



Indoor Technical Committee  
May 2008

## Advice Sheet 2

# An 'Experts' advice By John O'Donnell

IS IT CRICKET ?



### JC IN ACTION

The **GC** is a rudimentary design intended as a very basic sports model, following on from the Dart, and with a similar potential of flying for about a minute. As such it has features that hinder (or prevent) attempts to turn it into a real duration model.

Even though the rules for the GC Contest allow extensive modifications, they still require the original wing and tail planforms, and the motor stick and boom lengths. These are crucial,

The tail surfaces are very small, and the moment arm is limited.

The kit (and plan) use a small, but heavy, plastic propeller and fitting to help balance the model. Even so the drawing shows nose weight.

**Experience has shown** that the CG needs to be around 50% for reasonable stability. Recommended measures include mounting the wing 2 to 2.5 inches from the front of the stick, moving the rear hook forward by an inch or so, and using a (comparatively) heavy propeller.

Naturally the tail unit and boom should be as light as practical.

For performance prop and power are crucial - Try around 9" or 10" inch diameter with 15 to 20 inch pitch. Use separate 1/32 inch sheet blades (twisted on a former, not a can) plugged into a tubular hub.

Rubber size will depend on the propeller and model weight.

John O'Donnell remains one of GB's most respected fliers Indoors or Outdoors. His models, designs and expertise have been published around the globe.

In principle, "improving" the design is easy. Merely lighten the structure (and the covering), use cambered airfoils, and fit a bigger balsa propeller.

Unfortunately, with the wing in the position shown on the plan, the model is now unflyable as the CG is much too far back.

Using nose weight in sufficient quantity will give flight of a sort, but saps performance.

Moving the wing back is an obvious alternative, but reduces the moment arm. Since the tail is small the model can soon become tricky to trim.

### IMPORTANT!

For those with NO Indoor Duration background some guidelines (and warnings) are necessary.

#### Remember!

"A heavy model will not fly as long as a light one - but a floppy model will not fly at all"

Don't expect to build a Winner at your first attempt. There is a pretty steep "learning curve" - and it may take several models and a fair amount of flying. Don't think this is a quick project - not if you want real success.

Test flying is easier if everything is adjustable.

### You will need to acquire :-

- Light Balsa of good quality - and sharp blades to cut it.
- Very thin plastic film for covering.
- The right glue- meaning balsa cement or similar, but not PVA or C/A
- Contact cement to affix plastic film. Maybe in spray can.
- Small size rubber.
- A winder with 10 (or more) to 1 gearing.
- A BOX to store and carry the model(s). This is vital!
- Lots of help and advice. **Don't be afraid to ask.**

Much (but not all) of the above can be obtained from specialist suppliers. You will be surprised at the prices, but small amounts of materials can produce several models.