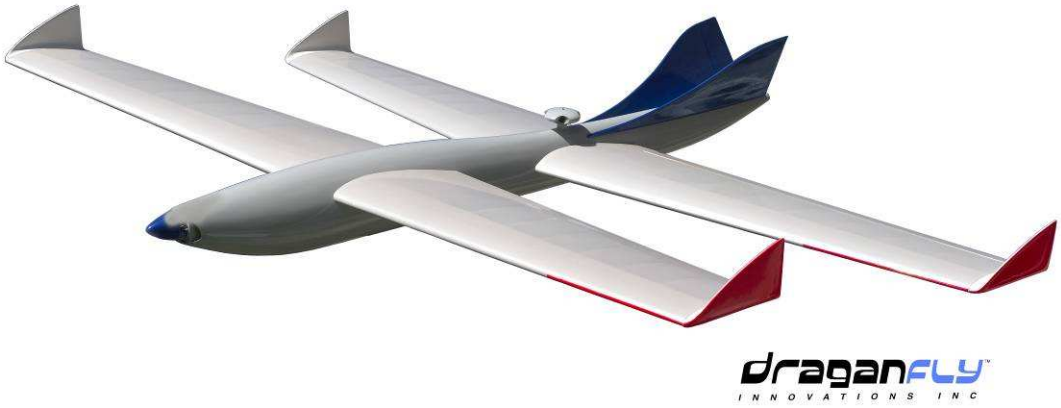
Draganfly Tango

User's Guide



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Warning

The Draganfly Tango aircraft is not a toy. This is a precision machine that is vulnerable to misuse and can prove to be dangerous if not properly maintained or used in an inappropriate manor.

Throughout the manual look for this symbol, this will be used to remind you about safe operating procedures.

Even if assembled and adjusted properly the Draganfly Tango will not hold a constant heading or orientation without input and corrections from the operator and will not automatically recover from an unwanted attitude without intervention. Please completely read and understand all instructional information before attempting to fly the Tango.

To provide optimal performance and flight time, your Tango is powered by a Lithium Polymer battery. The same properties that make these batteries extremely powerful and lightweight also make them dangerous if handled incorrectly. **Please read and understand all information pertaining to the battery and charging system before attempting to use**.

If misused this aircraft is capable of causing serious bodily harm to the operator and spectators as well as property damage. Any and all damage or injury occurring due to the misuse of this product is solely the operators' responsibility.

Warning, this product contains chemicals which are known by the state of California to cause cancer, birth defects and/or other reproductive harm. Many common materials such as metals, plastics, glues, lubricants and coating contain chemicals in varying amounts and concentrations which will cause harm if introduced into the human body. For further information on toxic or dangerous chemicals please refer to California's health and safety codes sections 25249.5-13

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Contacting Draganfly Innovations

If you can't find the information you need in this manual, please contact Draganfly Innovations technical support for assistance.

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1 Tango Basics

About the Tango

The Draganfly Tango is a miniature unmanned aerial vehicle capable of shooting high resolution video and photographs over large areas. The airplane is flown by radio control and flight is assisted by a series of thermal sensors to keep the plane level. The large payload bay of the Tango can support many different types of cameras and sensors to gather information from the survey area.

Tango Specifications

Length: 48 inches (120 cm)
Wingspan: 60 inches (150 cm)
Weight: 5.5 lbs (2.3 kg)
Payload: 3.5lbs (1.5 kg)
Motor: 500 Watt brushless DC electric motor
Battery: Multiple expandable high capacity lithium polymer
Flight time: 50 minutes using one battery
Altitude: 0 to 2400 feet (731 m)
Stall Speed: 15 mph (24 km/h)
Cruising speed: 25 mph (40 km/h
Maximum speed: 60 mph (100 km/h)
Control Surfaces: Rudder, Elevator, Aileron
Control Systems: 72 MHz radio control system

Tango Components:

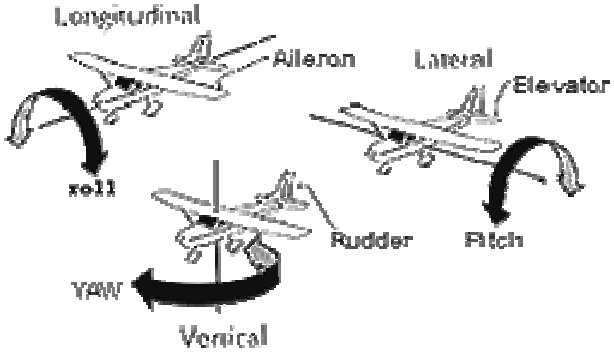
- Fully assembled Tango airframe
  - 4 wing panel
  - Fuselage
  - 4 wing tips
  - 2 vertical tail fins
- Bungee launch cable, pedal and rails
- Pentax A10 8 mega pixel still camera with mount
- Wireless video camera
- Two flight batteries (3 cell 8000mah)
- Two camera receiver batteries (3 cell 1320mah)
- Battery charger, power supply and balancer
- Wires video receiver with antennas

Required & Suggested Equipment

- Utility/hobby knife
- Philips screw driver (# 1)
- Rubberized tape (3M Blenderm)
- Allen Key or Ball Driver (2 mm and 3/32)
- Crescent wrench
- Spare propellers (13 x 6.5E APC)
- Aircraft flight stand.

Tango Familiarization

Despite its unique looks and design the Tango still uses the same flight principles as a conventional aircraft and will fly much the same. All airplanes move on three separate axes that are indicated by the center of gravity.
The longitudinal axis runs lengthwise from the nose to tail; this is the axis that the airplane rolls left and right around.
The lateral axis stretches between the wing tips and is the pivot that the plane pitches up and down on.
The vertical axis runs vertically through the center of the plane, the plane yaws (spins) left and right around this axis.



As with most conventional aircraft, the Tango has control surfaces to regulate the movement on each of the axis.

Rudder
The rudder is located on the tail of the aircraft and controls the yaw, or spinning movement of the airplane around the vertical axis. This is used to keep the front of the plane pointed in the right direction. When the rudder is moved to the right the nose of the Tango will move to the right.

Elevons

Most airplanes with a wing configuration similar to the Tango or a delta wing use elevons which are a combination of elevator and ailerons on the same control surface. The function of elevons is to pitch the aircraft along the lateral axis and roll along the longitudinal axis. These control surfaces are located on the trailing edge of the wing and are the primary controls used for maneuvering the Tango. When these control surfaced pitch upwards the Tango will climb and when the left surface pitches up and the right surface pitches down the Tango will roll to the left.

Power Switch

This is simple push/pull switch, when the switch is pressed in it is on, when pulled out it is off. All of the flight systems including the radio, co-pilot and video camera system are powered through this switch. It is important that you do not have this switch in the on position unless the radio transmitter is also turned on.

Calibration Button

This button is used to calibrate the co-pilot system, refer to the section of the manual titled *Flying with the co-pilot*.

2 Safety and Operational Guidelines

Read this section carefully, it contains information and safety procedures that **must** be followed to prevent possible injury and damage. It also details site requirement and conditions that are needed to fly the Tango.

Safety Precautions and Operational Guidelines

- Always wear eye protection when operating the Tango and bungee launcher
- Do not fly over or close to crowds
- Do not fly near high power lines, electrical substations, high structures or communications facilities
- Do not fly on rainy or windy days or at night
- Never leave the Tango unattended with the battery connected. Always disconnect the battery when not flying
- Always turn on the transmitter before connecting the battery to the Tango, failure to do this may cause the Tango to power up causing injury and damage.
- Avoid standing in line with or crossing over the bungee cable when it is stretched
- Do not advance the throttle while the Tango is sitting on the launch rails. Do not provide throttle until the bungee cable has released from the aircraft.
- Do not operate the Tango if there is damage to the propeller, wings or any part of the airframe.
- Do not operate the Tango at night or late evening when lighting conditions are poor
- Follow battery charging procedures, failure to do so may result in fire.

Flying Site Requirements

Before operating the Tango be sure that your flying site fulfills the following requirements.

Location

Avoid flying in populated areas or where other air traffic is present. Do not fly within:

- 2 km of an airport
- 5 km of a city/town
- 3 km of a radio control flying site

You should also avoid flying near sources of electrical interference such as high power lines, and substations. For takeoff and landing it is good to have and area of 100 by 1000 to 1500 feet, this site should be relatively level. You should avoid landing in areas with clods of soil and fields with swaths, as this can damage the aircraft.

Light
Because the Tango can get difficult to see in poor/dim lighting you should schedule your flights so they are at least one hour after sunrise and more than an hour before sunset. Low light conditions such as overcast skies will also impact the quality of your video and pictures.

Weather
Although the Tango is a stable aircraft you should not fly in wind speeds that exceed 30 km/h as it will become difficult to fly and your pictures quality will decrease. You should avoid flying in rainy or foggy conditions as the moisture can damage the Tango's electrical components and your visibility will be greatly reduced.

3 Assembly

The design of the Tango not only makes is easy to transport but also easy and fast to assemble with minimal tools. This section of the manual will describe how to assemble the Tango airframe and setup and install the camera system and batteries

Assembling the Tango

Installation of wings

The Tango has four wing panels that mount onto the fuselage using carbon fiber tubes. The bottom of the left wing panels will have orange tips. The rear wings are the ones with the control surface on them.

1. Slide the color coded carbon fiber rods into the mounting tube in the fuselage, the longer of the red tubes should be placed closest to the nose of the aircraft.
2. The wing panels simply slide onto the rods, when installing the rear wings be sure to securely plug in the connectors on the wing and the side of the fuselage.
3. With the wings in place apply tape to the seam between the wing and fuselage, this should be done on both the top and bottom.

Installation of wing tips

Like the wing panels, the left wing tips will be orange and the right ones will be white. The wing tips are held on by magnets, so if you hook a wing tip on landing it will not cause damage. It is not necessary to use tape to secure the wing tips.

Installation of the tail

The tail of the Tango comprises of two vertical stabilizers which press into the mounting holes in the fuselage. The vertical stabilizer with the rudder is located on the right side of the aircraft. Once in place apply a strip of tape along the seam between the tail and fuselage.

When assembling the Tango check for cracks and other visual damage to the fuselage, wings and tail that may compromise the Tangos structure. Do not fly the Tango until any damages have been properly repaired.

Camera setup and installation

The optional camera system for the Tango comes with both a digital still camera and a wireless video camera which are mounted inside the aircraft pointing down. Before using the digital still camera there are a few setting you will have to adjust the setting should be as follows:

- Timeout: Off
- Sensitivity: 200
- Drive mode: 0 sec remote control
- Focus mode: infinity
- Flash: off
- Recorded pixels: 8M
- Quality level: highest
- Sport Mode

To install the camera into the mount you will have to first turn the camera on and turn off the display screen, this is done by pressing the "OK" button repeatedly until the screen is blank. The purpose of this is to extend the battery life.

Installation

1 To remove the top of the camera mount take out the 4 pins and pull off the top cover. Installed the camera so that the "DC" and "AV" jacks are facing the side of the mount without foam.

2 The camera mount is housed near the back of the payload bay in the fuselage, it is held in with four rare earth magnets. Place the mount in the fuselage, with the lens and wireless camera facing the front of the aircraft.

3 Locate the black, red and white cable labeled "camera trigger" and connect it to connector on the camera mount. Ensure that the yellow wire on the camera mount is in line with the white wire on the "camera trigger"

4 The wireless camera needs to be connected to the video transmitter located on the aircrafts hatch. Run the cable from the wireless camera that is labeled "camera TX" through the battery bay and connected it to the circuit board that is labeled "camera TX". You will also have to connect the cable labeled "TX PWR" to the plug on the circuit board labeled "TX PWR"; this cable is located at the nose of the aircraft.

Your camera system is now setup and ready for flight. The wireless video camera will begin to shoot and transmit video as soon as you turn on the aircraft. To take a picture with the still camera activate the momentary switch "F" located on the top left of your hand held radio transmitter. Take a few test pictures on the ground before flying and you should hear a tone from the camera when the image is taken.

Battery Installation

The lithium polymer battery included in your Tango kit for the flight battery is held in with Velcro and Velcro straps. Slide the battery into the battery bay with the Velcro facing down and the battery connector closest to the front of the plane. Secure the battery in place using the Velcro straps in the battery bay. To provide power to the Tango connect the battery to the cable labeled "main batt."

Once the battery and camera equipment is in place the hatch can be mounted, this is held Place with two bolts, one at the front and one at the back. We also recommend that you Apply tape to the hatch to prevent dirt and grass from getting inside the Tango.

Before connecting the main battery always ensure that the power switch is in the off position and the radio transmitter is turned on. Also ensure that the propeller arc is clear as the motor may unexpectedly spin when the battery is connected.

4 Battery Care and Charging

Your Draganfly Tango comes with a 3 cell 11.1 volt 8000mAh high capacity lithium polymer battery to provide power to the motor and onboard flight systems, and a 3 cell 1320mah lithium polymer for the video receiver. Due to the large amount of power available in this battery it will require special charging procedures and care. Fortunately, the charging system provided will make charging fast, safe and easy. To ensure your batteries are safely charged and maintained please use these following steps.

Battery Safety Precautions

- Always be sure that the battery, charger, balancer and power supply are on a non flammable surface with no flammable objects near by
- Never leave batteries unattended during charging
- If the battery becomes hot to the touch during charging immediately discontinue the charge and disconnect the battery

Battery Charging System

There are three components to the lithium battery charging system, an AC power supply, a Thunder Power 1010C charger and a Thunder Power 210 Balancer. You can power your charger with two different methods, either the included AC power supply or a 12 volt car battery. For charging the battery in the Futaba radio transmitter your kit includes a 110 volt AC wall charger.

Lithium Polymer Charging Procedures

1. Connect the 1010C charger to a power supply, when using the AC power supply Connect it to any 110 volt outlet and connect the charger using the banana plugs. To turn on the charger move the switch on the power supply to the “on” position. If you are using a 12 volt car battery simply connect the charger to the positive and negative terminals using the provided alligator clips, the charger will turn on as soon as it is connected to the battery.
2. Connect the blue and white data cable to the “data” plug on the 1010C charger and the 210 balancer. This will allow the balancer and charger to communicate during charging. The 210 balancer will ensure that the battery is properly charged and provides optimal performance and long life, do not charge without using the

balancer.

3. Connect the Tango battery to the 1010C charger using the supplied charging leads. This battery also needs to be connect to the 210 balancer, connect the 4 wire connector on the battery to the plug on the balancer that is labeled “Bank 1 (Group A 2-3s)”, this will be located beside the “data” plug.
4. The 1010C charger has several different features, however you only want to use the charge feature. To select the charge function repeatedly press the “mod” button until “lipoly charge” is displayed on the screen, there will also be the text “(sel)” flashing on the screen.
5. Now we have to select what size of battery we are charging. Press the red “ent” button once and you will see a flashing number between 1 and 10 with the suffix “cell/s”. This lets the charger know how many cells are in the battery so it knows what voltage to charge at. To charge either the Tango flight battery or the video receiver battery this will have to set to “3 cell/s”. Repeatedly press the “dec” or “inc” button until the number 3 appears the press the red “ent” button.
6. The now should be a flashing number between 0.25 and 10, it will have the prefix “C=”. This is to determine the current, or how fast the battery is charged. When charging the Tango flight battery this should be set at “10.0” and when charging the video receiver battery it should be “2.6”. To adjust the current repeatedly press either the “dec” or “inc” button.
7. The charger is now setup, to start charging, press and hold the red “ent” button for 2 to 3 seconds.

To charge a fully discharged battery it will take about 30 to 50 minutes, once the battery is charged the 1010C charger will flash "end", it will also display the battery voltage and amperage put back into the battery.

Lithium Battery Maintenance

To ensure a high cycle life and optimum performance from your lithium battery you should keep a log of your flight times and the capacity put back into the battery using the battery log at the back of this manual. For example if you fly the Tango for 35 minutes and after you charge the battery it shows that 5745mAh has been put back into battery you are not near the maximum flight time for the battery pack. The battery manufacture recommends only using 85% of the battery packs amperage so on the 8000mAh battery provided with the Tango can have 6800mAh used without causing damage. If your 35 minute flight only used 5745mah you may want to fly for 40 or 45 minutes and record the amperage put back into the battery. Slowly increase the length of your flights until the amount put back into the battery nears 6800mah and this will be your target flight time, you should not exceed this time significantly or you may inadvertently damage the battery pack. Typically you should expect the Tango to fly at for about 50 to 60 minutes using the 3 cell 8000mah battery.

Transmitter Battery Charging Procedures

The Futaba 9 CAP transmitter that comes with your Tango aircraft is equipped with a 900mah NiCad battery which charges using a simple 110 volt wall charger. The supplied charger, which will say “Futaba” on it, simply connects to any 110 volt wall outlet and the round charging jack on the side of e transmitter. When connected properly a red light labeled “TX” will illuminate. Charging this battery will take between 12 and 16 hours. Because NiCad batteries can build up a memory it is a good idea to only charge it when the battery voltage gets below 9.6 volts. On a fully charge the transmitter battery should last for about 2 hours, so if you plan on doing more than 1.5 hours of flying in one day we recommend purchasing a second battery for use in the transmitter.

5 Co-Pilot

Flying with the Co-Pilot

If your Tango is equipped with the optional Co-Pilot system you should take some time to review the following procedures and guidelines. The FMA Co-Pilot is a self-leveling system which is greatly beneficial for novice pilots and for shooting aerial video and photographs. How does it work? The Co-Pilot is equipped with four infrared thermal sensors and a micro computer that can "see" the temperature difference between the sky and the ground, the ground is most often warmer that the sky. With this information the Co-Pilot knows where the ground is and is able to keep the Tango in level flight by making sure only the bottom of the plane is pointed down. On your Tango the co-pilot has been set up to have adjustable sensitivity so you can adjust how hard the copilot tries to keep the plane level. If you are beginner to radio control you will want to have this set fairly high, alternatively if you are comfortable with radio control flight and simply want an aid to keep your plane level for photography you should turn the sensitivity down.

Co-Pilot Calibration

Before flying with the Co-Pilot you will have to calibrate the sensors, this will need to be done before every day of flying and if the weather changes significantly. Please follow the steps below to ensure the Co-Pilot is calibrated and functioning properly.

1 Turn on the transmitter and Tango, ensure that the throttle is at the lowest possible position.

2 Hold the Tango with the nose straight down, preferably somewhere where the ground is similar to the rest of your flying sight. This should be at least 100 feet away from buildings and trees. While standing behind the aircraft so the sensors can not “see” you press and hold the calibration button for at least 2 seconds.

3 After releasing the calibration button the control surfaces will cycle a number of times (one cycle is a complete back and forth motion). The number of cycles will tell you how accurate the Co-pilot will function.

3 to 10 cycles: The Co-pilot can clearly distinguish between ground and sky and will provide good stabilization.

2 cycles: The Co-pilot will provide stabilization however it will not be very accurate.

1 cycle: The Co-pilot will not provide stabilization, **DO NOT** fly with the Co-pilot turned on. To turn off the Co-pilot rotate the adjustment dial (VR[C]) all the way counterclockwise.

4 The servos should now be slowly cycling. Set the aircraft level on the ground in a

position that will allow the sensors to “see” the horizon without any obstructions. This is to ensure the sensors are set to a level orientation.

5 Step back from the Tango about 15 feet and hold the right control stick either full full left or full right, the servos will then quickly cycle once and return to center, this indicates that the level orientation has been set.

6 To check that the co-pilot is properly compensating for pitch, set the sensitivity to its maximum setting by rotating the adjustment dial (VR[C]) all the way clockwise. Hold the Tango with the nose pointing down, ensure that the sensors can not “see” you. With the nose pointed down the elevons should be pitched up, slowly decrease the co-pilot sensitivity and the elevons should slowly return to the neutral position.

7 To check that the copilot is properly compensating for roll set the sensitivity to its maximum setting by rotating the adjustment dial (VR[C]) all the way clockwise. Holding the Tango so that the left wing is pointed down, ensure that the sensors can not "see" you. The right elevon should be pitched upwards and the left elevon should be pitched downward, as you decrease the sensitivity the control surfaces should slowly move towards the neutral position.

The calibration is now complete and the co-pilot is ready for flying, even after you turn off the power switch, you will not have to re-calibrate the co-pilot for the rest of day unless the weather significantly changes.

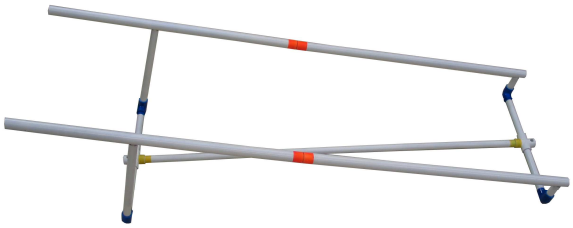
When flying with the Co-Pilot activated avoid flying over large bodies of water and heavily wooded areas, as the difference of terrain may cause the Co-Pilot to operate erratically. If you do have to fly over these areas be sure turn down the Co-Pilot sensitivity.

6 Bungee Launch System

Your Tango package comes with a high tension bungee launching system which can be setup in a relatively small amount of space. Included in this package is a bungee cable, launching rails, and release pedal. This launching system requires a small amount of setup once you are at your flying site please follow the instructions below to ensure the system is safely setup.

Bungee Launcher Setup

Each of the individual pieces of the launching rails are color coded and easily slide together, although it is not necessary we do recommend using tape to secure the joints.



There will be four sections with a blue 90 degree connector on them. these are the upright sections the two long pieces should be at the front of the mount and the short ones at the back. The two orange pieces slide together and mount to the uprights with the longer dowels inserted into the taller uprights.

Orient the launch system pointing into the wind and ensure that there is all least 200 meters of unobstructed space in front of the launcher. The release pedal should be oriented directly behind the launching rails, the front of the pedal is indicated by the hook. Secure both of these components in place by using the supplied metal spikes and hammer. This spike will slide though the hole at the back of the rails and pedal, ensure that the spike is entirely driven into the ground.

While unwrapping the bungee cable you will notice it is attached to a nylon rope which forms a “Y” at the end. The two pieces that form the “Y” have a red plastic housing around them. The longer of these two ropes goes to the release pedal, while the shorter one is connected to the Tango. Connect the loop on the longer red rope to the hook on the launch pedal and begin stretching the bungee cable.

To stretch the bungee attach the fish weigh scale to the loop on the bungee cable and slowly pull the cable parallel with the launch rails, ensure to keep the bungee low to the ground. The desired tension on the bungee is 17 pounds of pressure, once you have reached this point secure the bungee with the remaining spike. We recommend that you have someone assist you with this step as it can be difficult to do on your own.

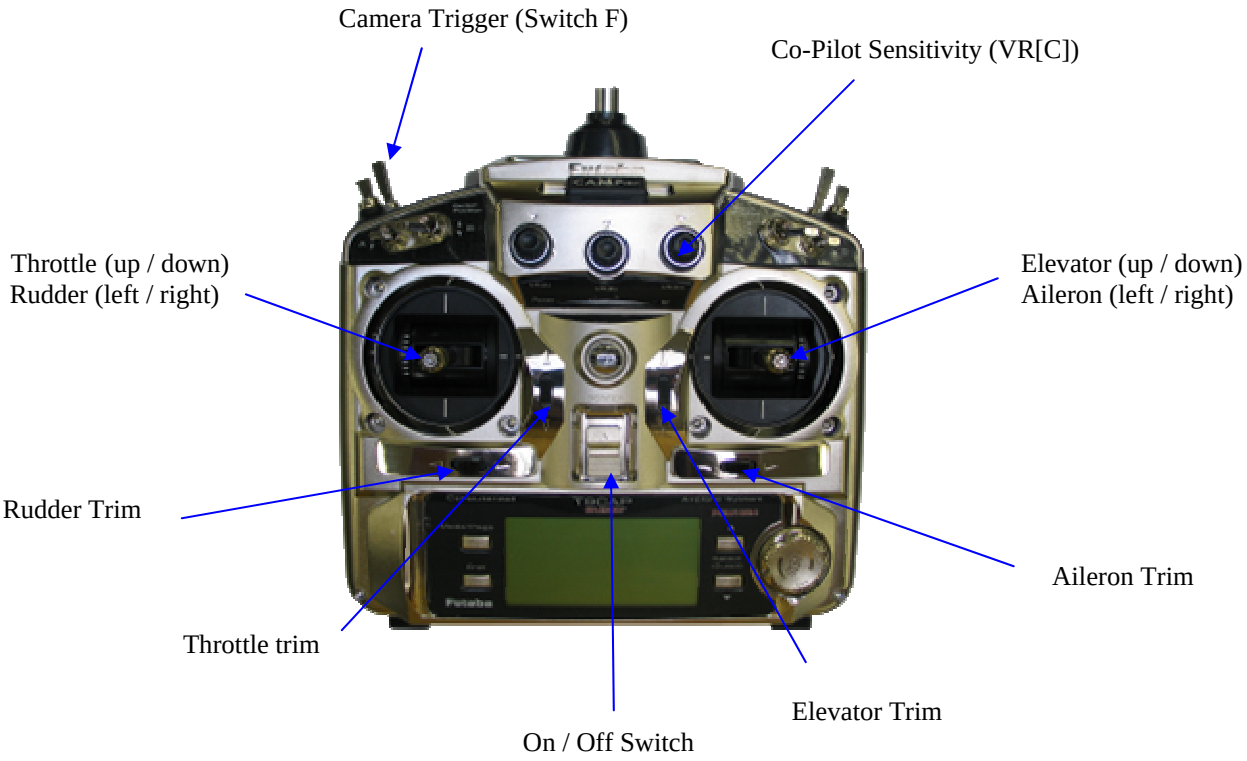
Always wear proper eye protection when stretching the bungee cable. Avoid walking or standing in line with or over top of the stretched bungee cable. If the cable comes loose or snaps it may cause serious injury.

After you have completed your preflight checks set the Tango on the launching rails and connect the bungee to the launching peg on the bottom of the airplane. Slide the Tango backward until there is tension on the rope going to the Tango. To launch the Tango firmly step on the release pedal, and the aircraft will be catapulted into the air. To ensure a steady climb you will need to hold about 1/3 to 1/2 of the available up elevator while launching the aircraft. Also it is very important that you do not advance the throttle until the Tango has released from the bungee. Once you apply the throttle you should keep it at the maximum setting until you have reached a comfortable altitude.

7 Flying the Tango

Flight Controls

Your Tango is controlled from the ground by using a radio transmitter with various functions. Please ensure that you fully understand these functions before flying.



Elevator

The elevator function will pitch the Tango up and down along its lateral axis to make the plane climb or dive. This is activated by moving the right control stick forwards and backwards.

Elevator Trim

The elevator trim is used for fine tuning the elevator control. If the Tango is slowly climbing or diving you would input some trim in the opposite direction until the aircraft does not climb or dive.

Aileron

The aileron function will roll the aircraft left and right along its longitudinal axis, this is used for banking and turning the Tango. To activate this move the right control stick left and right

Aileron Trim

The aileron trim is used for fine tuning the aileron control. If the Tango is slowly rolling or banking left or right you would input trim in the opposite direction until the aircraft is no longer rolling or banking.

Rudder

This function will yaw or spin the aircraft left and right around it vertical axis, this is used to maintain a constant heading. The rudder is activated by moving the left control stick left and right.

Rudder Trim

The rudder trim is used for fine tuning the rudder control. If the Tango is slowly yawing or rotating left or right you would input trim in the opposite direction until the aircraft is no longer yawing or rotating.

Throttle

This is used to control the speed of the aircraft by increasing the rpm and decreasing the rpm of the motor. Throttle is adjusted by moving the left control stick forwards and backwards.

Camera Trigger

This will activate the still camera in your Tango and take a picture, this is used by moving the switch towards you and holding it for 1 second before releasing.

Co-Pilot Sensitivity

Use this to adjust how sensitive the co-pilot is, set this higher for increased corrections and lower for less correction. Rotating the dial clockwise will increase the sensitivity, to turn of the co-pilot rotate the dial fully counterclockwise.

Pre-Flight Checks

Before flying your Tango there are a few simple tests to complete to ensure that the flight systems are functioning properly. Remember that when your turn on your Tango always be sure to turn on the transmitter before the connecting the battery in the Tango and turning it on and that your throttle is in the lowest position.

Airframe Check

Carefully visually inspect the complete airframe to ensure that there are no cracks or signs of damage that may jeopardize the Tango's structure. Also firmly grasp the movable control surfaces and ensure the hinges are in place by pulling on the surface. If there is any damage present on the airframe do not fly until all repairs have been properly completed.

Surface Movement

With the transmitter and Tango turned on check to ensure the control surfaces are moving

in the correct direction.

- Pull back on the elevator control stick and both of the elevons (surfaces on the wings) should move up. Push the elevator stick forward and the elevons should move down. Both of the control surfaces should move at the same time.
- Move the aileron control stick to the right and the right elevon should move up and while the left elevon moves down. If you move the aileron stick to the left the left elevon should move up while the right elevon moves down.
- When you move the rudder control stick to the left the rudder (surface on the tail) will move left and when you move the stick to the right the rudder should also move right.
- Check to ensure the motor is spinning in the correct direction by slowly advancing the throttle stick forward, if the motor is running the correct direction you will feel air blowing backwards from the nose. When applying throttle to the Tango always be sure to securely hold it in place and keep clear from the propeller.

Range Test

A range test is done to ensure that your radio system has sufficient range to operate the aircraft. With both the transmitter and Tango turned on and the transmitter antenna down, walk 60 paces from the Tango and check the control surfaces for movement. The control surfaces should move smoothly and without delay, if there is any twitching or erratic movement do not fly the Tango until the problem has been resolved.

Flight Characteristics

Takeoff

During takeoff your Tango will remain stable with sufficient control to correct for wind gusts. Once the bungee cable has released and you apply throttle you may notice the Tango slightly veer left, this is due to torque from the motor so be prepared to input a small amount of right rudder to correct for this. You should keep the throttle at the maximum setting and hold up elevator until your have reached your desired altitude.

Cruise

Your Tango will cruise at roughly 50% throttle and should require minimal control inputs for straight and level flight. To execute a turn you should not bank/roll the aircraft more than 45 degrees as you will begin to loose altitude and airspeed.

Stall

A stall with the Tango is very gentle, the nose will generally not drop and the aircraft will not spin. In a stall the Tango will loose altitude however it should stay relatively level. When entering a stall condition you will notice the controls will become “mushy” and slow to respond, once in the stall you will loose directional control. To recover from the stall condition simply advance the throttle and/or apply down elevator.

Landing

Because of the Tango’s stable flight it can land at a fairly wide speed range, however it is best to be just above a stall speed when you touch down. On landing approach allow the

Tango to loose altitude with the nose slightly down, you should have you throttle between 10% and 25% to provide forward motion to the landing site. Once you are sure you will make the runway, cut the throttle to 0%. The Tango control response will remain sufficient until landing. You will usually need between 75% and 100% up elevator for the flare.

Battery Log

Battery Cycle #	Flight Time (minutes)	Battery Capacity Used (mAh) [6800 maximum]	Usage Description
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