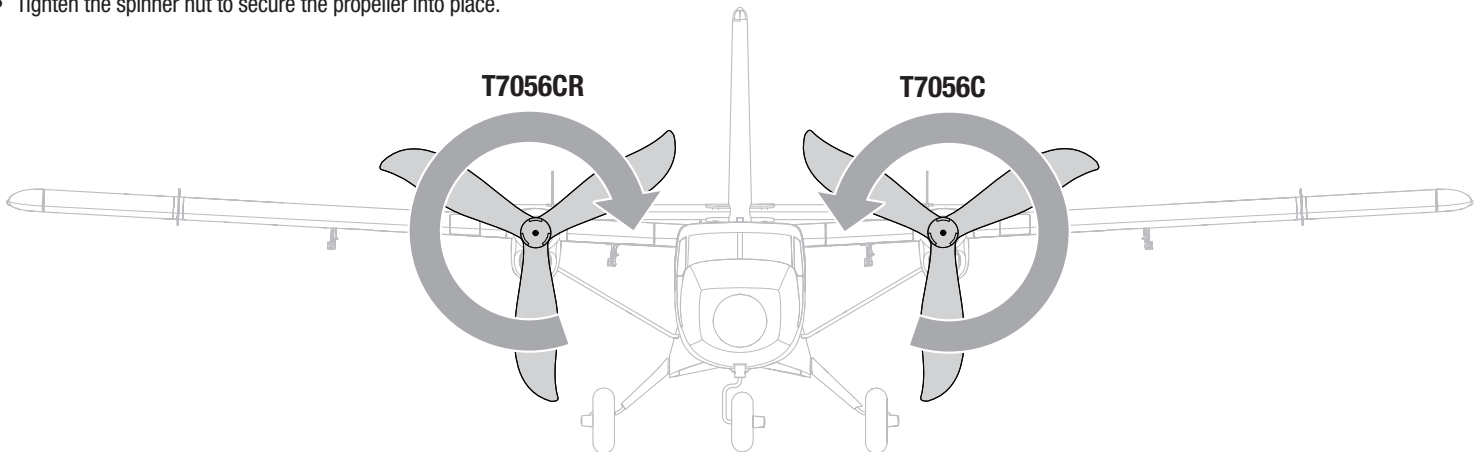
Float Assembly and Installation

1. Remove the screw on the bottom of the fuselage, and remove the landing gear cover.

2. Loosen the nose wheel assembly screw, and remove the nose wheel assembly from the nose wheel steering bracket.

3. Loosen the six 2mm x 10mm mounting screws from the landing gear mounting clamps. Remove the mounting clamps (screws attached) and set them aside.

4. Install the front and rear float struts in the fuselage. The float struts angle down at the ends; the wheel strut is straight out, away from the plane.

5. Reinstall the landing gear cover and tighten the fuselage screw.

6. Install the floats and the spreader bars onto the struts, using the plastic clamps and the 2mm x 10mm screws to secure each clamp.

7. Install the steering wire, slipping the z-bend into the steering arm and snapping the rear clip into the water rudder clevis.

8. Secure the pushrod sleeve to the rear spreader bar with the included zip tie.

   Tip: If you removed the steering arm for the water rudder for flying with wheels, reinstall it for flying with floats.

Disassemble in reverse order.

NOTICE: If installing floats, always recheck the center of gravity before attempting to fly. Failure to do so may result in a crash.

Flying Off Water

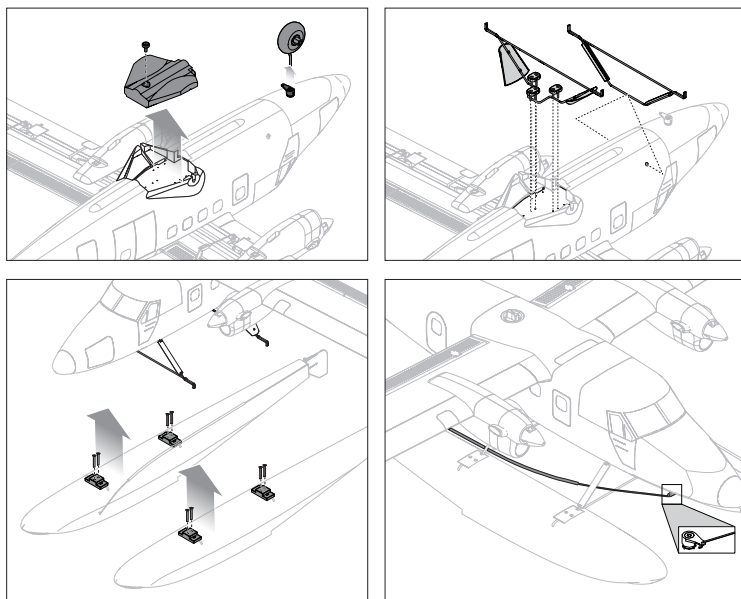Flying off water poses a higher risk because piloting errors or water conditions can cause the aircraft to become stranded. Only fly from the water when a level of comfort has been achieved flying the aircraft from the ground.

Pre-Flight
Ensure the optional floats are secure on the fuselage and the water rudder is correctly connected and operating with the main rudder before putting the aircraft in the water. Select an area to fly that does not have water currents, salt water, or debris. Look around the flight area and be aware of trees, docks, buoys, or other obstacles. Always fly with a spotter and avoid swimmers, boaters, people fishing, and people on the beach.

Taxiing
When taxiing, use low throttle settings and the rudders to steer. Hold up elevator to help keep the rudder in the water and the nose of the floats above the surface. Steer into the wind when turning, and crab into the wind if crosswind taxiing is required. When turning or crabbing into the wind, apply aileron against the wind to keep the upwind side of the wing down and prevent the aircraft from being flipped over. Do not apply down elevator when the airplane is taxiing or during the takeoff run.

On Step
When speed increases with throttle, the floats will rise out of the water and begin to plane on the surface of the water, riding "on step." The floats will come on step at a speed below flight speed, this is a transitional phase when the aircraft is not up to flight speed yet. This is considered a high speed taxi. Do not attempt to take off as soon as the aircraft comes on step. Use low to medium throttle and hold up elevator to manage speed on the water during a high speed taxi.

Takeoff
To lift off from the water, set the flaps to the takeoff position, hold up elevator and accelerate the aircraft to bring it on step. Relax the up elevator as the airplane comes on step and accelerate to flight speed with full throttle. When the aircraft is travelling at a sufficient speed, pull back slightly on the elevator to rotate for liftoff.

Landing
To land on the water, set the flaps to the landing position, and fly into the wind. Reduce the throttle to a low setting but keep some power during the approach. As the aircraft settles into ground effect, reduce the throttle fully and hold up elevator to flare. Hold up elevator through the touch down and as the airplane decelerates on the water.

WARNING: Never attempt to retrieve a downed aircraft by swimming unless you are sufficiently trained and/or there is another person available to respond in the case of an emergency.

CAUTION: Have a plan for retrieval in the event the airplane becomes stranded. Never retrieve a downed model in the water alone.

CAUTION: If at any time water splashes in the fuselage while flying from water, bring the airplane to shore, open the battery hatch and immediately remove any water that may have gotten in the fuselage. Leave the battery hatch open overnight to let the inside dry out and to prevent moisture damage to the electronic components. Failure to do so could cause the electronic components to fail, which could result in a crash.

TIP: Use a fishing pole with heavy line as a retrieval tool. Attach a tennis ball to the line, and throw the ball past a stranded aircraft to retrieve it.

Replacement Parts

Part Number	Description
EFL30051	Fuselage: Twin Otter
EFL300511	Wheels: Twin Otter
EFL300512	Battery Hatch: Twin Otter
EFL300513	Hardware Set: Twin Otter
EFL300516	Decal Sheet: Twin Otter
EFL300516	Decal Sheet: Twin Otter
EFL30052	Wing: Twin Otter
EFL30053	Horizontal Stabilizer: Twin Otter
EFL30054	Nacelles: Twin Otter
EFL30055	Cowlings: Twin Otter
EFL30058	Landing Gear Set: Twin Otter
EFL30059	Float Set: Twin Otter
EFLA300515	ESC 20A: Twin Otter
EFLA300517	Spinner Set: Twin Otter
EFLM300514	2210-1350 Motor: Twin Otter
EFLP30056	Propeller CW 7 x 5.6 x 3: Twin Otter
EFLP30060	Propeller CCW 7 x 5.6 x 3: Twin Otter
SPMAR631	AR631 6-Ch AS3X Sport Receiver
SPMSA330R	9 Gram Servo Reversed

Optional Parts

Part Number	Description
SPMA3065	AS3X Programming Cable - USB Interface
SPMBT1000	AS3X Bluetooth Programming Module
SPMXBC100	SMART Battery Checker and Servo Driver
DYN1405	Li-Po Charge Protection Bag, Large
DYN1400	Li-Po Charge Protection Bag, Small
SPMR6750	DX6 Transmitter Only MD2 G3
SPMR6775	NX6 6-Channel Transmitter Only
SPMR8000	DX8 Transmitter Only MD2
SPMR8100	DX8e 8CH Transmitter Only
SPMR8200	NX8 8-Channel Transmitter Only
SPMR9910	DX9 Black Transmitter Only MD2
SPMR10100	NX10 10 Channel Transmitter Only
SPMR12000	iX12 12 Channel Transmitter Only
SPMX32003S30	11.1V 3200mAh 3S 30C Smart LiPo, IC3
SPMXC1000	Smart S1200 DC Charger, 1x200W
SPMXC1010	Smart S2100 AC Charger, 2x100W

Recommended Receivers *(PNP)*

Part Number	Description
SPMAR620	AR620 6-Channel Sport Air Receiver
Telemetry Equipped Receivers	
SPMAR6600T	AR6600T 6-Channel Air Integrated Telemetry Receiver
SPMAR6270T	AR6270T 6-Channel Carbon Fuse Integrated Telemetry Receiver
SPMAR8010T	AR8010T 8-Channel Air Integrated Telemetry Receiver
SPMAR9030T	AR9030T 9-Channel Air Integrated Telemetry Receiver
AS3X Equipped Receivers	
SPMAR631	AR631 6-Channel AS3X Sport Receiver
AS3X and Telemetry Equipped Receivers	
SPMAR7350	AR7350 7-Channel AS3X Receiver with Integrated Telemetry
SPMAR9350	AR9350 9-Channel AS3X Receiver with Integrated Telemetry
Telemetry Sensors*	
SPMA9574	Aircraft Telemetry Airspeed Indicator
SPMA9589	Aircraft Telemetry Altitude and Variometer Sensor
SPMA9558	Brushless RPM Sensor
SPMA9605	Aircraft Telemetry Flight Pack Battery Energy Sensor
SPMA9587	Aircraft Telemetry GPS Sensor

*Not compatible with BNF, Telemetry receiver required

AMA National Model Aircraft Safety Code

Effective January 1, 2018

A model aircraft is a non-human-carrying device capable of sustained flight within visual line of sight of the pilot or spotter(s). It may not exceed limitations of this code and is intended exclusively for sport, recreation, education and/or competition. All model flights must be conducted in accordance with this safety code and related AMA guidelines, any additional rules specific to the flying site, as well as all applicable laws and regulations.

As an AMA member I agree:

- I will not fly a model aircraft in a careless or reckless manner.
- I will not interfere with and will yield the right of way to all human-carrying aircraftusing AMA's See and Avoid Guidance and a spotter when appropriate.
- I will not operate any model aircraft while I am under the influence of alcohol or any drug that could adversely affect my ability to safely control the model.
- I will avoid flying directly over unprotected people, moving vehicles, and occupied structures.
- I will fly Free Flight (FF) and Control Line (CL) models in compliance with AMA's safety programming.
- I will maintain visual contact of an RC model aircraft without enhancement other than corrective lenses prescribed to me. When using an advanced flight system, such as an autopilot, or flying First-Person View (FPV), I will comply with AMA's

Advanced Flight System programming.
- I will only fly models weighing more than 55 pounds, including fuel, if certified through AMA's Large Model Airplane Program.
- I will only fly a turbine-powered model aircraft in compliance with AMA's Gas Turbine Program.
- I will not fly a powered model outdoors closer than 25 feet to any individual, except for myself or my helper(s) located at the flightline, unless I am taking off and landing, or as otherwise provided in AMA's Competition Regulation.
- I will use an established safety line to separate all model aircraft operations from spectators and bystanders.

Troubleshooting Guide AS3X

Problem	Possible Cause	Solution
Oscillation	Damaged propeller or spinner	Replace propeller or spinner
	Imbalanced propeller	Balance the propeller
	Motor vibration	Replace parts or correctly align all parts and tighten fasteners as needed
	Loose receiver	Align and secure receiver in fuselage
	Loose aircraft controls	Tighten or otherwise secure parts (servo, arm, linkage, horn and control surface)
	Worn parts	Replace worn parts (especially propeller, spinner or servo)
	Irregular servo movement	Replace servo
Inconsistent flight performance	Trim is not at neutral	If you adjust trim more than 8 clicks, adjust the clevis to remove trim
	Sub-Trim is not at neutral	No Sub-Trim is allowed. Adjust the servo linkage
	Aircraft was not kept immobile for 5 seconds after battery connection	With the throttle stick in lowest position. Disconnect battery, then reconnect battery and keep the aircraft still for 5 seconds
Incorrect response to the AS3X Control Direction Test	Incorrect direction settings in the receiver, which can cause a crash	DO NOT fly. Correct the direction settings (refer to the receiver manual), then fly

Troubleshooting Guide

Problem	Possible Cause	Solution
Aircraft will not respond to throttle but responds to other controls	Throttle not at idle and/or throttle trim too high	Reset controls with throttle stick and throttle trim at lowest setting
	Throttle servo travel is lower than 100%	Make sure throttle servo travel is 100% or greater
	Throttle channel is reversed	Reverse throttle channel on transmitter
	Motor disconnected from ESC	Make sure motor is connected to the ESC
Extra propeller noise or extra vibration	Damaged propeller and spinner, collet or motor	Replace damaged parts
	Propeller is out of balance	Balance or replace propeller
	Prop nut is too loose	Tighten the prop nut
Reduced flight time or aircraft underpowered	Flight battery charge is low	Completely recharge flight battery
	Propeller installed backwards	Install propeller with numbers facing forward
	Flight battery damaged	Replace flight battery and follow flight battery instructions
	Flight conditions may be too cold	Make sure battery is warm before use
	Battery capacity too low for flight conditions	Replace battery or use a larger capacity battery
Aircraft will not Bind (during binding) to transmitter	Transmitter too near aircraft during binding process	Move powered transmitter a few feet from aircraft, disconnect and reconnect flight battery to aircraft
	Aircraft or transmitter is too close to large metal object, wireless source or another transmitter	Move aircraft and transmitter to another location and attempt binding again
	The bind plug is not installed correctly in the bind port	Install bind plug in bind port and bind the aircraft to the transmitter
	Flight battery/transmitter battery charge is too low	Replace/recharge batteries
	Bind switch or button not held long enough during bind process	Power off transmitter and repeat bind process. Hold transmitter bind button or switch until receiver is bound
Aircraft will not connect (after binding) to transmitter	Transmitter too near aircraft during connecting process	Move powered transmitter a few feet from aircraft, disconnect and reconnect flight battery to aircraft
	Aircraft or transmitter is too close to large metal object, wireless source or another transmitter	Move aircraft and transmitter to another location and attempt connecting again
	Bind plug left installed in bind port	Rebind transmitter to the aircraft and remove the bind plug before cycling power
	Aircraft bound to different model memory (Model-Match™ radios only)	Select correct model memory on transmitter
	Flight battery/Transmitter battery charge is too low	Replace/recharge batteries
	Transmitter may have been bound to a different aircraft using different DSM protocol	Bind aircraft to transmitter
Control surface does not move	Control surface, control horn, linkage or servo damage	Replace or repair damaged parts and adjust controls
	Wire damaged or connections loose	Do a check of wires and connections, connect or replace as needed
	Transmitter is not bound correctly or the incorrect airplanes was selected	Re-bind or select correct airplanes in transmitter
	Flight battery charge is low	Fully recharge flight battery
	BEC (Battery Elimination Circuit) of the ESC is damaged	Replace ESC
Controls reversed	Transmitter settings are reversed	Perform the Control Direction Test and adjust the transmitter controls appropriately
Motor power pulses then motor loses power	ESC uses default soft Low Voltage Cutoff (LVC)	Recharge flight battery or replace battery that is no longer performing
	Weather conditions might be too cold	Postpone flight until weather is warmer
	Battery is old, worn out, or damaged	Replace battery
	Battery C rating might be too small	Use recommended battery

Limited Warranty

What this Warranty Covers
Horizon Hobby, LLC, (Horizon) warrants to the original purchaser that the product purchased (the "Product") will be free from defects in materials and workmanship at the date of purchase.

What is Not Covered
This warranty is not transferable and does not cover (i) cosmetic damage, (ii) damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or due to improper use, installation, operation or maintenance, (iii) modification of or to any part of the Product, (iv) attempted service by anyone other than a Horizon Hobby authorized service center, (v) Product not purchased from an authorized Horizon dealer, or (vi) Product not compliant with applicable technical regulations, or (vii) use that violates any applicable laws, rules, or regulations.

OTHER THAN THE EXPRESS WARRANTY ABOVE, HORIZON MAKES NO OTHER WARRANTY OR REPRESENTATION, AND HEREBY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES, INCLUDING, WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE PURCHASER ACKNOWLEDGES THAT THEY ALONE HAVE DETERMINED THAT THE PRODUCT WILL SUITABLY MEET THE REQUIREMENTS OF THE PURCHASER'S INTENDED USE.

Purchaser's Remedy
Horizon's sole obligation and purchaser's sole and exclusive remedy shall be that Horizon will, at its option, either (i) service, or (ii) replace, any Product determined by Horizon to be defective. Horizon reserves the right to inspect any and all Product(s) involved in a warranty claim. Service or replacement decisions are at the sole discretion of Horizon. Proof of purchase is required for all warranty claims. SERVICE OR REPLACEMENT AS PROVIDED UNDER THIS WARRANTY IS THE PURCHASER'S SOLE AND EXCLUSIVE REMEDY.

Limitation of Liability
HORIZON SHALL NOT BE LIABLE FOR SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR PRODUCTION OR COMMERCIAL LOSS IN ANY WAY, REGARDLESS OF WHETHER SUCH CLAIM IS BASED IN CONTRACT, WARRANTY, TORT, NEGLIGENCE, STRICT LIABILITY OR ANY OTHER THEORY OF LIABILITY, EVEN IF HORIZON HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. Further, in no event shall the liability of Horizon exceed the individual price of the Product on which liability is asserted. As Horizon has no control over use, setup, final assembly, modification or misuse, no liability shall be assumed nor accepted for any resulting damage or injury. By the act of use, setup or assembly, the user accepts all resulting liability. If you as the purchaser or user are not prepared to accept the liability associated with the use of the Product, purchaser is advised to return the Product immediately in new and unused condition to the place of purchase.

Law
These terms are governed by Illinois law (without regard to conflict of law principals). This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. Horizon reserves the right to change or modify this warranty at any time without notice.

WARRANTY SERVICES
Questions, Assistance, and Services
Your local hobby store and/or place of purchase cannot provide warranty support or service. Once assembly, setup or use of the Product has been started, you must contact your local distributor or Horizon directly. This will enable Horizon to better answer your questions and service you in the event that you may need any assistance. For questions or assistance, please visit our website at www.horizonhobby.com, submit a Product Support Inquiry, or call the toll free telephone number referenced in the Warranty and Service Contact Information section to speak with a Product Support representative.

Inspection or Services
If this Product needs to be inspected or serviced and is compliant in the country you live and use the Product in, please use the Horizon Online Service Request submission process found on our website or call Horizon to obtain a Return Merchandise Authorization (RMA) number. Pack the Product securely using a shipping carton. Please note that original boxes may be included, but are not designed to withstand the rigors of shipping without additional protection. Ship via a carrier that provides tracking and insurance for lost or damaged parcels, as Horizon is not responsible for merchandise until it arrives and is accepted at our facility. An Online Service Request is available at http://www.horizonhobby.com/content/service-center_render-service-center. If you do not have internet access, please contact Horizon Product Support to obtain a RMA number along with instructions for submitting your product for service. When calling Horizon, you will be asked to provide your complete name, street address, email address and phone number where you can be reached during business hours. When sending product into Horizon, please include your RMA number, a list of the included items, and a brief summary of the problem. A copy of your original sales receipt must be included for warranty consideration. Be sure your name, address, and RMA number are clearly written on the outside of the shipping carton.

> **NOTICE: Do not ship LiPo batteries to Horizon. If you have any issue with a LiPo battery, please contact the appropriate Horizon Product Support office.**

Warranty Requirements
For Warranty consideration, you must include your original sales receipt verifying the proof-of-purchase date. Provided warranty conditions have been met, your Product will be serviced or replaced free of charge. Service or replacement decisions are at the sole discretion of Horizon.

Non-Warranty Service
Should your service not be covered by warranty, service will be completed and payment will be required without notification or estimate of the expense unless the expense exceeds 50% of the retail purchase cost. By submitting the item for service you are agreeing to payment of the service without notification. Service estimates are available upon request. You must include this request with your item submitted for service. Non-warranty service estimates will be billed a minimum of ½ hour of labor. In addition you will be billed for return freight. Horizon accepts money orders and cashier's checks, as well as Visa, MasterCard, American Express, and Discover cards. By submitting any item to Horizon for service, you are agreeing to Horizon's Terms and Conditions found on our website http://www.horizonhobby.com/content/service-center_render-service-center.

> **ATTENTION: Horizon service is limited to Product compliant in the country of use and ownership. If received, a non-compliant Product will not be serviced. Further, the sender will be responsible for arranging return shipment of the un-serviced Product, through a carrier of the sender's choice and at the sender's expense. Horizon will hold non-compliant Product for a period of 60 days from notification, after which it will be discarded.**

10/15

Contact Information

Country of Purchase	Horizon Hobby	Contact Information	Address
United States of America	Horizon Service Center (Repairs and Repair Requests)	servicecenter.horizonhobby.com/RequestForm/	2904 Research Rd Champaign, Illinois, 61822 USA
	Horizon Product Support (Product Technical Assistance)	productsupport@horizonhobby.com	
		877-504-0233	
	Sales	websales@horizonhobby.com	
		800-338-4639	
European Union	Horizon Technischer Service	service@horizonhobby.eu	Hanskampring 9 D 22885 Barsbüttel, Germany
	Sales: Horizon Hobby GmbH	+49 (0) 4121 2655 100	

FCC Information

FCC ID: BRWSPMSR6200A
Supplier's Declaration of Conformity
EFL Twin Otter 1.2m PNP/BNF BASIC (EFL30075, EFL300500)

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

⚠ **CAUTION:** Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna.
• Increase the separation between the equipment and receiver.
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
• Consult the dealer or an experienced radio/TV technician for help.

Horizon Hobby, LLC
2904 Research Rd., Champaign, IL 61822
Email: compliance@horizonhobby.com
Web: HorizonHobby.com

IC Information

IC: 6157A-SPMSR6200A
CAN ICES-3 (B)/NMB-3(B)

This device contains license-exempt transmitter(s)/receivers(s) that comply with Innovation, Science, and Economic Development Canada's license-exempt RSS(s). Operation is subject to the following 2 conditions:

1. This device may not cause interference.

2. This device must accept any interference, including interference that may cause undesired operation of the device.

Compliance Information for the European Union

EU Compliance Statement:
EFL30075 Twin Otter 1.2m PNP: Hereby, Horizon Hobby, LLC declares that the device is in compliance with the following: EU EMC Directive 2014/30/EU.

EFL300500 Twin Otter 1.2m BNF BASIC: Hereby, Horizon Hobby, LLC declares that the device is in compliance with the following: EU Radio Equipment Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following internet address: https://www.horizonhobby.com/content/support-render-compliance.

Wireless Frequency Range and Wireless Output Power:
2404 – 2476MHz
5.58dBm

EU Manufacturer of Record:
Horizon Hobby, LLC
2904 Research Road
Champaign, IL 61822 USA

EU Importer of Record:
Horizon Hobby, GmbH
Hanskampring 9
22885 Barsbüttel Germany

WEEE NOTICE:

This appliance is labeled in accordance with European Directive 2012/19/EU concerning waste of electrical and electronic equipment (WEEE). This label indicates that this product should not be disposed of with household waste. It should be deposited at an appropriate facility to enable recovery and recycling.

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