



Instruction Manual



Specifications

Wingspan:	22.2 in (565mm)
Length:	16.0 in (405mm)
Weight with Battery:	1.9 oz (54 g)
Battery:	200mAh 1S 3.7V LiPo (included with RTF and WOT)
Charger:	1S 3.7V LiPo (included in transmitter with RTF and DC USB with WOT)
Transmitter:	4-channel 2.4GHz w/LiPo charger (included with RTF, required for WOT)
On-Board Electronics:	3-in-1 receiver/2 servos/ESC (installed in RTF and WOT)

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Introduction

The Ares™ [*air-eez*] Taylorcraft 130 is a scale model of Clarence Taylor's classic design that offers stability perfect for first-time pilots and capable flight performance experienced pilots will enjoy. Lightweight and durable foam construction along with the ultra-micro size makes it possible to fly in smaller outdoor spaces like a yard or park, plus the airframe arrives factory-assembled and ready to fly right out of the box!

A variety of features including a full-airfoil wing design, struts and wheel pants offer improved flight performance and scale looks, while the unique airframe design assembles with magnets and interlocking parts for easy maintenance and repairs without glue. And unlike other similar class models, the Taylorcraft 130 is designed so it's ready to upgrade to brushless power and aileron control without the need for difficult and time consuming modifications. The very affordable Brushless Power System Upgrade Combo includes a brushless ESC, motor and mount that install easily in minutes and the optional 'clipped' aileron wing quickly snaps in place of the standard wing to offer full 4-channel control and aerobatic capability.

The Taylorcraft 130 is available in RTF (Ready-To-Fly) and WOT (Without Transmitter) versions that include a factory installed receiver and onboard electronics as well as a class-leading 200mAh 1S 3.7V LiPo battery. The RTF version includes a 4-channel transmitter equipped with 2.4GHz technology and a convenient built-in LiPo battery charger while the WOT version includes a DC USB charger and is ready to bind/link to compatible Ares 2.4GHz transmitters including the M4MPA-200C included with the Trainer 100 and other similar class models.

And although the Taylorcraft 130 is ready to fly right out the box, please take the time to read through this manual for more information on battery safety and charging, flight controls and more before proceeding with your first flight. Please also visit our web site at www.Ares-RC.com for additional information including potential product bulletins, videos and more.

Safety Precautions and Warnings

Failure to use this product in the intended manner as described in the following instructions can result in damage and/or personal injury. A Radio Controlled (RC) airplane/helicopter is not a toy! If misused it can cause serious bodily harm and damage to property.

Keep items that could become entangled in the propeller/rotor blades away from the propeller/rotor, including loose clothing, tools, etc. Be especially sure to keep your hands, face and other parts of your body away from the propeller/rotor blades.

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

This model is controlled by a radio signal that is subject to possible interference from a variety of sources outside your control. This interference can cause momentary loss of control so it is advisable to always keep a safe distance from objects and people in all directions around your model as this will help to avoid collisions and/or injury.

- Never operate your model if the voltage of the batteries in the transmitter is too low.
- Always operate your model in an open area away from obstacles, people, vehicles, buildings, etc.
- Carefully follow the directions and warnings for this and any optional support equipment (chargers, rechargeable batteries, etc.).
- Keep all chemicals, small parts and all electronic components out of the reach of children.
- Moisture causes damage to electronic components. Avoid water exposure to all electronic components, parts, etc. not specifically designed and protected for use in water.
- Never lick or place any portion of your model in your mouth as it could cause serious injury or even death.

FCC Information

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.

This product contains a radio transmitter with wireless technology which has been tested and found to be compliant with the applicable regulations governing a radio transmitter in the 2.400GHz to 2.4835GHz frequency range.

The associated regulatory agencies of the following countries recognize the noted certifications for this product as authorized for sale and use: USA

Taylorcraft 130 RTF (Ready-To-Fly) Contents

Item	Description
Not Available Separately	. Taylorcraft 130 Ultra-Micro RTF Airframe
AZS1138AMD2.....	M4MPA-200C Micro 4-Channel MP Airplane Transmitter w/200mA Charger, Mode 2
Not Available Separately	. 4 AA Batteries
AZSB2001S15UM.....	200mAh 1-Cell/1S 3.7V 15C LiPo Battery, Ultra-Micro Connector



Taylorcraft 130 WOT (Without Transmitter) Contents

Item	Description
Not Available Separately	. Taylorcraft 130 Ultra-Micro RTF Airframe
AZSB2001S15UM.....	200mAh 1-Cell/1S 3.7V 15C LiPo Battery, Ultra-Micro Connector
AZSC104CUSB	104C 1-Cell/1S 3.7V LiPo, 0.4A DC USB Charger (not shown)

Required to Complete

The Taylorcraft 130 RTF (Ready-To-Fly) version includes everything needed to fly right out of the box. There's nothing extra to buy or provide!

The Taylorcraft 130 WOT (Without Transmitter) version requires the following items:

- Compatible Ares 2.4GHz 3+ channel transmitter, including (as of August 2013) the following:
 - **M4MPA-200C** (included with some Trainer 100 RTF and other models)
- Suitable batteries for the compatible transmitter

Transmitter and Receiver Binding/Linking

Binding/linking is the process of programming the receiver in the control unit to recognize the Globally Unique Identifier (GUID) code of a single specific transmitter. If you have a WOT (Without Transmitter) version model, or ever find it's necessary to replace the transmitter or the receiver/control unit, it will be necessary for you to bind/link the new transmitter or receiver/control unit accordingly for proper operation.

These steps outline the binding/linking process for all currently (as of August 2013) compatible transmitter models:

- Switch the transmitter on and connect the flight battery to the control unit.
- For M4MPA-200C transmitters:**
Simultaneously press the two throttle trim buttons (both the top and bottom buttons directly to the right of the left-hand/throttle stick) and the transmitter will emit a series of beeps/tones indicating that it's entered the binding/linking mode (at which point you can release the buttons).
- The binding/linking process is complete when the servos and the rudder and elevator move back and forth briefly and the transmitter stops emitting the beeps/tones. You should now have full control of the airplane.

Before the First Flight Checklist

PLEASE NOTE: This checklist is NOT intended to replace the content included in this instruction manual. Although it can be used as a quick start guide, we strongly suggest reading through this manual completely before proceeding.

- Remove and inspect all contents
- Install the four AA batteries in the transmitter (for RTF version models)
- Begin charging the LiPo flight battery (connect it to a suitably compatible LiPo charger)
- Install the LiPo flight battery in the airplane (after it's been fully charged)
- Familiarize yourself with the controls
- Test the controls to confirm proper operation
- Find a suitable area for flying

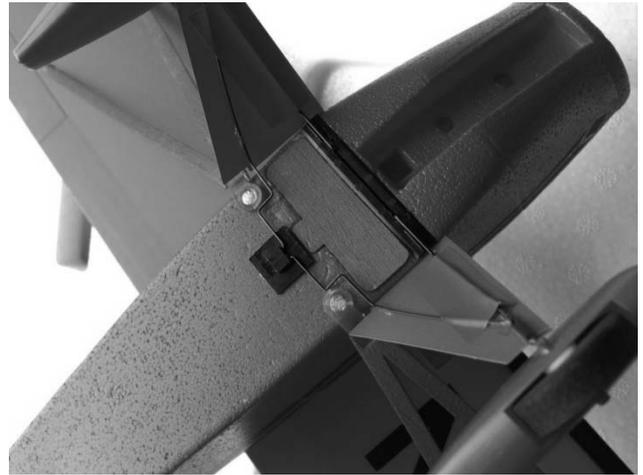
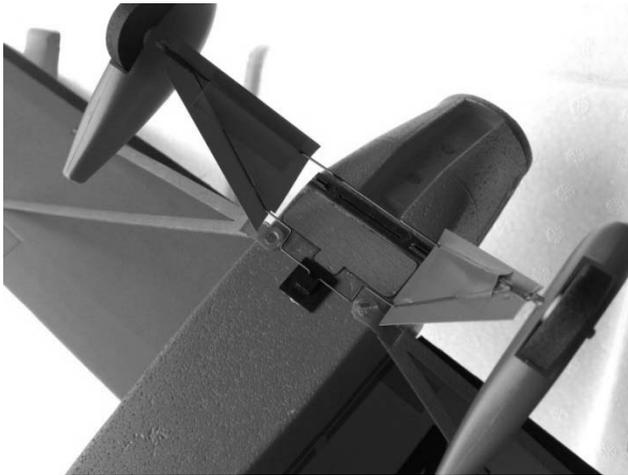
Flight Checklist

PLEASE NOTE: This checklist is NOT intended to replace the content included in this instruction manual. Although it can be used as a quick start guide, we strongly suggest reading through this manual completely before proceeding.

- Always turn the transmitter on first
- Plug the flight battery into the control unit
- Allow the control unit to initialize and arm properly
- Fly the model (hand-launch or takeoff from a flat/level surface)
- Land the model (land on a flat/level surface)
- Unplug the flight battery from the control unit
- Always turn the transmitter off last

Installing the Landing Gear

The main landing gear is installed into the rear mount located on the bottom of the fuselage just behind the cover for the 2-cell battery compartment and in the slot/opening located just behind the 1-cell battery compartment. First, use care and moderate pressure to slide the 'U-shaped' section of the landing gear into the rear mount. Then carefully 'squeeze' the wheels/landing gear legs together slightly and slide the landing gear into the slot as shown (you can also remove the landing gear by following the same steps in the reverse order).



LiPo Battery Warnings and Usage Guidelines

IMPORTANT NOTE: Lithium Polymer (LiPo) batteries are significantly more volatile than the alkaline, NiCd and NiMH batteries also used in RC applications. All instructions and warnings must be followed exactly to prevent property damage and/or personal injury as mishandling of LiPo batteries can result in fire.

By handling, charging or using the included LiPo battery you assume all risks associated with LiPo batteries. If you do not agree with these conditions, please return the complete product in new, unused condition to the place of purchase immediately.

And although the 200mAh 1-Cell/1S 3.7V 15C LiPo Battery (AZSB2001S15UM) included with the Taylorcraft 130 is intended to be charged safely using either the LiPo battery charger built into the M4MPA-200C Micro 4-Channel MP Airplane Transmitter w/200mA Charger (AZS1138AMD2; included with the RTF version), or the 104C 1-Cell/1S 3.7V LiPo, 0.4A DC USB Charger (AZSC104USB; included with the WOT version), you must read the following safety instructions and warnings before handling, charging or using the LiPo battery.

- You must charge the LiPo battery in a safe area away from flammable materials.
- Never charge the LiPo battery unattended at any time. When charging the battery you should always remain in constant observation to monitor the charging process and react immediately to any potential problems that may occur.
- After flying/discharging the battery you must allow it to cool to ambient/room temperature before recharging.
- **To charge the battery you must use only the LiPo battery charger built into the M4MPA-200C Micro 4-Channel MP Airplane Transmitter w/200mA Charger (AZS1138AMD2), the 104C 1-Cell/1S 3.7V LiPo, 0.4A DC USB Charger (AZSC104USB) or a suitably compatible LiPo battery charger. Failure to do so may result in a fire causing property damage and/or personal injury. DO NOT use a NiCd or NiMH charger.**
- **If at any time during the charge or discharge process the battery begins to balloon or swell, discontinue charging or discharging immediately. Quickly and safely disconnect the battery, then place it in a safe, open area away from flammable materials to observe it for at least 15 minutes. Continuing to charge or discharge a battery that has begun to balloon or swell can result in a fire. A battery that has ballooned or swollen even a small amount must be removed from service completely.**

- Store the battery partially charged (approximately 50% charged/3.85V per cell), at room temperature (approximately 68–77° Fahrenheit [F]) and in a dry area for best results.
- When transporting or temporarily storing the battery the temperature range should be from approximately 40–100°F. Do not store the battery or model in a hot garage, car or direct sunlight whenever possible. If stored in a hot garage or car the battery can be damaged or even catch fire.
- **Do not over-discharge the LiPo flight battery. Discharging the LiPo flight battery to a voltage that is too low can cause damage to the battery resulting in reduced power, flight duration or failure of the battery entirely.**

LiPo cells should not be discharged to below 3.0V each under load. In the case of the 1-Cell/1S 3.7V LiPo battery used to power the Taylorcraft 130 you will not want to allow the battery to fall below 3.0V during flight.

The 3-in-1 control unit features a soft low voltage cutoff (LVC) that smoothly reduces power to the motor/power system (regardless of the power level you have set with the left-hand/throttle stick) to let you know the voltage of the battery is close to the 3.0V minimum. However, even before this reduction in power, if you find that more than the typical amount of throttle/power is required to cruise or climb you should land the model and disconnect the battery immediately to prevent over-discharge.

And while it is possible to fly the model again after the soft LVC occurs, this is NOT recommended. Continued discharging can result in reaching the hard LVC which may cause permanent damage to the LiPo battery resulting in lost power and flight duration during subsequent flights (or failure of the battery entirely).

Also, it is not recommended that you 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/power than typical to maintain cruise or climb, you should land the airplane and disconnect the LiPo battery immediately. Continually discharging the battery to the soft LVC can still cause permanent damage to the battery so it's best to use a timer or stop-watch to time the duration of your flights and to stop flying at a reasonable time before the soft LVC is reached.

Charging the LiPo Flight Battery

You must charge the included 200mAh 1-Cell/1S 3.7V 15C LiPo Battery (AZSB2001S15UM) using either the LiPo battery charger built into the M4MPA-200C Micro 4-Channel MP Airplane Transmitter w/200mA Charger (AZS1138AMD2; included with the RTF version), the 104C 1-Cell/1S 3.7V LiPo, 0.4A DC USB Charger (AZSC104CUSB; included with the WOT version) or a suitably compatible LiPo battery charger. Charging the LiPo battery using a non-LiPo battery compatible charger (such as a NiCd or NiMH battery charger), or even a different LiPo battery charger with the incorrect settings, may result in damage to the battery or even fire resulting in property damage and/or personal injury.

Please follow these steps to charge the LiPo flight battery **with the charger built into the M4MPA-200C transmitter:**

- ❑ Carefully open the small hatch located near the bottom left-hand corner of the transmitter and extend the charge lead outside of the transmitter case. You can leave the hatch open or close it by routing the charge lead through the small cutout/opening in the hatch door.
- ❑ Connect the battery to the connector at the end of the charge lead extending from the transmitter. **YOU MUST BE CAREFUL TO ENSURE PROPER POLARITY BEFORE MAKING THE CONNECTION** by aligning the small red circle marking on the housing of the battery with the small red circle marking on the charge lead connector. While the white color 'ultra-micro' connectors are 'keyed' to minimize the risk of a reverse polarity connection, if you force them it is possible to make connection with the incorrect polarity potentially causing damage to the battery and/or charger (transmitter). When the circle markings are properly aligned for correct polarity connecting the white color connectors should require only a minimal amount of pressure to achieve the light 'click' that indicates a secure connection.



- When the battery is connected to the charge lead securely and with the proper polarity the 'CHG' (charge) LED indicator on the transmitter will glow solid yellow. The battery will be charging anytime the LED indicator is glowing solid yellow and whether or not the transmitter is powered on.
- It will take approximately 1.0–1.5 hours to charge a mostly or fully discharged (not over-discharged) battery. And when the battery is fully charged the LED indicator will stop glowing entirely. When the LED indicator is no longer glowing you can remove the battery from the charge lead/connector as it is now fully charged and ready for use.

NOTE: The LiPo battery included with each new model will arrive partially charged. For this reason the initial charge may only take approximately 30–45 minutes.

NOTE: It's safer and better for the longevity of the battery to store it only partially charged for any length of time. Storing the battery at approximately 50% charged (which is approximately 3.85V per cell) is typically best, however, it will take some careful management of the charge time and the use of a volt meter to achieve this voltage.

If you have the equipment and skills to achieve the 50% charge level for storage it is recommended. If not, simply be sure to not store the battery fully charged whenever possible. In fact, as long as the battery will be stored at approximately room temperature and for no more than a few weeks before the next use, it may be best to store the battery in the discharged state after the last flight (as long as the battery was not over-discharged on the last flight).

Please follow these steps to charge the LiPo flight battery **with the 104C USB charger**:

- Connect the 104C charger to a suitable 5V USB connection/port on a computer or other device. Another option is to plug the optional 5005PS 100-240V AC to 5V DC USB, 0.5-Amp Power Supply/AC Adapter (AZSC5005PS) into a compatible 100-240V AC outlet then connect the 104C charger to the power supply/AC adapter accordingly. The power supply/AC adapter is powered on when the LED indicator glows solid green.
- When the 104C charger is connected to a power source the LED indicator will blink/flash red. Connect the battery to the connector at the end of the wire lead extending from the charger. **YOU MUST BE CAREFUL TO ENSURE PROPER POLARITY BEFORE MAKING THE CONNECTION by aligning the small red marking on the housing of the battery with the small red marking on the housing of the connector/wire lead extending from the charger.**

While the white color 'ultra-micro' connectors are 'keyed' to minimize the risk of a reverse polarity connection, if you force them it is possible to make connection with the incorrect polarity potentially causing damage to the battery and/or charger. When the red markings are properly aligned for correct polarity, connecting the white color connectors should require only a minimal amount of pressure to achieve the light 'click' that indicates secure connection.

- When the battery is connected to the charger securely and with the proper polarity the LED indicator on the charger will glow solid red very brightly. The battery will be charging anytime the LED indicator is glowing solid red brightly.
- It will take approximately 30-50 minutes to charge a mostly or fully discharged (not over-discharged) battery. And when the battery is fully charged the LED indicator will dim significantly. When the LED indicator is dim you can disconnect the battery from the charger's connector/wire lead as it is now fully charged and ready for use.

NOTE: The LiPo battery included with each new model will arrive partially charged. For this reason the initial charge may only take approximately 15-25 minutes.

NOTE: When the LED indicator is blinking/flashing red the 104C charger is powered on and ready to begin charging the next LiPo battery that is connected to it.

Installing the Transmitter Batteries

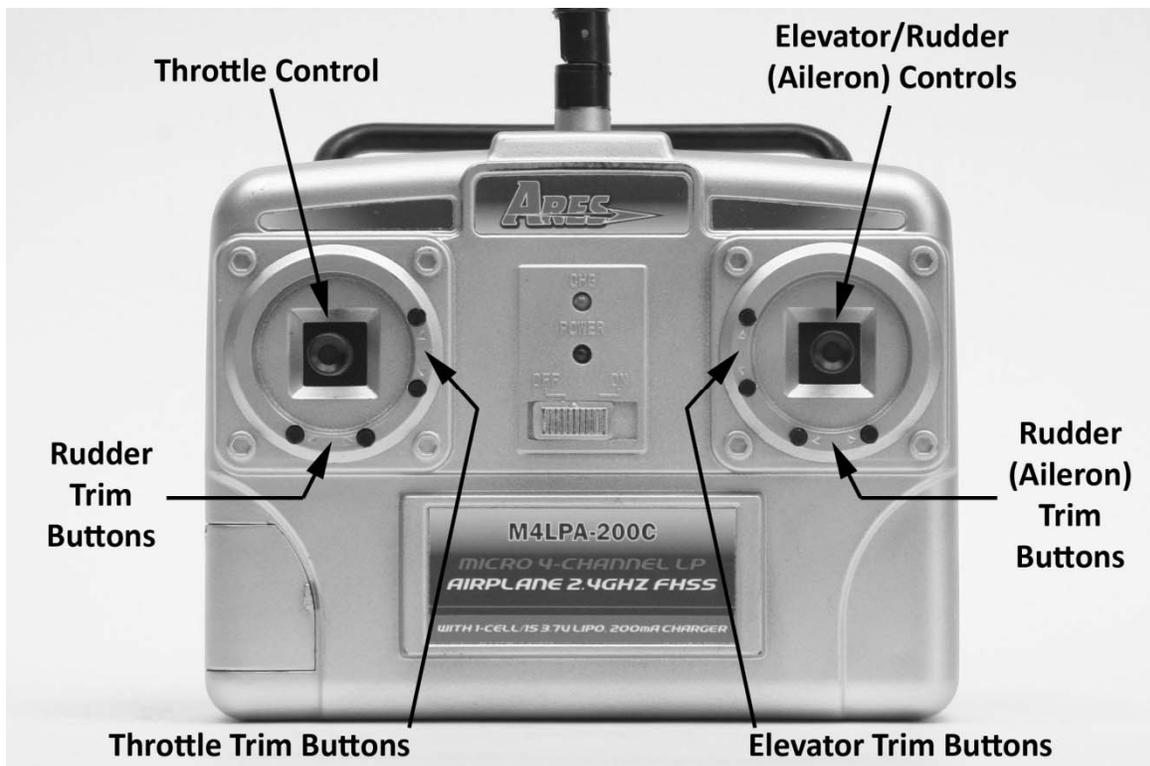
Install the four included AA batteries in the back of the transmitter by first removing the battery compartment cover/door. Ensure proper polarity of the batteries before installing them as noted by the markings molded into the battery compartment, then re-install the compartment cover/door.

Check for proper operation of the transmitter by sliding the power switch to the ON position (slide it to the right). You should hear three beeps/tones from the transmitter while the LED indicator directly above the power switch begins to glow solid red. This indicates that the transmitter is powered on and that the AA batteries are installed correctly.

Transmitter Details

The RTF version Taylorcraft 130 includes an M4MPA-200C Micro 4-Channel MP Airplane Transmitter equipped with a built-in 200mA 1-Cell/1S 3.7V LiPo battery charger, 2.4GHz technology and digital trims.

IMPORTANT NOTE: As is typical of most '3-channel' models that are equipped with a rudder for primary 'turning' control, the aileron control stick/channel is used to control the rudder on the 'stock/3-channel' version Taylorcraft 130. This helps to ensure an easier transition to controlling the '4-channel' version and other models equipped with ailerons later on.



Low Battery Power Indications

When the AA battery power drops to a level that's too low for safe continued operation, the transmitter offers the following indications:

- When charging a LiPo battery with the transmitter powered off, the yellow CHG (charge) LED indicator will dim noticeably until the AA batteries are replaced with new ones.
- When the transmitter is powered on, and whether or not a LiPo battery is being charged, it will emit a constant beep/tone until the AA batteries are replaced with new ones.

Antenna Position/Orientation

The RF output signals transmit best/strongest from the shaft of the antenna rather than from the tip. As a result you should never point the tip of the antenna directly at the model when flying. Also, the transmitter antenna can be rotated and folded up to 90° so be sure to hold the transmitter and position the antenna as needed to ensure the best possible signal transmission.

Control/Servo Reversing

The M4MPA-200C transmitter features control/servo reversing functionality for the rudder, elevator and aileron channels. The control/servo directions were set correctly at the factory for the RTF version Taylorcraft 130, however, in case any of the controls are operating in the wrong direction, or you use the electronics in other models later on, please follow these steps to change the control/servo directions as needed (complete all steps with the transmitter powered on):

- Rudder Channel Control/Servo Reversing
Press and hold the right rudder trim button, then press the left rudder trim button. Release both buttons and the control/servo direction will be reversed.
- Elevator Channel Control/Servo Reversing
Press and hold the right rudder trim button, then press the down elevator (top) trim button. Release both buttons and the control/servo direction will be reversed.
- Aileron Channel Control/Servo Reversing
Press and hold the right rudder trim button, then press the right aileron trim button. Release both buttons and the control/servo direction will be reversed.

Installing the LiPo Flight Battery

NOTE: You must ALWAYS turn the transmitter on first, BEFORE connecting/installing the LiPo flight battery. And before proceeding with the following steps, please be sure the transmitter is powered on.

After the LiPo battery has been fully charged it's ready to be installed in the airplane. However, the first step before installing the battery is to connect it to the 3-in-1 control unit. **YOU MUST BE CAREFUL TO ENSURE PROPER POLARITY BEFORE CONNECTING THE BATTERY TO THE 3-IN-1 CONTROL UNIT. By orienting/aligning the small red circle marking on the housing of the battery with the small red circle marking on the connector for the 3-in-1 control unit you'll be able to make the connection with correct polarity.**

Also, although the 'ultra-micro' connectors are 'keyed' to minimize the risk of a reverse polarity connection, if you force them it is possible to make the connection with incorrect polarity potentially causing damage to the 3-in-1 control unit and/or battery. When the red circle markings are properly aligned for correct polarity, connecting the white color connectors should require only a minimal amount of pressure to achieve the light 'click' that indicates secure connection.

After the LiPo battery is connected to the 3-in-1 control unit the unique magnetic attachment design makes it quick and easy to install the battery in the airplane. Simply place the side of the battery with the magnetic attachments against the magnets located in the battery compartment and the battery will be mounted securely in the airplane.



To remove the LiPo flight battery, lift it away from the magnets then disconnect it from the 3-in-1 control unit. **DO NOT** power off the transmitter until the LiPo flight battery is removed from the airplane and the 3-in-1 control unit is powered off. **REMEMBER: The transmitter is always on first and always off last!**

Control Unit Initialization and Arming

The Taylorcraft 130 is equipped with a compact and advanced 3-in-1 control unit. The control unit is a lightweight combination of a 2.4GHz receiver, two servos and an electronic speed control (ESC).

This checklist includes the steps you must follow to ensure proper initialization, arming and operation of the control unit:

- ❑ **Before each flight you should always turn the transmitter on before connecting the LiPo flight battery to the control unit. Never connect the battery to the control unit before turning the transmitter on first. After each flight you should always disconnect the battery from the control unit before turning the transmitter off.**
- ❑ **The left-hand/throttle stick must be set in the lowest possible position in order for the ESC of the control unit to arm.**



- ❑ Turn the transmitter on and confirm that the LED indicator is glowing solid red. Then connect and install the LiPo flight battery in the airplane.

NOTE: If this will be the first flight, or the first flight following repairs, you should center the elevator and rudder (aileron) channel/control trims. Press the digital trim buttons to determine the 'center' trim position by using the audible beeps/tones for reference (typically eight beeps away from the maximum up/down or left/right trim setting will be the center trim setting).

- After the LiPo flight battery is connected to the control unit the servos/control surfaces should move back and forth briefly to indicate that the control unit has initialized properly.

Also, as long as you had the left-hand/throttle stick set to the lowest possible position during the initialization process the ESC/motor will now be armed. USE CAUTION AS THE PROPELLER WILL NOW SPIN WHEN THE LEFT-HAND/THROTTLE STICK IS RAISED ABOVE THE LOWEST POSSIBLE POSITION!

In case the servos/control surfaces do not move back and forth briefly:

- If the servos/control surfaces do not move back and forth briefly you do not have a positive radio frequency (RF) link between the transmitter and the receiver of the control unit. First, check to be sure the transmitter is powered on and that the LED indicator on the transmitter is glowing solid red. If the transmitter is powered on and functioning properly, disconnect the LiPo flight battery from the control unit. Then reconnect the battery and now the control unit should initialize and arm properly.

In case the servos/control surfaces move back and forth but you have no control of the ESC/motor:

- If the servos/control surfaces move back and forth briefly but you do not have control of the motor, you have a positive RF link between the transmitter and receiver but the ESC/motor did not arm because the left-hand/throttle stick may not be set to the correct position. Check to be sure the left-hand/throttle stick is in the lowest possible position, and once in the correct position the ESC/motor should be armed and respond to control stick inputs accordingly.

After confirming the control unit is initialized and the ESC/motor has armed properly the Taylorcraft 130 is ready to fly! However, please review the following sections of this manual BEFORE proceeding with the first flight.

Flight Controls and Trimming

In the event you are not familiar with the controls of the Taylorcraft 130, please take the time to familiarize yourself with them as follows and before attempting your first flight.

The left-hand stick on the transmitter controls the throttle. When the left-hand stick (also known as the 'throttle' stick) is in the lowest possible position the propeller will not spin.



Moving the stick upward will increase the speed/RPM of the propeller. Increasing the speed of the propeller increases the speed of the model and also provides the thrust needed to climb/increase altitude.



Decreasing the speed/RPM of the propeller by lowering the left-hand stick will decrease the speed of the model and reduce thrust making it possible to descend/decrease altitude.

During flight you can adjust the throttle to a position (typically having the left-hand stick set to between 1/3 and 2/3 of its travel above the lowest possible position) to 'cruise' at a given altitude.

The right-hand stick controls both the elevator and the rudder. Pushing the stick forward/upward will lower the elevator and pitch the nose of the airplane downward to descend.



Pulling the stick backward/downward will raise the elevator and pitch the nose of the airplane upward to climb.



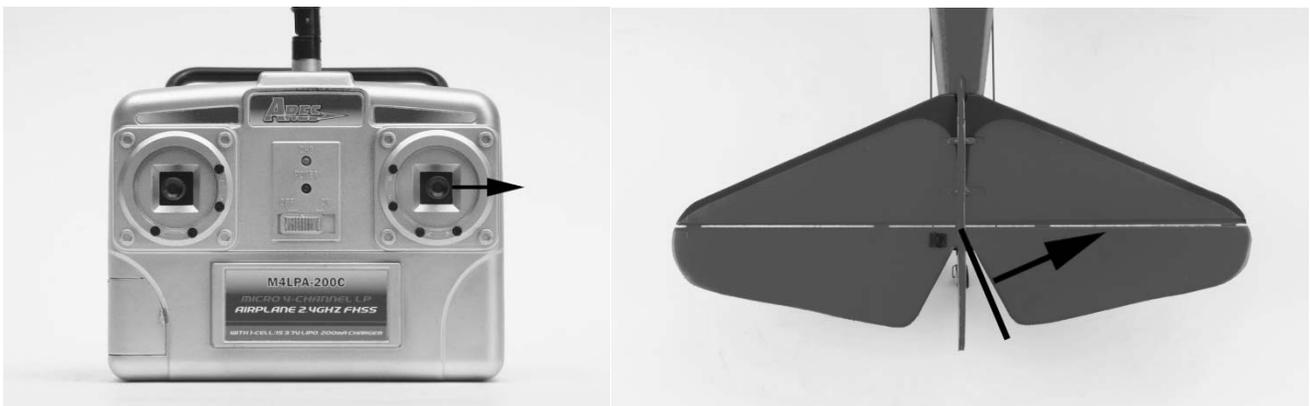
The elevator channel trim (the buttons located directly to the left of the right-hand stick) can be used to help keep the airplane from climbing or descending when in cruise flight and with no right-hand stick/elevator control input. For example if the airplane climbs when attempting to cruise and maintain a given altitude, add down elevator trim by pressing the top trim button until the airplane flies as level as possible and maintains the desired altitude at cruise speed.

IMPORTANT NOTE: As is typical of most '3-channel' models that are equipped with a rudder for primary 'turning' control, the aileron control stick/channel is used to control the rudder on the 'stock/3-channel' version Taylorcraft 130. This helps to ensure an easier transition to controlling the '4-channel' version and other models equipped with ailerons later on.

Moving the stick to the left will move the rudder to the left. This will roll/turn the airplane to the left.



Moving the stick to the right will move the rudder to the right. This will roll/turn the airplane to the right.



The rudder (aileron) channel trim (the buttons located directly below the right-hand stick) can be used to help keep the airplane from drifting/turning left or right during flight with no right-hand stick/rudder control input. For example if the airplane drifts to the right in flight, add left trim by pressing the left trim button until the airplane flies as straight as possible without drifting.

And once you're familiar with the primary controls of the airplane you're almost ready to fly!

Selecting a Flying Area

When you're ready to make your first flights you'll want to select an open outdoor area free of people and obstructions. We suggest an area approximately the size of a soccer field when making your first few flights. We also suggest flying over grass as it's a much more forgiving surface that causes less damage in the unfortunate event of a crash. However, please note that when attempting to land on grass it can 'catch' the landing gear, potentially causing the model to flip over and become damaged. This in mind an ideal area allows for flying over grass and landing on a smoother surface such as asphalt or the dirt of a baseball infield.

Also, while the Taylorcraft 130's full-airfoil wing design helps make it possible to fly in light wind conditions we strongly suggest flying only in calm conditions until you're familiar with the controls and handling of the model. Even light winds can make it much more difficult to learn to fly, and in some cases can even carry the model beyond your line of sight and the range of the transmitter signal.

After you've properly trimmed the airplane in calm conditions and become familiar with its handling and capabilities you'll be able to fly in light winds and smaller outdoor areas. You may also be able to fly in larger indoor spaces such as a basketball gym.

Flying

Now that you've selected a suitable flying area you're ready to fly! And when making your first flights we suggest following these steps:

- There are two ways to get the Taylorcraft 130 into the air. The first, and our suggested method for first-time pilots, is to hand-launch the model. This is easy to accomplish by holding the fuselage of the model (just behind the landing gear) between your index and/or middle finger and thumb with the wings and nose level (relative to the horizon and the ground). Then, raise the left-hand/throttle stick to the highest/full-power position and gently 'push' the model forward. The airplane will be flying almost immediately after it leaves your hand allowing you to focus on keeping the wings level while continuing to climb to a safe altitude.

The second way to get the model into the air is to perform a Rise Off Ground (R.O.G.) take off from a smooth, level surface. Set the model on the takeoff surface **WITH THE NOSE POINTED INTO ANY WIND** then raise the left-hand/throttle stick to the highest/full-power position while keeping the nose pointed into the wind and the wings level by using the rudder. When the model reaches flying speed it will slowly rise off the ground.

IMPORTANT NOTE: After hand-launch or R.O.G. takeoff you must be sure to not raise the nose of the airplane too much (more than approximately 20-30 degrees) as doing so could cause the airplane to stall and crash. This is one of the most common ways for first-time and low-time pilots to crash.

- After launch/takeoff, focus on keeping the rate of climb smooth and steady and the wings level until reaching an altitude of approximately 90 to 120 feet high. Higher is even better as long as you can still see the airplane clearly. But remember, the Taylorcraft 130 is a relatively small airplane so you want to be sure to keep it at an altitude and distance that allows you time to react but also makes it possible to know the exact orientation of the airplane so you can always respond accordingly.
- At the desired altitude you can level the airplane off by pushing forward slightly on the right-hand stick (down elevator) until the airplane is flying level. Then, reduce the power by lowering the left-hand/throttle stick to between the 1/2 and 2/3 position for cruise flight.
- You'll find that it only takes small/minor rudder inputs to change direction in flight. Remember to keep these inputs as minimal as possible as significant inputs, such as moving the stick all the way to the left or right and holding it there, could result in over-control, loss of orientation and/or a possible crash.
- If you find the airplane constantly climbs, descends or drifts left or right without any directional control input you'll need to make adjustments to the trim settings using the trim buttons on the transmitter (you can find more information regarding the location and function of the trim buttons in the 'Understanding the Flight Controls and Trimming' section of this manual):
 - If the airplane is drifting to the left or right adjust the trim for the rudder (using the aileron channel trims).
 - If the airplane is climbing at cruise throttle/power, add down elevator trim and/or reduce the throttle/power slightly.
 - If the airplane is descending at cruise throttle/power, add up elevator trim and/or increase the throttle/power slightly.

It's important to continue making trim adjustments as needed until the airplane maintains straight and level flight with very little drifting or directional control input. Also, if this is your first airplane model it may be best to enlist the help of an experienced airplane pilot to trim the model for you before making your first flight. A properly trimmed airplane is much easier and more enjoyable to fly!

- When the airplane is properly trimmed practice making shallow (approximately 5-15 degree bank) turns by using a small amount of rudder to roll the airplane then a small amount of 'up' elevator to keep the nose from dropping and to help 'pull' the airplane through the turn. Then apply the opposite direction rudder to bring the wing back to level before starting the next turn.

- Sharper turns (approximately 15+ degree bank) will require more rudder and elevator input. Try not to excessively bank the model beyond 30-45 degrees as doing so can cause the airplane to lose altitude very quickly.
- **If at any time during flight you feel like the airplane is drifting out of/beyond your control, simply release the elevator and rudder controls. In most cases this will allow the airplane to return to nearly level flight on its own. Also, if the airplane is flying too high or too far away, lower the left-hand/throttle stick completely to power off the motor and allow the airplane to descend to a more reasonable altitude/position.**
- At typical cruise throttle/power settings the Taylorcraft 130 will fly for up to 10+ minutes per charge. However, we strongly recommend using a timer to keep track of your time in the air and to land after approximately 6-8 minutes to ensure you have plenty of power to practice landing approaches and to 'go around' if needed.

NOTE: You can lose all power abruptly if the voltage of the battery drops too low.

- Lowering the left-hand/throttle stick to less than the 1/2 or 1/3 position will allow the airplane to enter a shallow descent. This is helpful if the airplane has climbed too high and when it's time to set up for landing.
- To land, point the nose directly into any wind at an altitude of approximately 50-75 feet above the ground and approximately 150-300 feet away from the desired landing area. Lower the left-hand/throttle stick to approximately the 1/3 position as you descend slowly to approximately 20-30 feet of altitude, then lower the stick to the 1/4 or 1/8 position. At approximately 2-4 feet above the ground lower the stick all the way to turn off the power completely while allowing the airplane to descend naturally. Just before the airplane contacts the ground add a small amount of up elevator to bring the nose up and 'flare' for a smooth landing.

Later on you can practice landing with a small amount of throttle/power to help smooth out the approach and touchdown. However, you must be sure to lower the throttle/turn off the power completely if the prop comes into contact with the ground.

- **IN THE UNFORTUNATE EVENT OF A CRASH OR PROPELLER STRIKE, NO MATTER HOW MAJOR OR MINOR, YOU MUST LOWER THE LEFT-HAND/THROTTLE STICK TO THE LOWEST POSSIBLE POSITION AS QUICKLY AS POSSIBLE TO PREVENT DAMAGE TO THE ESC OF THE CONTROL UNIT.**

If you do not lower the left-hand/throttle stick to the lowest possible position in the event of a crash/propeller strike it can result in damage to the ESC which may require replacement of the control unit.

NOTE: Crash damage is not covered under warranty.

Removing/Installing the Wing

The Taylorcraft 130 features an exclusive magnetic attachment design for the wing and wing struts that allows for quick and easy removal for more compact transport and storage. This also makes it easy to remove the wing for maintenance or repairs without time consuming work or the use of glue and tape.

There are two magnets on the bottom of each side of the wing and one magnet on the bottom of each side of the fuselage that hold the wing struts in place. Carefully pull the struts away from the magnets on the wing and fuselage by holding them near the attachments. There are also two magnets holding the trailing edge section of the wing to the fuselage and a wooden tab that holds the leading edge section of the wing to the fuselage. To remove the wing, place a finger on each side of the fuselage and under the trailing edge of the wing. Lift upward on the trailing edge of the wing and apply just enough pressure to release the magnetic attachment and raise the trailing edge approximately 1/4" to 1/2" above the fuselage. Then carefully slide the wing toward the back of the airplane to disengage the tab at the front. When the tab is disengaged you can lift the wing away from the fuselage entirely.



To install the wing, slide the tab at the leading edge forward into the fuselage then lower the trailing edge against the top of the fuselage. You should feel the magnets in the fuselage pull the attachments in the wing against them. Carefully press the top of the trailing edge of the wing against the fuselage to ensure the attachment is secure before installing the wing struts. The struts are marked for easy identification of left and right (when viewing the airplane from behind), and when the attachments on the struts are placed near the magnets on the wing and fuselage they will automatically 'snap' securely in place.

Optional Brushless Power System

Brushless motors are typically more efficient and can deliver higher power-to-weight ratios than their brushed motor counterparts. This makes upgrading to the optional brushless power system an excellent choice for those interested in maximizing the flight duration, performance and/or aerobatic potential of their model.

The Taylorcraft 130 is designed for quick and easy installation of the optional Brushless Power System Upgrade Combo. Please see our web site at www.Ares-RC.com and the Taylorcraft 130 product and parts pages for more information on the combo including the item number, instructions for installing the system and more.

Optional Clipped Aileron (Aerobatic) Wing Set

For full 4-channel control and aerobatic capability, the optional Clipped Aileron (Aerobatic) Wing Set (AZS1369) can be mounted in place of the standard wing without the need for any modifications. The aileron-equipped wing also features reduced dihedral and a shorter 'clipped' wing span for improved maneuverability and aerobatic capability.

IMPORTANT NOTE: The 3-in-1 control unit features unique and exclusive software that automatically 'moves' control of the rudder from right-hand/aileron stick to the left-hand/rudder stick when the separate Ultra-Micro Rotary Servo (AZS1357) used for aileron control is connected. Also, the separate servo **MUST** be connected to the control unit **BEFORE** the control units is powered on in order for the software to recognize it and move control of the rudder accordingly.



This list includes the parts, tools and other components required to complete and install the Clipped Aileron (Aerobatic) Wing Set:

Parts/Tools Required:

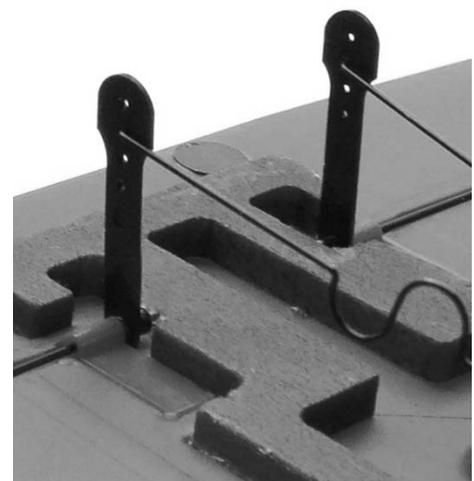
- Clipped Aileron (Aerobatic) Wing Set (AZS1369); 1pc
- Clipped Aileron (Aerobatic) Wing Strut Set (AZS1370); 1pc
- Ultra-Micro Rotary Servo (AZS1357); 1pc
- Small Phillips screwdriver
- Small needle nose pliers or hemostats

The Clipped Aileron (Aerobatic) Wing Set (AZS1369) is mostly assembled right out of the box. Remove all parts from the box including the wing and the pushrods. Also remove the Ultra-Micro Rotary Servo (AZS1357) and mounting screws from the packaging.

Mount the servo to the wing by orienting the servo so the motor drops into the recess near the center of the wing. Then, align the four mounting holes on the PCB of the servo with the corresponding mounting points of the plastic servo mount already attached to the wing and use the small Phillips screwdriver to secure the servo in place with four screws (do not over-tighten!).

Locate the pushrods and carefully slide one 'Z-bend' on each into the outermost hole on either side of the servo output gear/arm. Next, very carefully slide the Z-bend on the other end of each pushrod into the same 'height' holes on both control horns (it may be helpful to use small needle nose pliers or hemostats).

IMPORTANT NOTE: The hole you slide the Z-bend into on the control horn will affect the amount of aileron travel and control/response. For example, if you slide the Z-bend through the hole that's farthest from the wing you will achieve the least amount of aileron travel and control/response (this is NOT recommended as it may not provide adequate control/response, especially when flying in light wind conditions). Or, if you slide the Z-bend through the hole that's closest to the wing you will achieve the maximum amount of aileron travel and control/response (recommended ONLY for experienced pilots interested in performing advanced aerobatics). As a result we recommend sliding the Z-bend through the holes that are second and third from the wing for good overall aileron travel and control/response.



Assembly of the Clipped Aileron Wing Set is now complete. However, before attaching the wing to the fuselage you must ensure that the ailerons are 'level' when the servo is powered on and the aileron channel trim is centered.

Turn the transmitter on and center the aileron channel trim (the buttons located directly below the right-hand stick) by using the audible beeps/tones for reference (typically eight beeps away from the maximum left or right trim setting will be the center trim setting). Then, very carefully plug the 6-pin connector attached to the wire leads of the aileron servo into the corresponding connector located on the control unit. It's helpful to use small needle nose pliers or hemostats to plug the connector in and be sure to exercise extreme care so you do not damage the fuselage or any other parts. Also, although the 6-pin connectors are 'keyed' to minimize the risk of a reverse polarity connection, if you force them it is possible to make the connection with incorrect polarity potentially causing damage to the 3-in-1 control unit and/or servo. When the connectors are properly aligned it should only take a minimal amount of pressure to achieve the light 'click' that indicates secure connection.

After connecting the 'aileron' servo to the control unit connect the LiPo flight battery to the control unit. **USE CAUTION AS THE PROPELLER WILL NOW SPIN WHEN THE LEFT-HAND/THROTTLE STICK IS RAISED ABOVE THE LOWEST POSSIBLE POSITION!** Check to be sure the aileron servo responds to both left and right control inputs then center the right-hand stick.

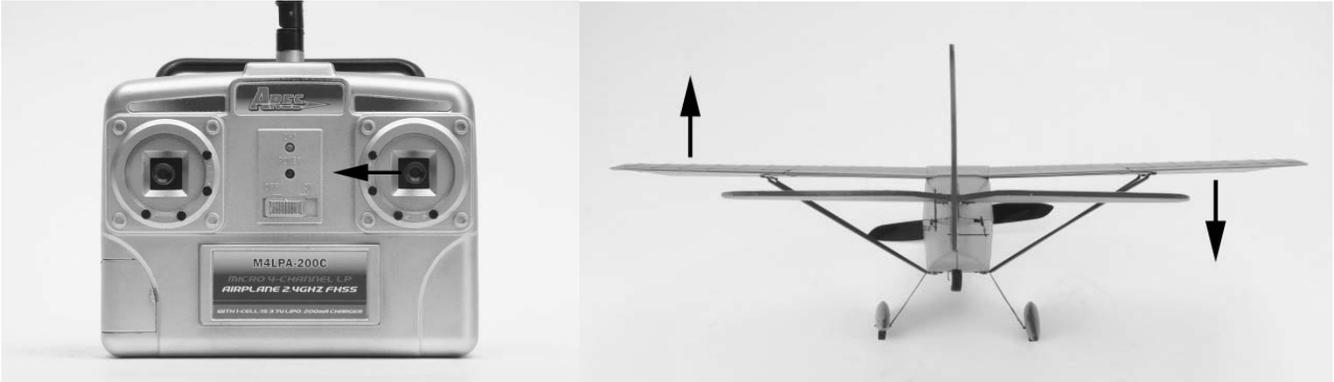
With the right-hand stick and aileron channel trim centered the servo should also be centered. Now view the trailing (rear) edge of the ailerons and wing from directly behind. The trailing edges of the ailerons should be 'in line' with the trailing edges of the wing when ailerons are properly 'centered'. However, if the ailerons are 'off center' you can adjust the 'length' of the pushrods as needed. If either aileron is 'above' center carefully squeeze the outsides of the 'S-bend' near the middle of the pushrod together using small needle nose pliers or hemostats to 'shorten' the length of the pushrod and lower the neutral position of the aileron. Or, if either aileron is 'below' center carefully spread the outsides of the 'S-bend' apart to lengthen the pushrod. View the trailing edges of the ailerons and wing from directly behind again and continue adjusting the length of each pushrod until both ailerons are centered appropriately.

Attaching the Clipped Aileron (Aerobatic) Wing

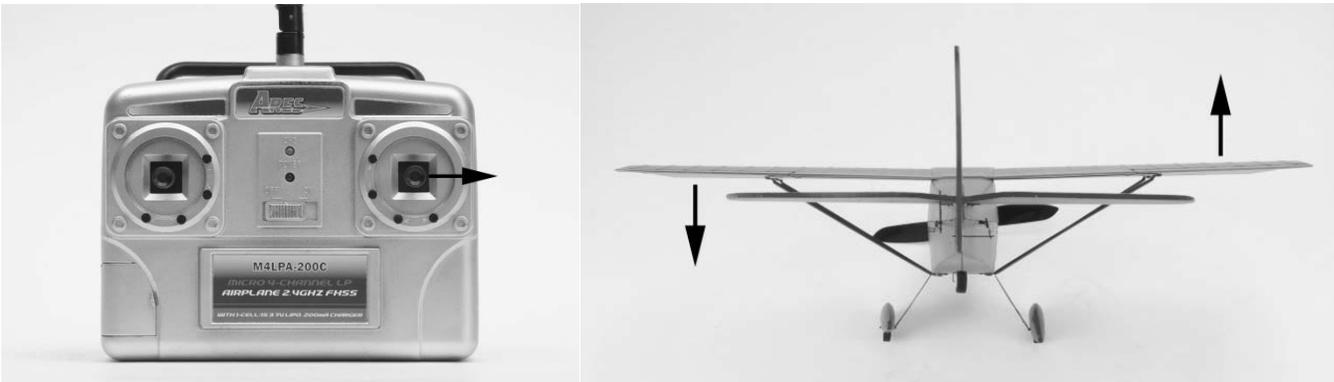
With the aileron servo connected to the control unit, slide the tab at the leading edge of the wing forward into the fuselage then lower the trailing edge against the top of the fuselage. You should feel the magnets in the fuselage pull the attachments in the wing against them. Carefully press the top of the trailing edge of the wing against the fuselage to ensure the attachment is secure before installing the wing struts. The struts are marked for easy identification of left and right (when viewing the airplane from behind), and when the attachments on the struts are placed near the magnets on the wing and fuselage they will automatically 'snap' securely in place.

With the wing attached to the fuselage orient the airframe so you can view the ailerons from behind. This will allow you to confirm that the ailerons are functioning correctly and moving in the right directions based on right-hand/aileron control stick movements:

Moving the right-hand stick to the left will move the left aileron up and the right aileron down. This will roll/turn the airplane to the left.



Moving the stick to the right will move the right aileron up and the left aileron down. This will roll/turn the airplane to the right.



The aileron channel trim (the buttons located directly below the right-hand stick) can be used to help keep the airplane from drifting/turning left or right during flight with no right-hand stick/aileron control input. For example if the airplane drifts to the right in flight, add left trim by pressing the left trim button until the airplane flies as straight as possible without drifting.

After confirming the ailerons are functioning correctly and moving in the right directions you are ready to fly with the Clipped Aileron (Aerobatic) Wing. Also, due to the differences in dihedral and wing span, as well as the addition of ailerons, the airplane will fly noticeably different with the aileron wing versus the standard wing installed. As a result you should treat the first flight with the aileron wing the same as the first flight of a new model.

Repairs

The major airframe components (wing, tails and fuselage) of the Taylorcraft 130 are molded from lightweight and durable EPS foam. Most damage can be repaired using Odorless, also known as 'Foam-Safe', Cyanoacrylate (CA) glue. We recommend Medium/Gap-Filling for most repairs, though Thin can also be used for some others. Also, if you use Accelerator, it must also be Foam-Safe and compatible with your chosen CA glue.

You can also use standard black and red color Sharpie® brand markers to touch-up the black and red color paint on the foam airframe parts.

And in the unfortunate event that any part cannot be repaired, a full line of replacement parts is available separately. Please visit our web site at www.Ares-RC.com or contact your local dealer for more information and to purchase replacement parts.

Replacement Parts List

Item Number	Description
AZSB2001S15UM	200mAh 1-Cell/1S 3.7V 15C LiPo Battery, Ultra-Micro Connector: Taylorcraft 130
AZSC104CUSB	104C 1-Cell/1S 3.7V LiPo, 0.4A DC USB Charger: Taylorcraft 130
AZS1107	Replacement Rotary Servo Mechanics: Trainer 100, Taylorcraft 130
AZS1109	Motor w/Pinion Gear: Trainer 100, Taylorcraft 130
AZS1138AMD2	M4MPA-200C Micro 4-Channel MP Airplane Transmitter w/200mA Charger, Mode 2: Trainer 100, Taylorcraft 130
AZS1356	4-Channel, 3-in-1 Control Unit; Rx/2 Sx/ESC: Taylorcraft 130
AZS1357	Ultra-Micro Rotary Servo: Taylorcraft 130
AZS1359	Gearbox/Motor Mount Stick Set: Taylorcraft 130
AZS1360	Gearbox with Motor: Taylorcraft 130
AZS1361	Gearbox with Shaft: Taylorcraft 130
AZS1362	Propeller/Gearbox Shaft with Gear: Taylorcraft 130
AZS1363	Standard Wing with Decals: Taylorcraft 130
AZS1364	Standard Wing Strut Set: Taylorcraft 130
AZS1365	Tail Set with Decals and Hardware: Taylorcraft 130
AZS1366	Fuselage with Decals: Taylorcraft 130
AZS1367	Main Landing Gear Set: Taylorcraft 130
AZS1368	Pushrod Set: Taylorcraft 130
AZS1369	Clipped Aileron (Aerobatic) Wing Set: Taylorcraft 130
AZS1370	Clipped Aileron (Aerobatic) Wing Strut Set: Taylorcraft 130
AZSP0590275UM	5.9 x 2.75 (150 x 70mm) Ultra-Micro Propeller and Spinner: Taylorcraft 130

Warranty, Support and Service

30-Day Limited Warranty Term Period:

We warranty that the Product(s) purchased (the “Product”) will be free from defects in materials and workmanship when the product is new (before being used) for the limited warranty term period, 30 days, from the date of purchase by the Purchaser. If you believe a defect in material, workmanship, etc. was not apparent when the Product was new and only became evident after the Product was used, take the following steps. If you purchased the Product at a HobbyTown store, please contact your local HobbyTown store for warranty support and/or service. If you purchased the Product from the Firelands website, use the contact information found under the Support heading to contact Firelands directly.

If you contact Firelands, you may be asked to send the product to Firelands, at your cost, for inspection. Provided the warranty conditions have been met within the warranty term period, the components that are found to be defective, incorrectly manufactured or assembled may be repaired or replaced, at the sole discretion of Firelands. Your warranty item will be returned to you at Firelands’ expense. In the event your product needs repair or a replacement part that is not covered by this warranty, your local HobbyTown store or Firelands can assist you with support and in obtaining the genuine replacement parts to repair your Product. Firelands will charge \$40.00 per hour plus the cost of replacement parts to service your vehicle if after contacting you, you so authorize such repairs. Your product will be returned to you at your expense.

If you purchased your Product from a HobbyTown Internet site not affiliated with a local store, please consult that site for its support and service policies. You can also find more information at

www.Hobbytown.com., by emailing customerservice@firelandsgroup.com or call 800-205-6773



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