

Radio Control Flyers Unlimited

Flight Plan

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Current News

We will be having the September club meeting at the club field at 11:00 am on September 13th. We currently have 8 club members that have committed \$2,500 to come up with the remaining \$20,000 for the field refurbishment. We now have \$40,000 to be committed to the field refurbishment. The membership has decided to do the gravel slurry paving. But before committing to a contractor, there are a few questions to be presented to the contractor about performance of this product. This meeting is to decide how we need to change the club bylaws to ensure there is enough revenue to pay back to monies borrowed and to build up the account to other needs. Once these changes are decided on, there will be a 30 day notice to all of the membership concerning these changes. We have also decided the 8 members that have lent the club \$2,500 to be exempt from club dues for 4 years as a way to offset the interest of these loans.

We are going to contact Cal Fire about future fire control at the field. We also have a commitment by the Park to have the field mowed each year during middle spring. With more larger electric models, the risk of a fire have increased in the event of a crash because of the high energy batteries. We also purchased a mower to replace the one stolen. This one is the same size at the old mower except it appears to be in better condition. The mower will be stored off site to prevent it from wandering off. We also plan on repairing the container doors. The hinges need to be repaired and the doors straighten out.

We had our second pylon racing event in August. I attended and was one of the judges at the three

pylon event. These races were pretty interesting to watch. I also found these races to be very organized, and the participants were very friendly. Dan Peterson did a great job of getting the event at the field and organizing it. The planes were small enough to be affordable and with various classes, any pilot with a desire to try it can do so easily.

PILOTS CORNER

RC Airplane World flight school - weight and balance

Getting the weight and balance correct before you fly your plane is **so** important, especially the balance. Every airplane, whether model or real, has a **Centre of Gravity** ('CG' of 'CoG') that is determined in the plane's design stage. This CG is crucial to the airplane's flight characteristics, and getting the plane correctly balanced around the CG is an absolute must for safe and stable flying.

Checking the all-up weight (AUW) of the airplane *isn't* as crucial as the balance, although it's still very important because, generally speaking, all model aircraft need to be kept as light as possible to ensure optimum performance.

If you've bought an ARF or RTF airplane then the weight should more or less come in at what the manufacturer has specified. Building from a kit potentially allows for greater discrepancies in weight, and care must be taken not to build a plane too heavy. Over-enthusiastic use of glue, or 'heavy' glue such as epoxy, and thicker than necessary covering, and paint, can all add unnecessary weight during the build process, and it all adds up!

In the unlikely event that your plane is *seriously*

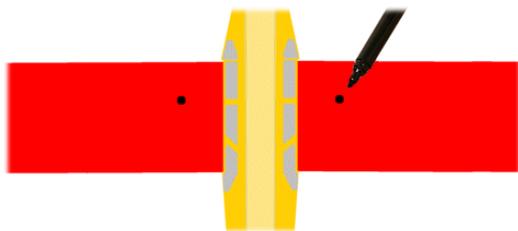
overweight to what it should be, you need to do something about it because the **wing loading** is going to be higher than it should be, and this is going to lessen the flight characteristics. Realistically, your only options when it comes to post-build weight reduction are to use a smaller/lighter battery pack or smaller (*but still compatible and suitable*) servos and receiver, and try and get the weight down that way.

Checking the balance (CG)

This is the important one, and it's easy enough to do.

The first step is to identify the correct Centre of Gravity location, as stated by the manufacturer. This CG position should be in the manual, and will read something like "75mm (3 inches) back from leading edge", for example.

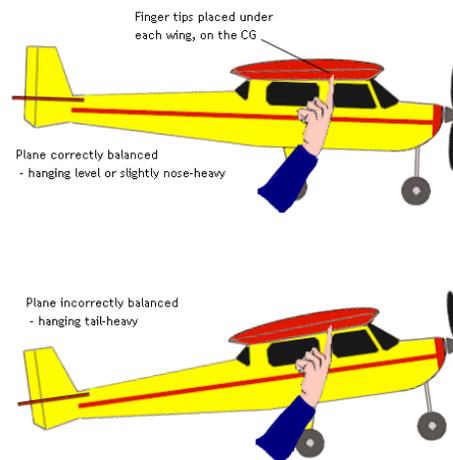
Secondly you need to mark the CG location with a pen on the undersides of the wing. You should mark the CG location close to the fuselage, rather than further out down the wing. One or two inches out from the fuselage sides is fine.



Above: mark the CG location on each wing

Thirdly, and very importantly, you need to get your plane to a 'flight ready' status *i.e.* have it completed and **flight pack installed** in the correct place. Don't worry about connecting anything up at this stage though.

With all this done, slowly lift the plane up with the CG marks on each of your index or middle finger tips....



Above: lifting the plane on its CG to check balance

The picture above gives you an idea of what should happen when you lift the plane; either the plane will hang more or less horizontally or it will be nose down or tail down.

If it hangs level, then the CG is good and you don't need to do anything. If it hangs *slightly* nose down, this isn't a problem either; a little nose-heaviness is rarely a bad thing. If it hangs *very* nose down, or *at all* tail down, then you need to adjust the balance to get it to hang level.

Your first option is to try moving the motor battery pack forwards or backwards, depending on which way your airplane is hanging. This is the best thing to do to adjust the CG, because you're not adding dead weight to the plane in the form of ballast. If you cannot shift the pack because it's too tight a fit in its compartment, then you need to add ballast to either the nose or tail end of the plane. If this is the case, add the weight as far out as you can, this will have the greatest effect with the least amount.

So, if you need to add weight to the front because the plane is tail heavy, look at fixing something to the underside of the nose, as far forward as you can. Or you could even add ballast to the inside of the spinner. If you need to add weight to the tail end of the airplane, because it's nose heavy, then try and add it to the very rear of the fuselage, where both sides come together so to speak. If your plane is foam, you could screw an appropriate size screw into the foam, for example.

Whatever weight you add to the nose or tail, make sure it's very secure! Having the weight fly off dur-

ing a flight will upset the CG and this is going to adversely effect the plane's flight characteristics. Depending on what you've used for ballast, tape or glue usually does the job of holding it in place. But remember that a lot of glue can add even more weight, so always be careful not to use too much! Always recheck your airplane's balance once you've finished adding ballast. It's important to understand that a slightly nose heavy plane will still fly fine. A tail heavy plane, however, is bad news; the plane will be at best very difficult to control, and at worst completely uncontrollable. If your airplane seems tail heavy when it's balancing on your fingertips, do something about it!

Incidentally, this 'finger tip' method is a quick and easy method that works well for balancing high wing airplanes. If you don't trust your fingertips, you can buy a CG balancer such as the [Great Planes CG Machine](#), which is a great tool if you're serious about the hobby. Alternatively you can rig up your own CG balancing tools.

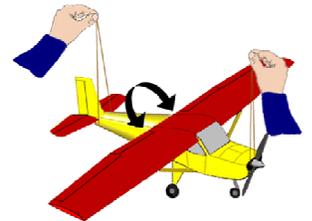
Roll balancing your RC airplane

This is often overlooked and isn't as critical as getting the CG correct, but a plane that has one **side** heavier than the other will want to roll and turn to the heavier side, making your life a bit

harder.

To check your plane's roll balance, simply loop some thread around the propeller shaft, and then some around the rear of the fuselage as close to the tail as you can get it. If the tail end proves awkward, insert a small pin in to the centreline of the rudder trailing edge, and place the thread around that. Lift the airplane up and let it hang freely - see if it wants to roll to one side or another. If it does, then you need to add some weight to the **wingtip** of the lighter (higher) side.

Add only enough weight to make the plane hang level, when viewed from the front. Taping the weights to the wingtip is an easy method, although you might want to take the trouble to set them into the wingtip and cover over them to hide them from view. For foam wings, pushing a small gauge screw, nail or panel pin into the foam is a great way of adding any necessary weight, and is easily hidden with white paint or marker pen.



Use 2 lengths of string around each end of the plane to check the roll balance as shown

Cash Flow Report

| Income | | Expenses | |
|---|----------------|---------------|-----------------|
| Club Revenue (including initiation fees, field assessment fees, Donations, and Events) | \$33.16 | Mower | \$500.00 |
| | | Toilet Rental | \$320.00 |
| Totals | \$33.16 | | \$820.00 |

| | |
|--------------------------|-------------------|
| Last Month's Total | \$2,624.78 |
| Income | \$33.16 |
| Expenses | (\$820.00) |
| Balance | \$1,837.94 |

**The September Club meeting is scheduled for:
Sunday, September 13, 2015 at 11:00 am
at the club flying field.**