

FIGURE 9-6 The three stability conditions with their CG-CP relationships.

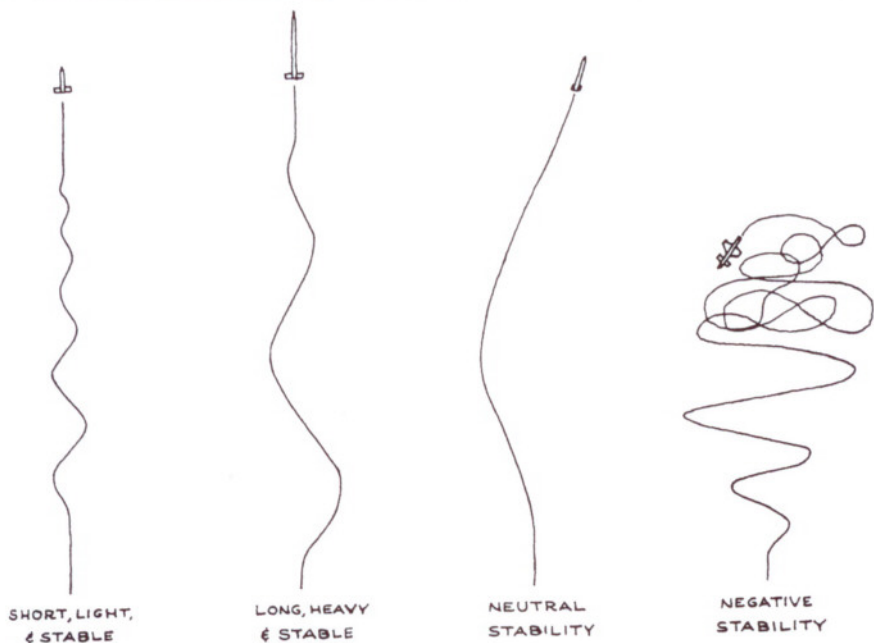


FIGURE 9-10 Flight paths of model rockets with various static and dynamic stability characteristics.

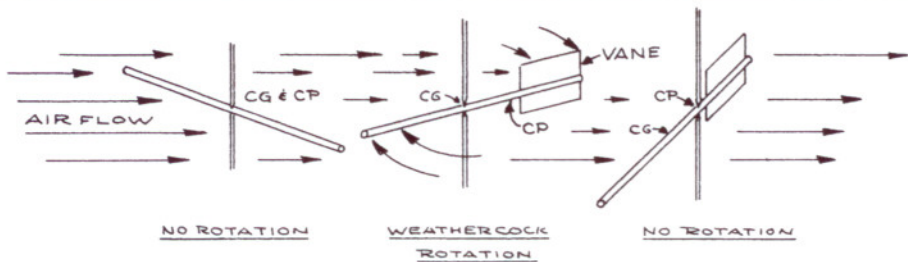


FIGURE 9-5 The stick-and-vane model under various conditions described in the text.

1. Maintain a length-to-diameter ratio of 10:1 or more to provide adequate damping.
2. Maintain a static stability margin between 1 and 2 calibers to prevent overdamping, but don't go below 1 caliber.
3. Hold the roll rate of the model as low as possible to prevent pitch-roll coupling, and align the fins carefully in an attempt to get zero roll rate for best performance.
4. If you must increase the linear dimensions of the fins to get proper static stability, increase the *span* dimension (the dimension outward at right angles to the body tube), because this will increase the restoring force rather than increasing the distance of the CP from the CG, which in turn improves the dynamic damping.