

# L.A.D.M.A.C. *FLYER* INFORMATION SHEETS

## No.4 Centre of Gravity Finding

(Taken From *Flyer* Issue 21. November 7th. 2005)

### C OF G HUNTING

Here's an extract from an interesting item that appeared recently in one of the popular model magazines written by Scale Man **Duncan Hutson**, on finding the **CG** of a model.

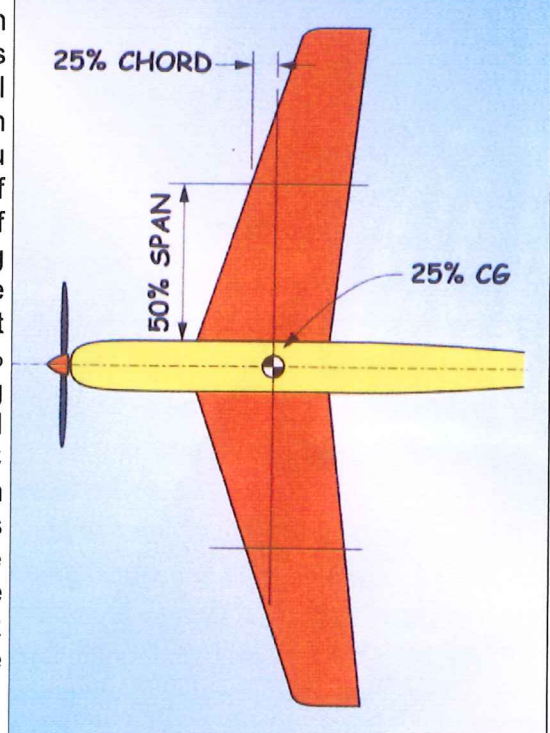
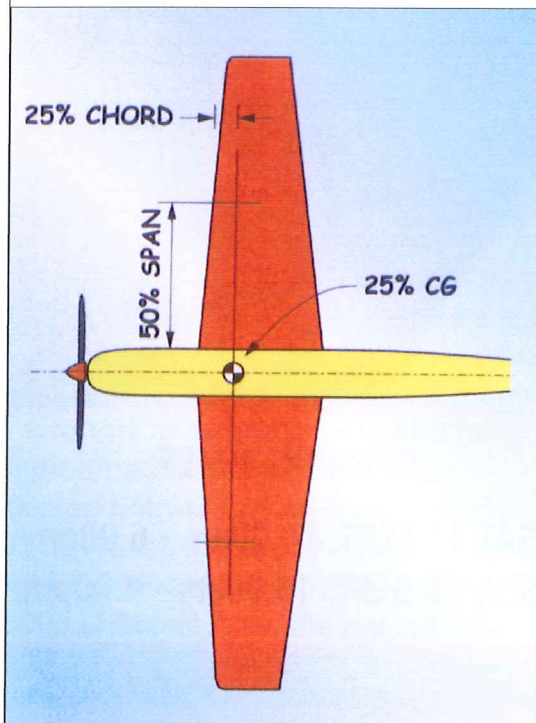
Typically a model might have a 25% C of G, or maybe 33.3%, but then another aircraft may have its stability problems cured

of G for a wing that's both swept and tapered is harder still. The method I use for both is very much the same; basically you need to look at the plan of the wing and work out half the distance from the wing tip to the side of the fuselage. At that point on

both wing panels and draw a line connecting these two points; where it crosses the fuselage is the C of G. The accompanying diagrams should give you a good idea of how this works in practice. Things become even more interesting on a biplane that has a straight bottom wing but a swept top wing. You can work out the 25% spot for the bottom wing easily, and model's actual C of G. If the top wing has a greater span than the

correct when setting up a new model for its first flight. Too far rearward and the aircraft will become very unstable and may be almost impossible to fly.

Over the years I've been asked to fly one or two so-called trainer-type models where the builder has assured me that he's checked the balance and it was exactly as per plan. I remember one such occasion where I took off slightly across the runway, and by the time I'd reached the other side I'd done almost a full aerobatic schedule... involuntarily, of course!



only when the C of G is moved to 22.5%! During many years of designing model aero planes I've found that 25% is generally a good starting point for the C of G. Once you've got through the first flight and landed successfully you can then think about what happened and make some adjustments if necessary. On a constant chord or parallel wing with no sweep it's very easy to work out what 25% of the chord is, i.e. a wing of 12" chord will have the C of G 3" back from the leading edge. Things become a little more difficult to work out on a tapered wing, especially if the taper isn't equal on the leading or trailing edge. Working out the C

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