FLY-RIGHT RC Balance Jig

Jim Zabel

You may remember that I reviewed the Xicoy CG machine in the July 2024 Newsletter (Found on our website or at this link, July 2024.pdf - Google Drive) Although the Xicoy is a great alternative to other methods of balancing large planes, accurately acquiring its required measurements CAN be a bit of a hassle at times; until now.

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Enter the FLY-RIGHT RC Balance Jig; The perfect companion to the Xicoy CG Machine!

The FLY-RIGHT RC Balance Jig, shown fully assembled here, is a precision system utilizing aluminum extrusions and machine shop quality "Digital Position Readouts," (DROs) riding on precision machined Gantries, to accurately determine all required Xicoy airframe measurements. The fixed, center fore/aft Gantry supports the Xicoy's nose wheel/tailwheel scale and a DRO used to determine distance between axles. The second fore/aft Gantry, seen in the foreground, rides on its own adjustable/sliding extrusion and carries the Laser and it's DRO. This DRO is used for obtaining and/or marking the remaining airframe measurements.

The Gantries are all fitted with four, ball-bearing supported, rubber wheels. These wheels tightly engage corresponding channels in the sides of the aluminum extrusions, making for no-slop operation. In fact, that they feel almost like a force fit when initially installing them onto the extrusions, yet they move almost effortlessly.

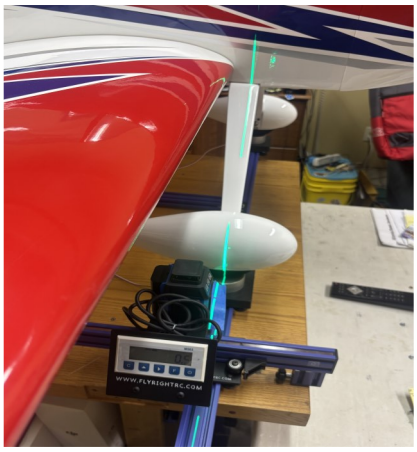
Both DRO's read their positions from calibrated magnetic strips installed in the extrusions and are actually accurate to 1/10th of a millimeter! Admittedly way more precision than is actually needed for our purposes, but let's face it, that just adds to the COOL factor!

Let's look at how I used the jig to balance my new Flex Innovations RV-8.

After placing the Xicoy scales on their respective Gantries, I moved the Center Gantry fully forward, "zeroed" its reading, and then moved it back to the location of the tail wheel. Next, I leveled the plane on the scales, as shown to the right and below. To elevate the tail, I built an adjustable support using telescoping lengths of PVC pipe. This allows the support to be adjusted for use with a variety of large scale planes with conventional gear.

The Center DRO now indicated the distance from the main axle to the tailwheel. That value was entered in the Xicoy as *"Distance Front-Mains."* In this case, 1525mm.

Moving to the Laser Gantry, I aligned the laser line on the main axle, as shown below, and "zeroed" the DRO reading. Sliding the gantry rearward until the laser aligned with the wing leading edge, also pictured below, indicated 30mm. Adding this to the CG location recommended in the manual, "*182mm back from the leading edge of the wing,"* yielded a value of 212mm. This value was entered into the Xicoy unit as *"Distance Mains-CG."*



Similarly, I used the laser to measure the distance from the Mains axle to the location where weight adjustments would be needed, and entered this value into the Xicoy as *"Distance from Mains to Weight Placement."*

The Xicoy system then provided the **current** CG location, total model weight, and weight adjustment advice for achieving the desired CG. It really was just that quick and simple! No ropes, no strings, no squares, no plumb-bobs, no crawling under the plane to make measurements, (and knocking it off of the scales…) and no parallax errors!

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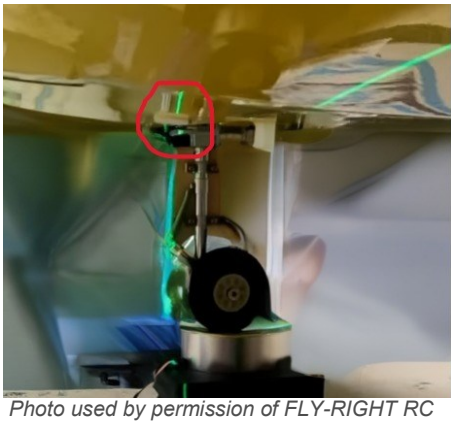

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Note that, in this case, I used the CG measurement method described simply because the RV has a constant-chord wing. I didn't really need to mark the CG on the plane. In the case of a tapered wing, swept wing, or biplane, simply mark the desired CG location on the bottom of the wing or fuselage with something like the white disc seen circled here. The Laser DRO may then be used to directly measure the distance from the Main Axle to that mark. Again, simply enter that value into the Xicoy system as *"Distance Mains-CG."*

Note that this Jig is NOT only for large models. Due to the sensitivity, accuracy, and precision of both the Xicoy Scales, and the FLY-RIGHT RC DROs, the system can be used on virtually ANY size model, large or small, tricycle gear OR tail-dragger.

The FLY-RIGHT RC jig is available in two versions; the full version, reviewed here, with two long center extrusions that assemble together for use with large planes having long fuselages, and the LITE version, with a single center extrusion, for smaller planes and/or jets.

Additionally, the jig is available anodized in Black or Blue and even includes this nice, padded storage case.

Personally, I opted for the Blue version (Just because I thought it looked Cool,) as well as the three-axis laser upgrade, which also includes a USB charging cable and two rechargeable Li-on batteries for the laser. Nice!

In conclusion, I am VERY impressed with this product. It makes balancing large planes easy, quick, precise and painless! It's also pretty cool! I have to admit that it's kind of fun to use too! In short, I LOVE IT !!!

See the Balance Jig, as well as FLY-RIGHT RC's other quality products at: Fly-Right Jig - FLY-RIGHT RC

For further questions or detailed information on the product, contact Ben at Fly-Right RC. You will find him very helpful and pleasant to work with.

Jim