

## Flight Trimming

Flying model aircraft in the last 20 years has been in the form of “Almost Ready to Fly” or “ARF” models - somewhat a change from the traditional plan or kit built models of yesteryear and most of these models from various manufactures look and fly the part.

Whichever the method of producing the model someone had to design it, test fly it and trim it out so the purchaser had some degree of a chance in getting it to fly as intended.

If Quality Assurance was in place at manufacturing stage and the purchaser used the same radio gear and motor combination as the test model, you would have a good chance of pulling it off.

Life was never to be easy and we all have different ideas of doing things and cutting corners to try and get the same results in life. Making models is not so different and if you have 3 or 4 people make the same model and install the radio gear and motor, there will be some differences along the line of installation and construction.

This tends to upset the cart a little with sometimes dramatic changes in the ability of the model to fly as intended. With wing panels not stuck together correctly or control surfaces not in correct alignment, the chances are mounting that it won't fly as intended.

Most manufactures give a point of Centre of Gravity “C of G” as indicated on their instruction sheet, a set distance from the leading edge of the main wing, so you move the radio gear around to get this point correct and that's it .....WRONG ....

It's a start but there's more much more, what about Lateral Balance? Lateral WHAT !!!!!

Tie a piece of twine (string) strong enough to hold the model's weight, tie one end around the motor's prop shaft and the other end around a pin, nail or screw placed in the centre of the fuselage at the tail end and hold the model up taking it's full weight with twine. It does not matter if the model turns upside down, it's the attitude of the wings we are looking at. Do they balance horizontally? If not, some weight will be required to get the wings to balance.

Add weight in the form of nails, screws, fishing lead, shot, strips of lead off the church roof to the wing which is hanging uppermost, so when the weight is added the wings balance.

Now that we have both balances correct we can now go flying and trim it out.

If you follow some of the trim checks your model will fly as intended, you will fly more safely and enjoy your flying more as the model will fly that much better.

1. Fly straight and level and then take your fingers off the sticks for a short fly pass.  
*Did the model fly straight and level? Adjust flight trims on the radio to get the model to fly straight and level at full power, land and adjust linkages so the Transmitter trims can now be at zero trim.*

2. Fly around in general flying.  
*Did the model act very sensitive to the controls? Land and move the linkage out on the control surfaces or in on the servos to reduce the throw of the control surfaces that act sensitive. Opposite if the model is very sluggish to controls. If the model is porpoising, or very touchy on the elevator, this can also mean the CofG is too far aft*
3. Close the throttle in level flight at a safe height and let the model approach stall speed.  
*Does the model stall with the nose up or without much "up" elevator? This can mean the CofG is too far aft. If the model drops the nose at reasonable airspeed but you still can't hold the nose up with elevator, then the CofG is too far forward. Ideally you should need full "up" elevator to just hold it level as the model stalls, then the nose should drop regardless of elevator position.*
4. Fly straight and level at full throttle and then close throttle as fast as possible.  
*The model should fly on that path for a short distance but if the nose goes up then a few small washers under the front motor mounting screws are required to reduce the motors down thrust angle, if the nose drops the washers are placed at the rear mounting screws. If the model pitches up when rapidly opening the throttle from idle to full power it means the engine requires more down thrust. Note: it is normal for the model to climb as airspeed increases.*
5. Carry out a loop using elevator only.  
*The model should complete the loop and finish where it started and not yaw off to one side. If it yaws to the left on finish add a little right rudder and the opposite if it goes to the right.*

These few trimming tips should help to get more out of that model, but for the ultimate in trimming for the full aerobatic monster it's best to talk to the champs of that particular model.

All the best and happy landings.

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