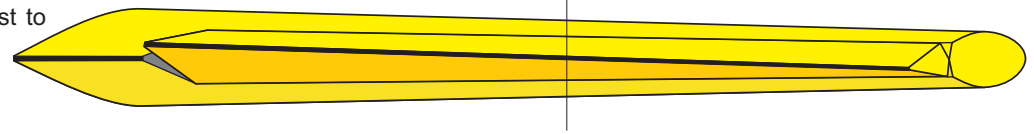


Fundamental Airplane Setup Rules-of-thumb:

Account for any twist in each control surface and "average" the twist to set the true neutral position.

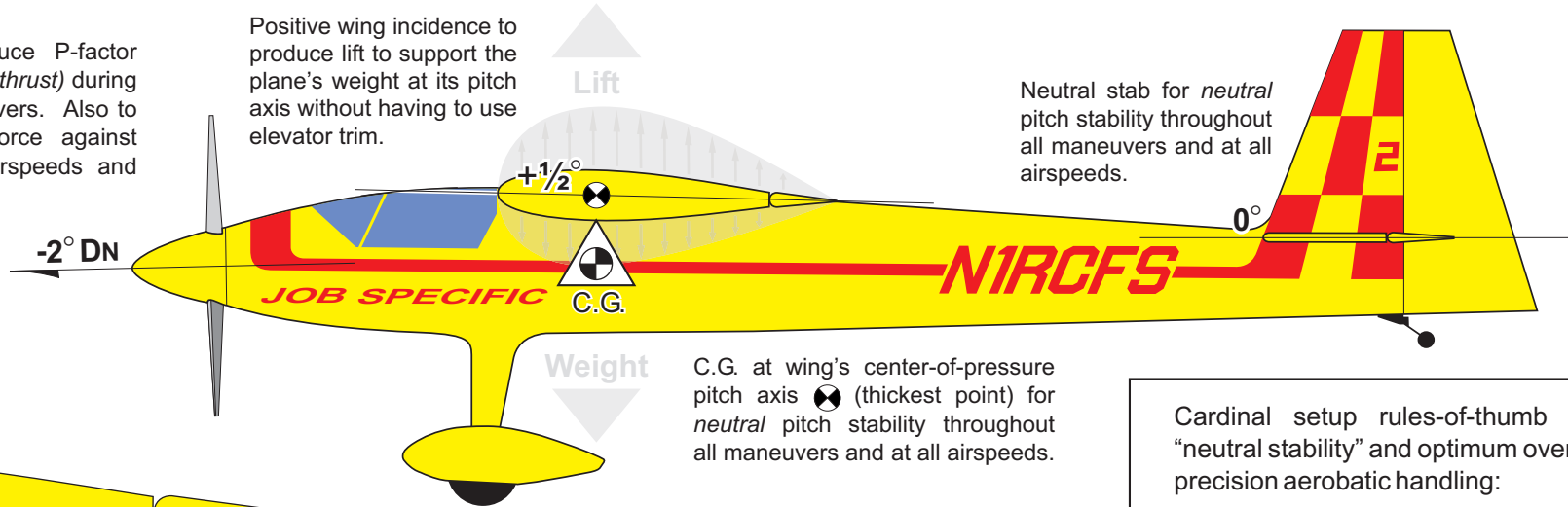
Twisted aileron example: Half span = true neutral aileron



Down thrust to reduce P-factor (*asymmetric propeller thrust*) during positive-inside maneuvers. Also to provide a counter force against climbing at higher airspeeds and assists inverted flight.

Positive wing incidence to produce lift to support the plane's weight at its pitch axis without having to use elevator trim.

Neutral stab for *neutral* pitch stability throughout all maneuvers and at all airspeeds.



C.G. at wing's center-of-pressure pitch axis (thickest point) for *neutral* pitch stability throughout all maneuvers and at all airspeeds.

Physically measure each control surface deflection to confirm proper travel in both directions — noting that different percentages are usually required to achieve the same travel in both directions).

[TRAVEL ADJ]		
ELEV	RUDD	AILE
D97%	L85%	L87%
▶U94%	R88%	R92%

Cardinal setup rules-of-thumb for "neutral stability" and optimum overall precision aerobatic handling:

0° Stab incidence
relative to the datum

1/2° Pos. wing incidence
relative to the stab

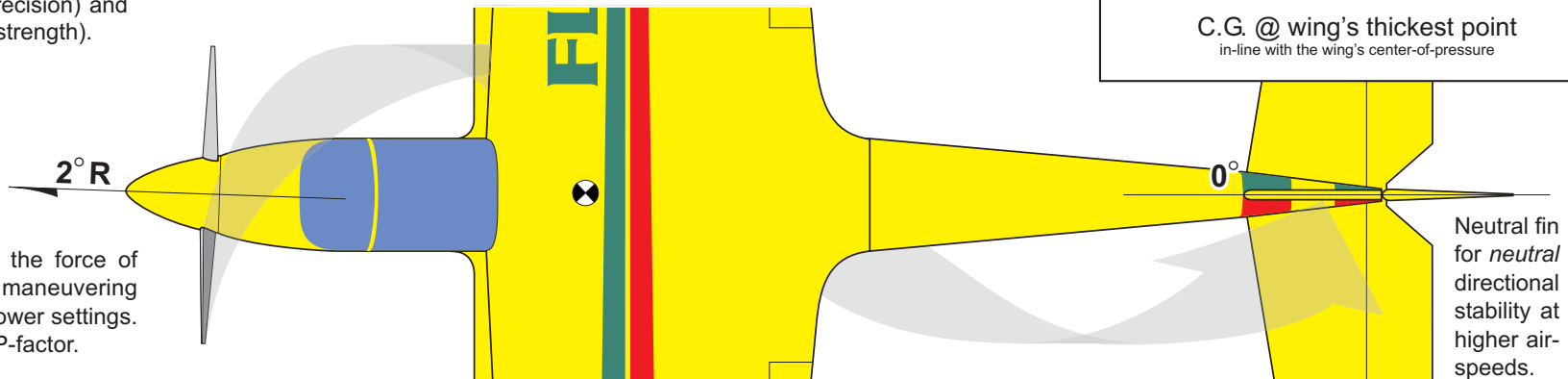
2°-3° Right thrust
relative to the centerline & fin

2° Down thrust
relative to the datum & stab

C.G. @ wing's thickest point
in-line with the wing's center-of-pressure

Pushrods connected to the holes closest to the servos and furthest out on the control horns to achieve maximum resolution (precision) and mechanical advantage (strength).

Right thrust to counter the force of *propwash* at slower maneuvering airspeeds with higher power settings. Also assists in reducing P-factor.



Neutral fin for *neutral* directional stability at higher airspeeds.

10-15% expo on low rates to maintain a precise correlation between control inputs and airplane response. Add 5-10% additional expo when the plane features over-sized 3D control surfaces. Initially fine tune general handling by changing Dual Rate and/or travel percentages, then secondarily fine tune the expo settings.

WARNING: Avoid changing any part of the setup to try to help a certain flight condition or individual maneuver! The "best" airplane setup provides optimum overall handling that compliments the majority of things a pilot does, including takeoffs and landings. From that solid footing, it's time to go learn to fly the plane.