BVM

DESPERADO

GO FLY GOLD

Length: 124”, Wingspan: 103”

Fuel Capacity: 6 Liters

For 180 to 250 class Turbines

ASSEMBLY AND OPERATING MANUAL

Version 1

June 2024

Vne 200 MPH Limit Thrust to 180 – 250

Equipped with HV Servos and should not be operated below 7.2 volts

CCU Pressure should be 75 PSI MAX

LTMA 1 Aircraft please follow all AMA Requirements

DESPERADO

Assembly & Operation Manual

Table of Contents

INTRODUCTION

Thank you for purchasing the Go Fly Desperado. The Desperado has been flight tested in all kinds of flying conditions and has proven itself to be a solid aircraft. There is only a small amount of work left to complete.

This manual contains instructions for safety, operation, and maintenance. It is essential to read and follow all the instructions and warnings in the manual.

Please read the entire manual to become familiar with the processes and procedures before you begin to assemble your aircraft.

Disclaimer

Bob Violett Models Inc. assumes no liability for the operation and use of these products. The owner and operator of these products should have the necessary experience and exercise common sense. Said owner and operator must have a valid Academy of Model Aeronautics license and a "Turbine Waiver" for operation in the U.S.A. As well as follow all the AMAs LTMA Guidelines. This is a LTMA 1 Aircraft.

This is a High-Performance jet model aircraft. It must be operated with caution and common sense and requires some basic mechanical ability. Failure to operate this product in a safe and responsible manner could result in injury or damage to the product or other property.

Notice: Do not use incompatible components or alter this product in any way outside of the instructions provided by BVM, Inc. The BVM Ultra Desperado has been designed and flight tested around 180-250 class engines. Damage to the aircraft may result from exceeding this thrust limitation.

List of BVM supplied items.

- ☐ Assembly and Operating Manual Package
- ☐ Flush Mount Vent Fitting (#PS-SP-0301)
- ☐ Central Controller Instructions

Recommended Accessories

You may have some of these products in your shop, but if not, refer to this list.

- ☐ 180 to 250 Class engine of your choice.
- ☐ BVM Overflow Tank (BVM# 6037)
- ☐ 20 Channel Power Safe Receiver
- ☐ (2) 7.4v Batteries 50000 mAh RX
- ☐ Safety Wire (BVM# 3030)
- ☐ Gyro System of your choice.

BVM Accessories Used in Demo Model

You may have some of these products in your shop, but if not, refer to this list.

- ☐ 220 Class turbine
- ☐ BVM Overflow Tank (BVM# 6037)
- ☐ Spektrum 20 Channel Power Safe Receiver (SPMAR20410TS)
- ☐ (2) 7.4v Batteries Pulse 5000 mAh RX (V-PLURX20-50002)
- ☐ Synapse AS3X Gyro

Required Tools

A combination of Metric and SAE hex socket and drivers along with a small standard and Phillips head drivers will be necessary.

- ☐ 9/64” Long Ball Driver
  2 MM Allen Driver
  2.5 MM Allen Driver

List of Adhesives/Lubricants needed.
Available at BVMJets.com

- ☐ Super O-Lube BVM #5779
- ☐ Axle Super Lube BVM #5784
- ☐ Dry Lube BVM #1947
- ☐ Pacer Z-42 # PT42

UNPACKING

Carefully remove items from the box. Open each package and inspect for shipping damage. After reading this entire manual, get familiar with the major kit components.

Note: Damaged parts must be reported to BVM within 7 days of receiving your kit. Become familiar with the work completed at the factory. It is important that you inspect and approve this work now.

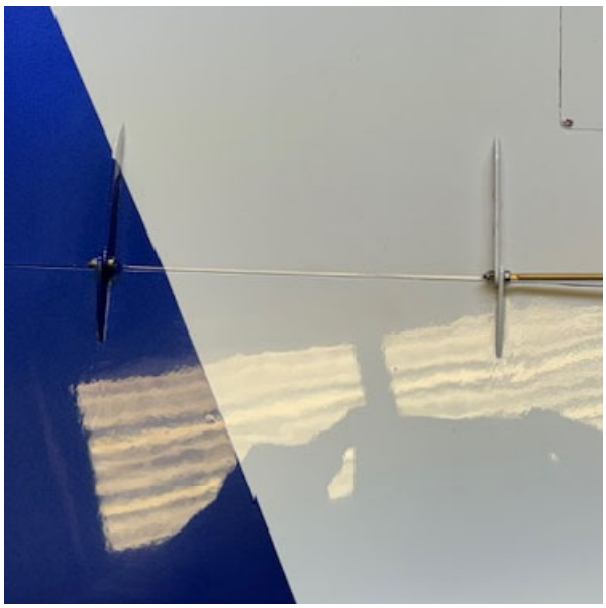
Wing preparation

Installing the Flap Horns and Flaps

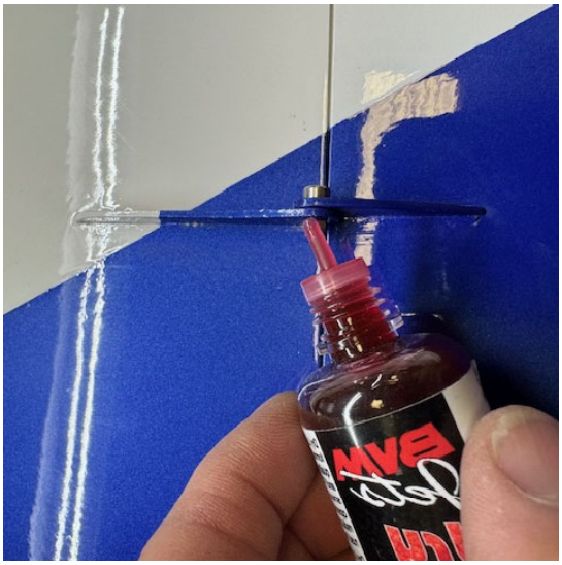
- There are 2 wood style screws that hold the flap horns in place. A 2mm Driver will be used for this step.

A small drop of Medium or Thin CA on the threads before tightening are recommended.

The Flaps are held to the wing with 4 special Shoulder bolts and 4 lock nuts. A 2mm Driver and a wrench will be used. You should be able to tighten them completely without binding the surface. It also doesn't matter which way the bolts go through the hinge.



BVM applied a small drop of Dry Lube between the hinge surfaces.



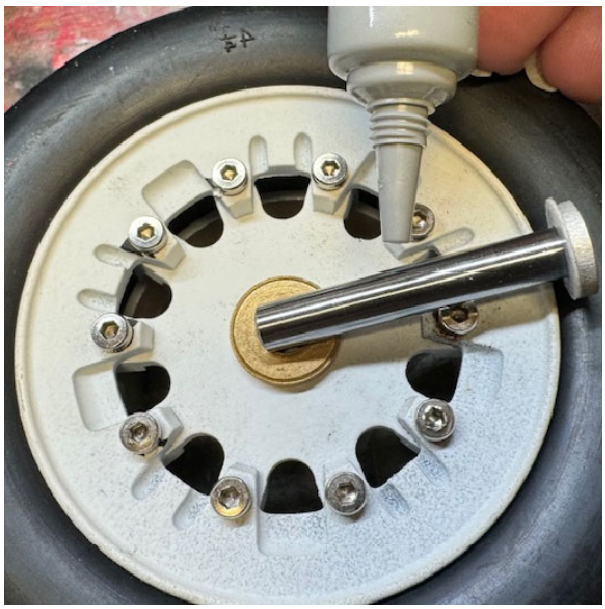
Wheels and Brakes

Remove the wheel and Brake assembly using a 2.5mm driver. Once this is loosened you can pull the axle and wheel off. This will give you access to the brake hub and axle for the next steps.

Remove the O-ring from the hub and apply. Super-O-Lube. This will help keep braking smooth. (BVM # 5779)

A thin film is all you need. Make sure to cover the O-ring completely. Then re-install it into the Brake Hub.

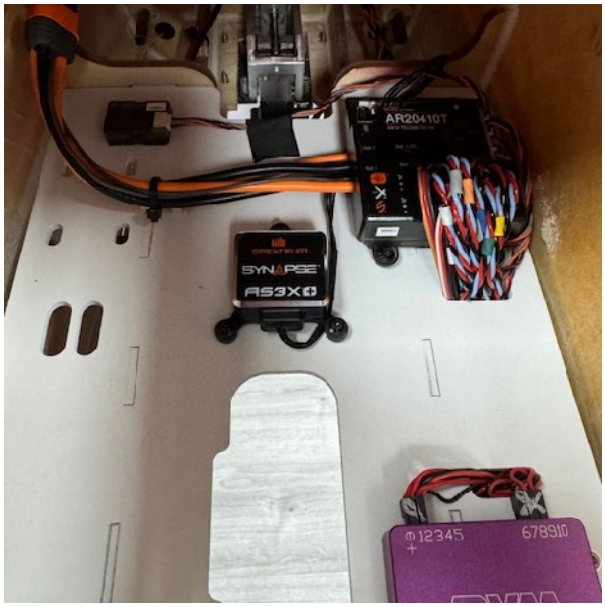
NOTE: Do Not use anything that is metal to help remove the O-ring. Any scratches on the inside of the Brake Hub will cause a leak. BVM uses a sharpened wood stick to lift the O-Ring out.



Apply Super Lube to the Wheel Axles. (BVM # 5784)
This should be done about every 50 flights. You may need to do this more often if flying in dirty conditions.

EQUIPMENT BOARD LAYOUT

This is the standard layout we use. The Spektrum 20ch RX and Synapse Gyro are mounted to the front of the tray. The Spektrum setup is very straight forward and very reliable.

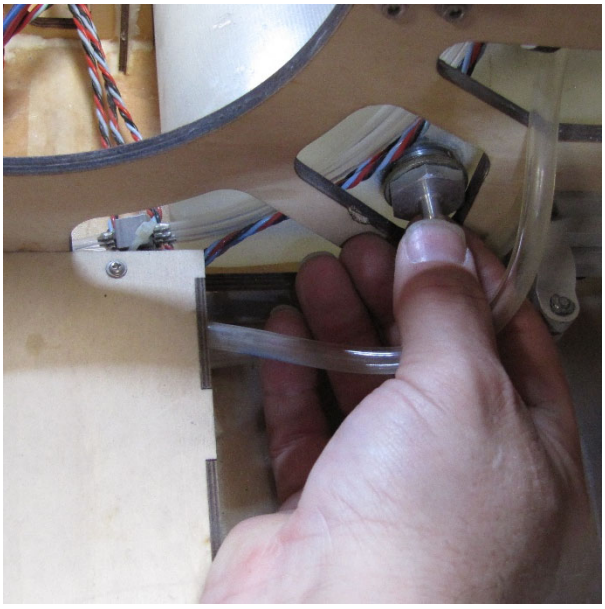


Note BVM decided to paint the trays in our Desperado.

Note BVM Does use the provided UAT. The UAT must be held vertically during the run up to purge properly.

The Aft tray has plenty of room for turbine related components. Here you can see our GSU, Fuel Pump and Fuel Shut Off valve mounted in position. BVM ran all our Turbine wires and fuel lines under the tray.

Fuel Tank Check



You can easily access the stoppers for the fuel tanks through the former. Remove the stopper and safety wire the internal components.

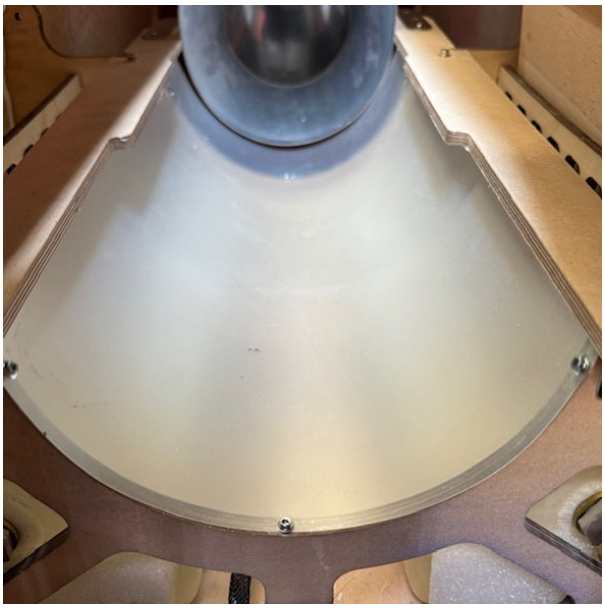
Apply safety wire to tank Stopper connection as well as the Clunk connection. Once this is done you can re-assemble the tanks.

Heat Shield Mounting

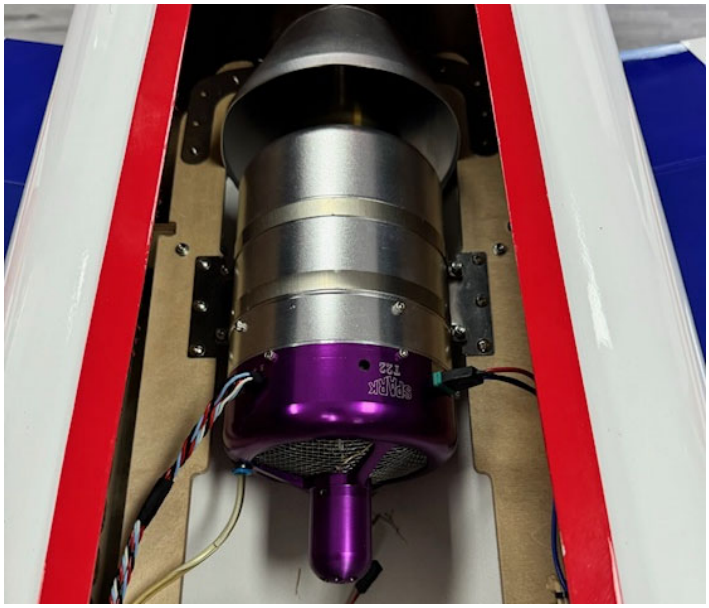
Install the supplied heat shield below the Turbine. You will want to apply 3 coats of BVM Heat Shield for protection. The shield is only there as a barrier between your Turbine and your Tanks.

Let the Heat shield dry for a few hours before re installing.

The heat shield is held with 3 screws in the front and 3 in the back. Once this is done you can move on to mounting your turbine.



Turbine Mounting



Mount your turbine according to your manufacture. BVM uses a standard tailpipe spacing of ¾ to 1 inch from the start of the tailpipe.

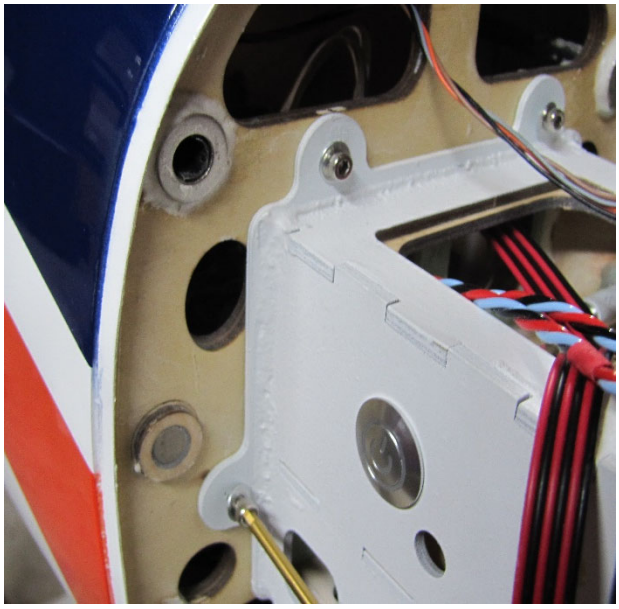
The easy way to mount your turbine is to remove the Bell Mouth and place a piece of wood of the dimensions you want between the Tail cone and the Tail pipe for spacing, mark your holes Then put your Bell Mouth back on.

Center the turbine in the pipe.

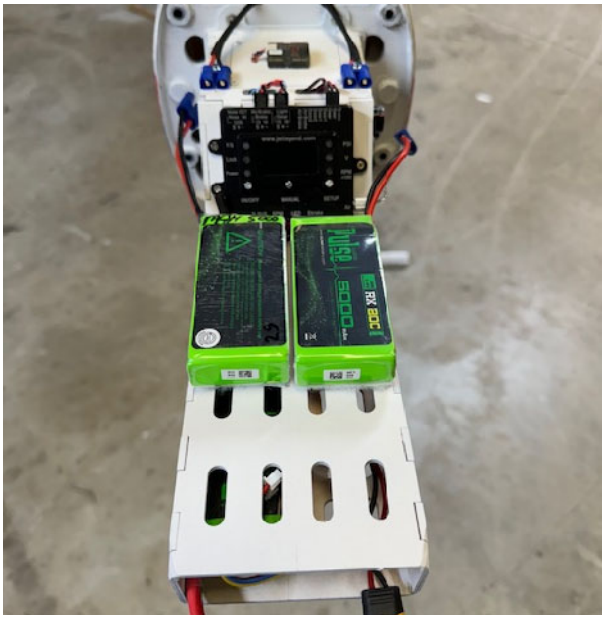
Mounting the CCU/Battery Box

Start by connecting the hoses to the joiner block. These can be tucked into the front area through the top hatch.

The Box is held to the nose with 3mm bolts. A small drop of Loctite on these would be a good idea.



Mount RX and Turbine Batteries



BVM's demo Desperado has all the batteries mounted to the box as well as one of the Satellite Antennas. The Ecu Battery mounts inside the opening of the box.

Note: The RX batteries can't go too far forward as they will interfere with the nose cone closing properly. Also, the corners of the box may need to be rounded a slight amount to clear.

Ecu battery is held in with a Velcro tab over the front of the battery. We used a block of balsa as a stop inside the box to keep battery in place.

INSTALLING TAIL SURFACES

Install the Stabs

- ☐ Connect the servo leads and secure with servo clips or tape.
- ☐ Insert the Carbon Rods fully into the receiver brackets.

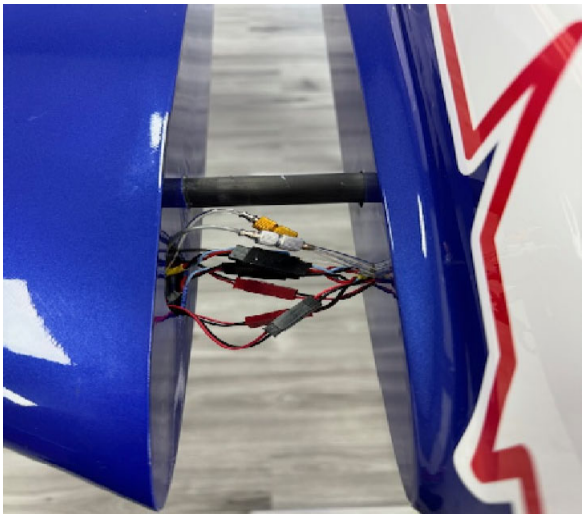
NOTE: Not all pictures will be of the Desperado, but the process is the same.

- ☐ Secure each stab by tightening the bolts with a 9/64 ball wrench.

Install the vertical fin.

- Connect the servo lead and LED lead. Secure with your favorite method
- Insert the Carbon Rods into the receivers.
- Tighten the 2 clamp bolts. One in the front and one in the back.

Installing the Wings



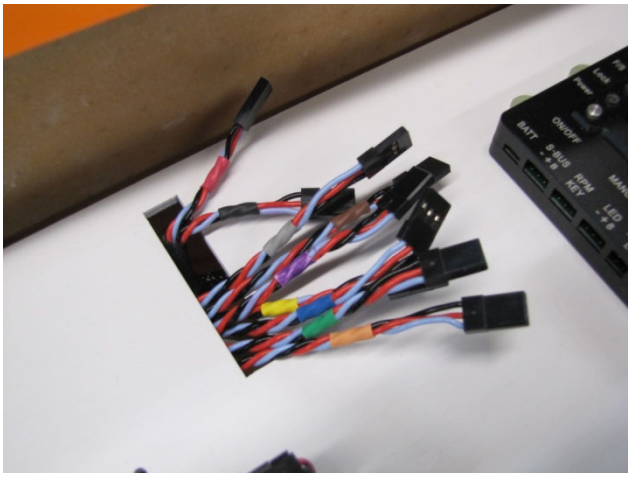
Slide the CF/Aluminum wing tube through the fuselage. Then slide the wings on and make your connections secure. The Airlines are color coded, and the Servo Wires will only plug in one way. Your LED wires are also colored coded.

The front wing mount uses a 9/64 driver.to secure the leading edge.

The rear of the wing uses a Carbon tab and 3 mm counter sunk screw. You will need a 2mm driver for this.

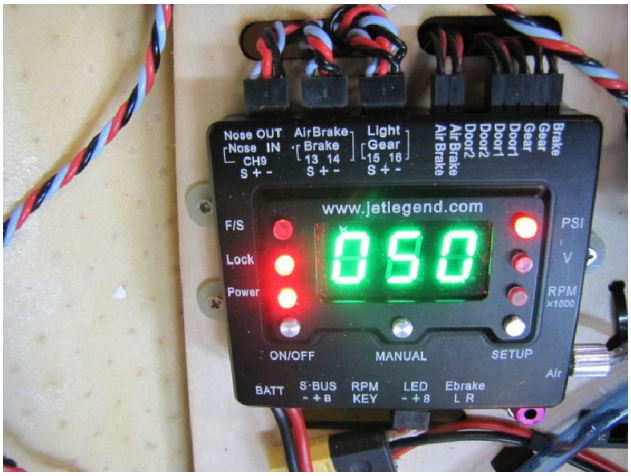
Wiring The Model

Servo Wire Color Codes		
Throttle		NA
Rudder		Blue
Elevator	Left	Green
Elevator	Right	White
Aileron	Left	Orange
Aileron	Right	Yellow
Flap	Left	Brown
Flap	Right	Grey
Brake		Red/White
Gear		Red



Central Control Unit
Follow the instructions in the Central Control Unit Manual that was provided along with this manual.

NOTE: This has been programmed to Failsafe at 35 PSI.



Note The Fill to pressure should be 75 PSI MAX on the display.

Flush Mount Vent and Overflow System

- A flush mounted vent system is used on the fuel system. A magnetic vent plug with red “Remove Before Flight” tag and BVM Overflow/Taxi tank conversion fittings are provided

The vent plug is installed.

Below, the overflow/taxi tank is connected.

Center of Gravity

- The CG is marked on the side of the fuse on the wing root. You can move this location back ½ inch for a more neutral feel. This is the location we use in our demo Desperado. We added 8 ounces to our Demo for a good feel.

Control Surface Deflections and Expo Settings

Note: The BVM Demo plane is set up using the following Expo percentages. Positive values are used on Spektrum and JR radios, Futaba uses negative.

Control	High-Rate Travels		Expo	D/R M	D/R L
Elevator (measured at the Tip)	Up 1.0”	Down 1.0”	10	80%/10	50%/5
Aileron (measured at the Tip)	1.0”	1.0”	10	80%/10	50%/5
Flaps (measured at the Aileron Flap Joint)	Take Off 1.7”	Landing 3.7” can be more			
Rudder (measured at the Bot.)	L&R 1.25” or more		10	80%/10	50%/5

Connecting RX wires

The wires are labeled from the factory. Follow the chart below to connect the servos.

IX 20 Connection Chart						
RX Port	(1)Throttle	(2)Aileron	(3)Elevator	(4)Rudder	(5)Gear	(6)Aux1
Surface	Throttle	Right Ail	Right Elev	Rudder	Left Flap	Left Ail
RX Port	(7)Aux2	(8)Aux3	(9)Aux4	(10)Aux5	(11)Aux6	(12)Aux7
Surface	Right Flap	Gear	Left Elev	Steering	Brakes	Lights
RX Port	(13) X+1	(16) X+4				
	Landing Light	Gyro				

The BVM Demo models are set up on Spektrum IX20 transmitters.

Important!!! Check the directions of all flight controls before each flight.

First Flight Profile

Make the first take off with the gyro “off”. See also BVM article “Gyro Sense”.

Flight Time

The BVM demo model’s transmitter timer is set for 6:30 min. On the first flight, land a couple minutes early to check fuel consumption. Adjust the flight timer accordingly.

Taxi Test/Engine Run Up

A taxi test should include a radio range check with the engine running at various power levels. Check that the wheel brakes are adequate, and the stopping action is without skidding or pulling left or right. Be sure to shake the aircraft and push fore and aft with the engine at half power, this will remove any trapped air bubbles in the fuel system. Check the fuel line to the engine for “no bubbles”.

Takeoff
Begin the takeoff roll by slowly advancing the throttle. Maintain runway center while holding about 1/2 stick up elevator; the Desperado will rotate when it is ready. If there is a cross wind, hold a small amount of aileron into the wind, be prepared with opposite rudder.

Trim
Once in the air, find a medium cruise speed to set the trims. The aircraft should fly straight and level “hands off”. When the landing gear comes down, a few clicks of trim may be needed. This can be mixed in or use flight modes to trim automatically.

Practice Approaches
After trimming your model use the rest of the flight to get familiar with the slow flight of your **Desperado** and practice some approaches and go arounds. It is beneficial to become familiar with the low-speed handling of the aircraft. You will find that the Desperado handles very well and is very predictable.

Landing
The landing is like most jets, “power on” during the approach. The Desperado does not stall easily, it is best to land nose high, touching the main wheels first.

RX Battery Consumption
With fully charged batteries make a couple of flights and charge the batteries again. This will give you a good idea of what you will have for battery consumption.

BVM is synonymous with “Success Jets.” It is very important to us that you are successful with our products. This manual reflects our sincerity. As always, your comments and suggestions on BVM products are appreciated.

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