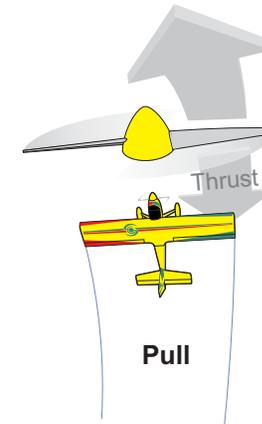
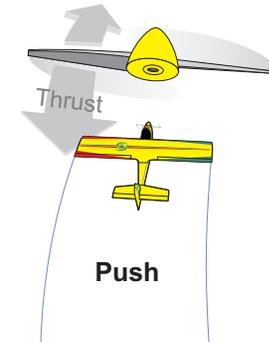


# Rudder Applications

**Positive P-factor**  
Left Turning Tendency



**Negative P-factor**  
Right Turning Tendency



**Quartering Light  
and Variable Winds**  
Sophisticated Reacting



## Knowing How to Correct P-factor

In this section: E-80 illustrates the left turning tendency of P-factor during the slower portion of an inside loop, and using Right rudder to correct it. Note: While engine down and right thrust quite effectively reduce the left turning tendency of P-factor when the plane is at a positive angle of attack, they do not eliminate it. Hence, a pilot must correct for P-factor with Right rudder on days when x-winds are not a factor.

E-81 & 82 illustrate how both knowledge and experience enable us to effectively stay ahead of P-factor deviations with Right rudder at the appropriate times. Note: The effect of P-factor can vary enough between airplanes that the timing and size of your rudder correction will have to be worked out in practice, but at least you will have the advantage of knowing what rudder you will be using beforehand, i.e., Right (when the plane is properly trimmed).

E-83 describes how the amount of elevator you use in your loop and rudder trim effect the consistency of your P-factor rudder correction throughout the period that you need it. (This section should put to rest why anyone who tries to correct P-factor by any other means than pilot skill (radio) will never get it right, since only a knowledgeable pilot can distinguish when P-factor does and does not need correcting!)

E-84 & 85 illustrate the right turning tendency of *negative* P-factor when pushing forward elevator, and using Left rudder to correct it. E.g., during the inverted portion of the 45 degree upline in a reverse Cuban or an outside loop.

E-86 & 87 illustrate how to determine the effect of a quartering x-wind, as well as what approach to take when the winds are variable or you're not sure whether the wind will need correcting and you have to react to the airplane. Indeed, there are times when reacting to the plane is necessary, but unlike the traditional *reactor* who decides what to do by primarily watching the plane, a pilot with your knowhow will already have a pretty good idea *what* to do, even if certain conditions mean sometimes having to watch the plane to know exactly *when* to do it.

KPTR: When x-winds are not a factor, Right rudder P-factor corrections are needed to remain parallel while maneuvering.