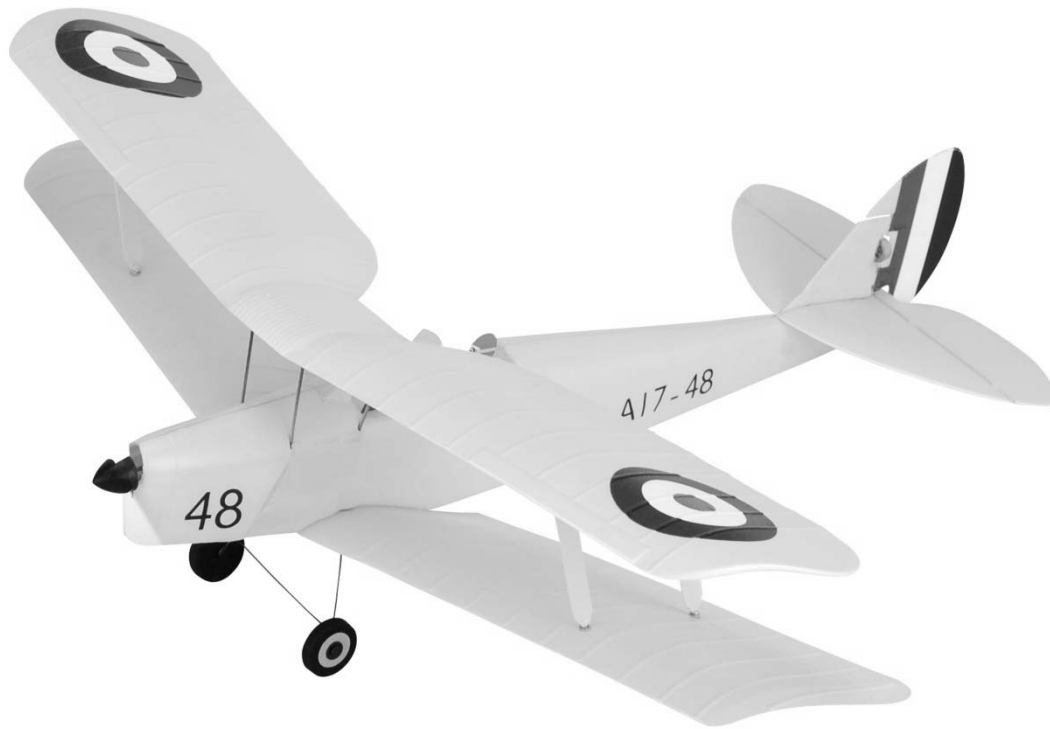




Instruction Manual



Specifications

Wingspan:	11.4 in (290mm)
Length:	10.8 in (275mm)
Weight with Battery:	0.5 oz (14g)
Battery:	50mAh 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:	3-channel 2.4GHz w/LiPo charger (included with RTF, required for WOT)
On-Board Electronics:	3-in-1 receiver/ESC/servo and magnetic actuator (installed in RTF and WOT)

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Introduction

The Ares™ [*air-eez*] Tiger Moth 75 is a semi-scale model of de Havilland's classic biplane design that became the RAF's primary trainer of choice in the 1930's and 40's. The Tiger Moth's docile handling, forgiving flight characteristics and full aerobatic capability made it an ideal choice for training the future pilots of fighters including the Spitfire and Hurricane through WWII and beyond.

Weighing in at only 14 grams (0.5 oz) ready-to-fly, the Tiger Moth 75 is a great choice when looking for a lightweight airplane to fly in more places than ever before. The nano-micro size and low weight allow for slow and easy flying in smaller indoor spaces from a great room at home to a conference room at the office, and fully proportional 3-channel throttle, rudder and elevator controls offer plenty of maneuverability for flying outdoors in calm to light wind conditions too.

A variety of scale finishes include an authentic trim scheme, molded wing rib details and pilots, and lightweight yet durable construction means you don't always have to worry about damage after less than perfect training missions or landings. The Tiger Moth 75's unique airframe design assembles with magnets and interlocking parts for easy maintenance and repairs without glue, plus it arrives 100% factory-assembled and ready-to-fly right out of the box!

And although the Tiger Moth 75 is ready-to-fly right out the box, please take the time to read through this manual for more information about battery safety and charging, control checks and more before making your first flight. Please also visit our web site at www.Ares-RC.com for additional information including product updates, 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

Tiger Moth 75 RTF (Ready-To-Fly) Contents

Item	Description
Not Available Separately	Tiger Moth 75 Nano-Micro RTF Airframe
AZS1158AMD2.....	M3LPA-100C Micro 3-Channel LP Airplane Transmitter w/100mA Charger, Mode 2
Not Available Separately	4 AA Batteries
AZSB501S10UM.....	50mAh 1-Cell/1S 3.7V 10C LiPo Battery, Ultra-Micro Connector



Tiger Moth 75 WOT (Without Transmitter) Contents

Item	Description
Not Available Separately	Tiger Moth 75 Nano-Micro RTF Airframe
AZSB501S10UM.....	50mAh 1-Cell/1S 3.7V 10C LiPo Battery, Ultra-Micro Connector
AZSC101CUSB.....	101C 1-Cell/1S 3.7V LiPo, 0.1A DC USB Charger (not shown)

Required to Complete

The Tiger Moth 75 RTF (Ready-To-Fly) version includes everything needed to fly right out of the box. There's nothing extra to buy or provide!

The Tiger Moth 75 WOT (Without Transmitter) version requires the following items:

- Compatible Ares 2.4GHz 3+ channel transmitter, including (as of August 2012) one of the following:
 - **M3LPA-100C** (included with Stick 75 RTF, Tiger Moth 75 RTF and other models)
 - **M4LPA-200C** (included with some Trainer 100 RTF and other models)
 - **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 2012) compatible transmitter models:

- Switch the transmitter on and connect the flight battery to the control unit.
- For M3LPA-100C transmitters:**
Press and hold the UP (bottom) elevator trim button, then press the RIGHT rudder (aileron) trim button. 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).
- For M4LPA-200C and M4MPA-200C transmitters:**
Simultaneously press the two throttle trim buttons (both the top and bottom buttons to the right-side 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 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 flight battery (connect it to a suitably compatible LiPo charger)
- Install the flight battery in the airplane (after it's been fully charged)
- Test the controls to confirm proper operation
- Familiarize yourself with the controls
- 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

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 your complete product in new, unused condition to the place of purchase immediately.

And although the 50mAh 1-Cell/1S 3.7V 10C LiPo Battery (AZSB501S10UM) included with the Tiger Moth 75 is intended to be charged safely using either the LiPo battery charger built into the M3LPA-100C Micro 3-Channel LP Airplane Transmitter w/100mA Charger (AZS1158AMD2; included with the RTF version), or the 101C 1-Cell/1S 3.7V LiPo, 0.1A DC USB Charger (AZSC101USB; 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 M3LPA-100C Micro 3-Channel LP Airplane Transmitter w/100mA Charger (AZS1158AMD2), the 101C 1-Cell/1S 3.7V LiPo, 0.1A DC USB Charger (AZSC101USB) 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 Tiger Moth 75 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 50mAh 1-Cell/1S 3.7V 10C LiPo Battery (AZSB501S10UM) using either the LiPo battery charger built into the M3LPA-100C Micro 3-Channel LP Airplane Transmitter w/100mA Charger (AZS1158AMD2; included with the RTF version), the 101C 1-Cell/1S 3.7V LiPo, 0.1A DC USB Charger (AZSC101CUSB; 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 battery **with the charger built into the M3LPA-100C transmitter**:

- Carefully open the small hatch located on the left side of the transmitter (near the bottom left corner) 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 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 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 35-50 minutes to charge a fully discharged (not over-discharged) battery. And when the battery is fully charged the LED indicator will stop glowing yellow entirely. When the LED indicator is no longer glowing you can remove the battery from the charger as it is now fully charged and ready for use.

NOTE: The LiPo battery included with your new model will arrive partially charged. For this reason the initial charge may only take approximately 20-25 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 battery **with the 101C USB charger:**

- Connect the 101C charger to a suitable 5V USB connection 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 101C 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 101C charger is connected to a power source the LED indicator will 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 wire lead extending from the charger.**

While the white 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 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 brightly glow solid red. The battery will be charging anytime the LED indicator is brightly glowing solid red.

- It will take approximately 35-50 minutes to charge a 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 wire lead as it is now fully charged and ready for use.

NOTE: The LiPo battery included with a new model will arrive partially charged. For this reason the initial charge may only take approximately 20-25 minutes.

NOTE: When the LED indicator is flashing red the 101C charger is powered on and ready to begin charging the next LiPo battery that is connected to it.

Installing the Transmitter Batteries

Install four AA batteries (included with the RTF version) in the back of the M3LPA-100C transmitter by first removing the battery compartment cover/door. Ensure proper polarity of the batteries before installing them as indicated by the markings molded into the battery compartment, then re-install the compartment cover/door.

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

Transmitter Details

The RTF version Tiger Moth 75 includes an M3LPA-100C Micro 3-Channel LP Airplane transmitter equipped with 2.4GHz technology, digital trims and a built-in 1-cell/1S 3.7V, 100mA LiPo battery charger.



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.
- When the transmitter is powered on, and whether or not a LiPo battery is being charged, there will be a constant beep/tone until the AA batteries are replaced.

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. 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.

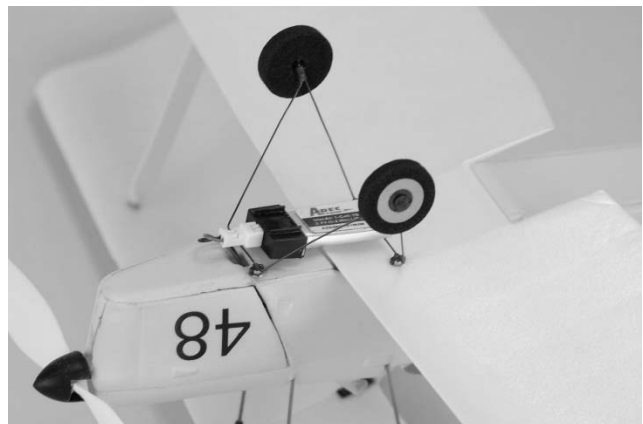
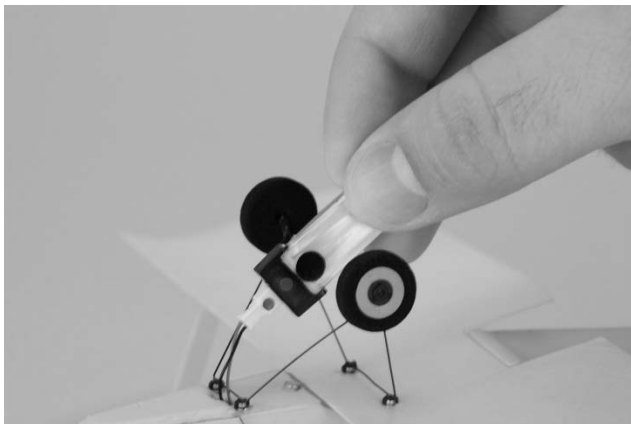
Installing the LiPo Flight Battery

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. **ALSO, YOU MUST BE CAREFUL TO ENSURE PROPER POLARITY BEFORE CONNECTING THE BATTERY TO THE 3-IN-1 CONTROL UNIT CONNECTOR. 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 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 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 on the airplane. Simply place the side of the battery with the magnetic attachments against the magnet located on the bottom of the fuselage (between the front and rear landing gear mounts) and the battery will be mounted securely on the airplane.



IMPORTANT NOTE: The battery is equipped with two magnetic attachments (not shown) that allow the battery to be positioned so it's closer to or further away from the front/nose of the airplane. Installing the battery so it's further away from the nose of the airplane (as shown) will result in a less 'nose heavy' Center-of-Gravity (CG) that allows the model to fly a bit more slowly and with a more 'nose high' attitude in cruise flight. This is particularly desirable when flying in smaller indoor areas.

Installing the battery so it's closer to the nose of the airplane (not shown) results in a more nose heavy CG for slightly faster cruise flight in larger indoor and outdoor areas.

To remove the LiPo flight battery lift it away from the magnet 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 Tiger Moth 75 is equipped with a compact and advanced 3-in-1 control unit. The control unit is a lightweight combination of a 2.4GHz receiver, electronic speed control (ESC) and servo.

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 flight battery to the control unit. Never connect the flight battery to the control unit before powering the transmitter on first. After each flight you should always disconnect the flight battery from the control unit before powering off the transmitter.**

- The left-hand/throttle stick must be set in the lowest possible position in order for the ESC of the control unit to arm.**



- Power the transmitter on and confirm that the 'POWER' LED indicator is glowing solid red. Then, connect the LiPo flight battery to the control unit and install it on the airplane.

NOTE: If this will be the first flight, or the first flight following repairs, you should center the elevator and rudder (aileron) control trims. Use the digital trim buttons to determine the 'center' trim position by using the audible beeps/tones for reference.

- After the flight battery is connected to the control unit the elevator and rudder should move back and forth briefly to indicate the control unit has initialized properly.
NOTE: If you hear a humming/buzzing sound coming from the magnetic actuator for the rudder (or lack thereof) after initialization is complete this is normal depending on the current trim/neutral position for the rudder. Also, the rudder will typically only move back and forth briefly when the rudder and vertical fin are in a vertical orientation (relative to the ground).
- If you had the left-hand/throttle stick set to the lowest possible position during the initialization process (or if not, lower the stick to the lowest possible position now), the ESC/motor will now be armed. **Use caution as the propeller will now spin when the left-hand/throttle stick is raised beyond the lowest possible position!**

In case the elevator and rudder do not move back and forth briefly and/or do not respond to control stick inputs:

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

In the event the elevator and rudder still do not respond to control stick inputs we recommend re-binding/linking the transmitter and receiver then trying again. Please see the 'Transmitter and Receiver Binding/Linking' section of this manual for more information.

In case the elevator and rudder do respond to control stick inputs but you have no control of the motor:

- If the elevator and rudder do respond to control stick inputs 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 have been set to the lowest possible 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 your Tiger Moth 75 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 Tiger Moth 75 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 motor/propeller will not spin.



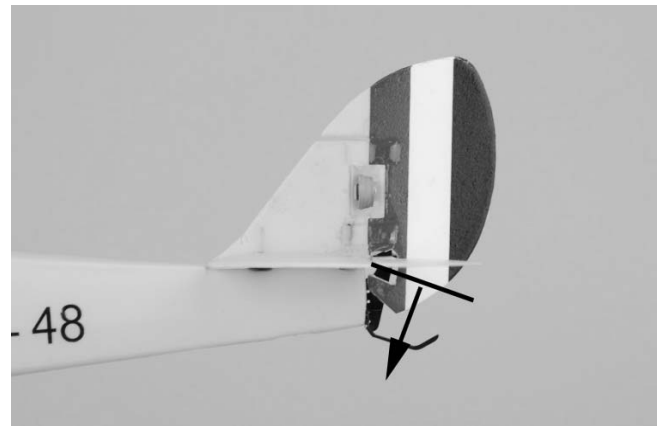
Moving the left-hand stick upward will increase the speed/RPM of the propeller. Increasing the speed of the propeller increases the speed of the model and also provides the thrust needed to climb/increase altitude.



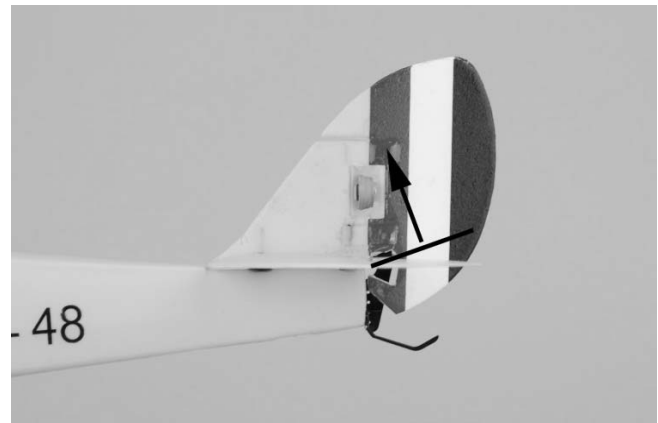
Decreasing the speed/RPM of the propeller by lowering the left-hand stick will decrease the speed of the model and reduce thrust making it possible to descend/decrease altitude.

During flight you can adjust the throttle to a position (typically having the left-hand stick set to between 1/3 and 1/2 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.



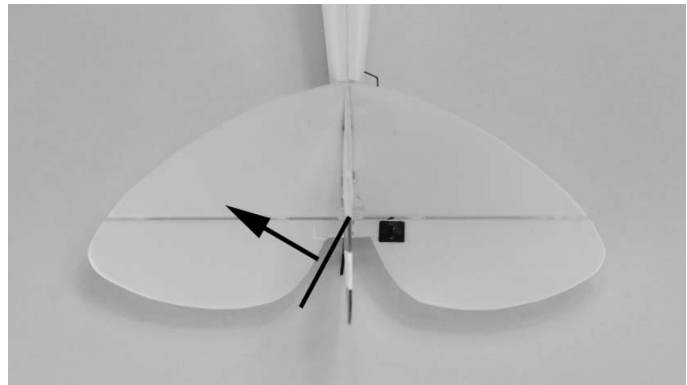
Pulling the stick backward/downward will raise the elevator and pitch the nose of the airplane upward to climb.



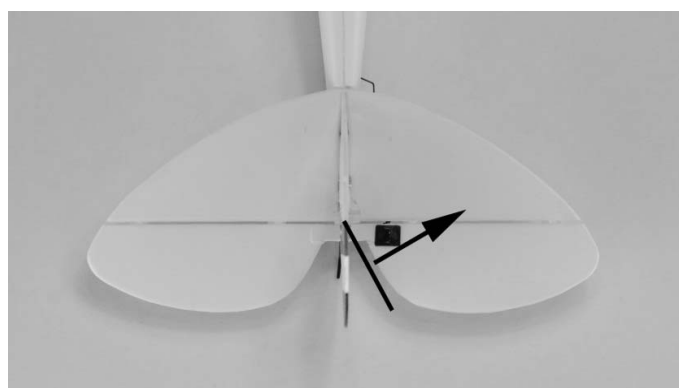
The elevator trim can be used to help keep the airplane from climbing or descending when in cruise flight and with no right-hand stick/elevator input. For example if the airplane climbs when attempting to cruise and maintain a given altitude, add down elevator trim until the airplane flies as level as 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 right-hand stick/'aileron' channel is used to control the rudder of the Tiger Moth 75. This helps to ensure an easier transition to controlling '4-channel' 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.



NOTE: The rudder may not always travel the same amount to the left and to the right. This is normal depending on the current trim/neutral position for the rudder. Also, the rudder must be in a vertical orientation (relative to the ground) in order to check for proper movement when the airplane is not flying. Any humming/buzzing sound coming from the magnetic actuator for the rudder (or lack thereof) is also normal.

The rudder trim 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 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

The relatively small size and light weight of the Tiger Moth 75 makes it ideal for flying indoors in suitable spaces, such as a great room at home or a conference room at the office, with dimensions of at least 15-feet by 15-feet with 8+ foot high ceilings. The Tiger Moth 75 can also be flown in larger indoor spaces or even outdoors in calm to light wind conditions.

And whether you're a low-time or experienced pilot we strongly recommend that you make your first flights in a larger indoor space (such as a basketball gym or warehouse) or outdoors in calm (no wind) conditions until you are familiar with the handling/capabilities of the model AND it's properly trimmed. Also, if you are a low-time pilot we highly recommend allowing a more experienced pilot to test fly and properly trim the model before attempting your first flight. A proven flyable and properly trimmed model is significantly easier and more enjoyable to fly!

When you're ready to make your first flights you'll want to select a suitable open area free of people and obstructions. And after you've properly trimmed the airplane and become familiar with its handling/capabilities you'll be able to fly in smaller and less open areas.

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 Tiger Moth 75 into the air. The first, and our suggested method for at least the first few flights, is to hand-launch the model. This is easy to accomplish by holding the fuselage of the model (just behind the wing) 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 approximately the middle/half-throttle position (the model will typically climb slowly or maintain altitude at this stick position/throttle setting) and gently 'push' the model forward. The airplane will be flying almost immediately after it leaves your hand allowing you to focus on using the rudder to keep the wings level while using throttle and elevator to maintain the desired altitude.

The second way to get the model into the air is to perform a Rise Off Ground (ROG) takeoff from a smooth, level surface. **However, in order to perform an ROG takeoff your chosen indoor or outdoor flying area MUST have a suitable amount of open space.**

To perform an ROG take off set the model on the takeoff surface then raise the left-hand/throttle stick to approximately the 3/4 to full throttle position.

IMPORTANT NOTE: Due to the scale airframe design and landing gear/wheel positions it's VERY important to hold FULL UP elevator when first starting and for most of the takeoff 'roll' in order to prevent the airplane from 'nosing over'.

When the model reaches flying speed it will rise off the ground and you will need to significantly reduce the amount of up elevator in order to prevent the model from climbing too quickly (and potentially entering a stall). Then, depending on the amount of space available and/or the altitude you would like to fly at it may be necessary to quickly lower the throttle stick to approximately the 1/2 position (or slightly lower) in order to cruise/maintain a given altitude.

IMPORTANT NOTE: After hand-launch or ROG 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 low-time pilots to crash.

- In most cases it will be best to focus on turning in only one direction until you have a good feel for the handling and capabilities of the model. You will also find that it's possible to turn well at approximately cruise speed (between 1/3 and 1/2 left-hand stick/throttle position) but that you can turn faster with more throttle/speed and rudder/elevator control input. However, be sure you don't add too much throttle/speed as it will cause the model to climb during a turn (and don't use too little as the model will descend during a turn).
- When turning from one direction to another, in the case of performing a figure 8 for example, you'll find that increasing throttle/speed quickly when changing the direction of the turn, then decreasing it again after establishing the turn in the new direction, will help reduce the amount of space required to change direction as needed. This will take some practice to get used to so it's best to only change direction if your flying area (especially smaller indoor spaces) allows for it comfortably.
- 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 'Transmitter Details' and 'Understanding the Flight Controls and Trimming' sections 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 amount of throttle/power slightly.
- If the airplane is descending at cruise throttle/power, add up elevator trim and/or increase the amount of 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.

- To land lower the left-hand/throttle stick position to 1/4 or less. At approximately 4 to 6 inches above the ground lower the left-hand/throttle stick 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 stick completely if the prop ever 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.

Hints and Tips

Lower Capacity/Lighter Weight Battery for Reduced Flying Speed

You can use a lower capacity and lighter weight battery, including the Ares 30mAh 1-Cell/1S 3.7V 10C LiPo Battery (AZSB301S10UM; sold separately) or similar, to reduce the overall weight and flying speed of the Tiger Moth 75. This is helpful when flying in smaller indoor spaces, however, the lighter weight of the battery will result in a less nose heavy CG and the lower capacity will mean reduced flight durations (relative to the 'stock' 50mAh battery).

You can also remove the landing gear from the airplane to further reduce weight. However, we do not typically recommend this as attempting to land without the landing gear installed can result in damage to the battery and/or airframe.

Wing Struts

In order to maintain the correct incidence and other angles for the wings it's critical that the two 'shorter' wing struts are installed near the leading edges of the wings and that the two 'longer' struts are installed near the trailing edges.

Also, ensure the wing struts are rotated so they're parallel to the forward flight path of the airplane in order to reduce drag. In some cases the struts can rotate out of position during handling or impacts so we recommend checking their position before each flying session and after any crashes or hard landings.

Spinner

The rubber spinner protects objects from the tip of the propeller shaft in the unfortunate event of contact and also protects the propeller, shaft, gearbox and airframe by absorbing impacts. If the spinner ever comes loose, or when replacing the propeller with a new one, be sure to ALWAYS re-install the spinner before the next flight. Most glues will not work well for securing the spinner so we suggest using silicone, shoe goo or any other suitable adhesive to attach the spinner to the sides of the propeller hub. Also, be sure the spinner is aligned properly before the adhesive sets/dries for smooth, vibration free performance.

Repairs

The major airframe parts of the Tiger Moth 75 are molded from lightweight and durable EPS foam. Most damage can be repaired using transparent tape and/or 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 be Foam-Safe and compatible with your chosen CA glue (some incompatible accelerators will damage the foam!).

And in the unfortunate event that any part cannot be repaired, the unique airframe design of the Tiger Moth 75 assembles with magnets and interlocking parts to make replacing parts quick and easy without the use of glue or tape. A full-line of replacement parts is available separately and please contact or visit your local HobbyTown USA® store for more information and to purchase replacement parts. You can also order parts online at www.HobbyTown.com and find more information on our web site at www.Ares-RC.com.

Replacement Parts List

Item Number	Description
AZSB501S10UM	50mAh 1-Cell/1S 3.7V 10C LiPo Battery, Ultra-Micro Connector
AZS1107	Replacement Rotary Servo Mechanics: Trainer 100, Tiger Moth 75
AZS1157	Replacement Magnetic Actuator: Stick 75, Tiger Moth 75
AZS1158AMD2	M3LPA-100C Micro 3-Channel LP Airplane Transmitter w/100mA Charger, Mode 2: Stick 75, Tiger Moth 75
AZS1306	3-Channel, 3-in-1 Control Unit (for Magnetic Actuator); Rx/Sx/ESC: Tiger Moth 75
AZS1309	Motor w/Pinion Gear: Tiger Moth 75
AZS1311	Gearbox w/Shaft: Tiger Moth 75
AZS1312	Propeller Shaft w/Gear: Tiger Moth 75
AZS1313	Wing Set w/Decals: Tiger Moth 75
AZS1314	Tail Set w/Decals: Tiger Moth 75
AZS1315	Fuselage w/Decals: Tiger Moth 75
AZS1316	Main Landing Gear Set: Tiger Moth 75
AZS1317	Elevator Pushrod: Tiger Moth 75
AZS1318	Wing Strut Set: Tiger Moth 75

Warranty, Support and Service

30-Day Limited Warranty Term Period:

We warrant 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

Notes

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