Basics of Aero Model Building

In this article, KiwiFlyer Correspondent Janice Angus continues her aero modelling series with a personal take on model building for beginners.

I'm in a fortunate position in that I don't have to build the models I have the pleasure of flying. My long suffering husband, Pete, is my resident model builder and chief repairer. There are probably not many women who are happy to give up a corner of the lounge as a model construction zone but a warm, comfortable work environment means more construction can be done during the winter months as opposed to in a cold garage or workshop.

For first time builders, the best option is a good quality Almost Ready To Fly (ARF) model. These models come partially built and generally only require gluing together the wings, tail planes, and fitting the servos and electronics.

In the last three or four years many Chinese manufactured model aircraft have become available in the NZ market. Generally, these are great models in that they are reasonably inexpensive to purchase, they fly well and there are a variety of different plane types available.

Depending on your budget and model selection, you might find that your Chinese plane needs a few extra steps to help make things fit together properly or to strengthen parts of the structure to ensure safe and reliable flying. Getting this right is a mixture of common sense and experience and usually only involves a bit of time and extra fiddling about during the build process. The beauty of these budget models is that they are airplanes you can thrash about, push to the limit, crash and bash.

Generally, American or European made models are of a higher quality and this is reflected in the price. In addition there is a strengthened desire not to let your model come to any harm.

No matter what type of model you choose to build the following fundamentals apply:

A Long Ezy kit in the box and a partially completed model in the corner of the lounge.

1) Correct C of G

The instructions will show the precise point where the centre of gravity for the model is (with empty fuel). When balanced on this point the aircraft should sit level. In many cases, increments of grams of weight can make all the difference.

2) Straight and True Construction

It is important to make sure that the wings, ailerons and tail plane are glued into position straight and level in relation to the fuselage and parallel to the respective leading edges. A slight warp or incorrectly seated control surface can cause erratic and challenging flying behavior and ultimately lead to a short lifespan for your aircraft.

3) Onboard Electronics

ARFs normally have a servo tray with cut out slots for the positioning of the servos. The area behind the fire wall can become quite full once the fuel tank, battery and insulation, receiver, leads and servos are in position. Before securing all the components in place, make sure there is no potential for the control push wires to become entangled or obstructed in any manner.

4) Control Surface Throws

The building instructions will state how much movement to set for the aileron, elevator and rudder travel. In most cases, two sets of measurements will be given – smaller movement settings for gentler, less extreme manoeuvres and larger movement settings for aerobatic and more extreme flying manoeuvres. If you are a novice flyer, the smaller movement settings are recommended.

I have only barely scratched the surface with what is involved with putting an ARF model together but hopefully these tips will prove helpful.

Model aircraft retailers are able to provide the kits and building advice so make sure you ask for help if you need it. It is recommended that those new to the hobby join a model aero club as this will give you access to people with many years of aircraft building experience and there is no better resource that those who have "been there, done that".