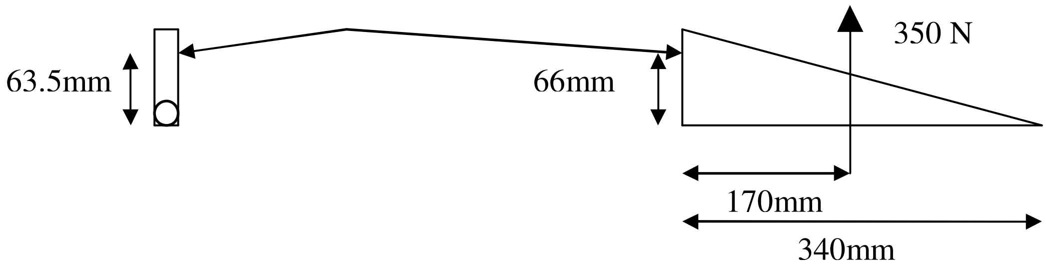
A Mathematical Proof (I'm guessing if you got this far you can handle the maths)

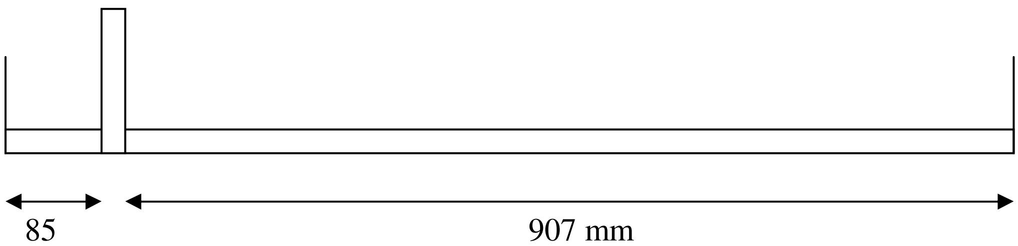
The hard thing to know here is the actual load on the flap. It varies of course as the pressure distribution shifts around during different manoeuvres so I'll make a simple assumption that the pressure is uniform on the wing, which should get us into the ballpark. I'll also assume the aircraft is at MTOW, 520 Kg in my case, so force on each wing is about 2600 N (from F = mg where g = 9.8 m/sec^2). The wing is actually loaded a bit higher because it also has to carry the tailplane down-force, but we won't worry about that.
Other things we know or can measure:
Area of one wing = 4.55 m^2
Area of flap = 0.61 m^2

So force on the flap = 2600 x 0.61/4.55 = 350 N



The diagram above is meant to represent the flap, flap push rod and the arm on the end of the flap drive shaft. From this, the torque on the flap drive shaft is:

T = 350 x 170 x 63.5 / 66 = 5.72 x 10^4 Nmm



The diagram above is meant to represent the flap drive shaft. The long end driving the right flap is 822 mm longer than the left. Things we know or can measure:

OD tube D = 25.4 mm
ID tube d = 23.622 mm
L = 822 mm
T = 5.72 x 10^4 Nmm

Polar moment of inertia J = π/32 (D^4 -d^4) = 10295 mm^4
(this is effectively the stiffness of the structure, in this case a tube)

Elastic shear modulus for steel G = 79.3 GPa = 79300 MPa

(*this is effectively the stiffness of the material, in this case steel*)

Angular deflection of flap drive shaft $\alpha = LT/JG$
(*this formula combines all of the above information - the twist of the tube will be greater if the tube is longer or the torque is higher. Twist angle will be smaller if the structure is stiffer or the material is stiffer)*

$\alpha = 822 \times 5.72 \times 10^4 / 10295 \times 79300$

$\alpha = 0.0575$ radians = 3.3°

Using the dimensions from the first diagram again, the angular deflection of the flap will be:

3.3° x 63.5/66 = 3.175°

Deflection at the trailing edge of the flap = 340 x sin 3.175° = 18.8 mm

That means that if the flaps are adjusted to be in the same position on the ground, there will be an 18 mm difference between them when flying. In practice, it will not be quite as bad as this because as the flap gets pushed up it will eventually jam up against the top trailing edge of the skin and rear spar. It could also be that my estimate of the force on the flap is too high, but even half that deflection will cause a big change in trim. It's an easy thing to fix.