

Trammeling and Incidence



On the most basic level, there are three critical horizontal adjustments to be concerned with—the engine thrustline, the wing incidence, and the horizontal stabilizer incidence. Our project Extra 300LX is designed around one horizontal line, the thrust line.

All of the design measurements are taken from this reference line. This airplane was designed to have an alignment of 0-0-0; engine mounted along the thrustline, 0 degree wing, and 0 degree stab incidence. The top longeron follows parallel to the thrustline just 1-15/16 inches above the thrustline and the motor's crankshaft is centered on the thrustline.

All three of these adjustments work together to give you an aircraft that flies at a level *attitude* while holding *altitude* at differing throttle settings. This is especially important in precision aerobatic flying.

The wing incidence will affect the airplane's attitude. A negative incidence will give your airplane a nose high/tail low attitude, while a positive adjustment will raise the tail. Incorrect alignment of the engine with the thrust line or incorrect stab incidence may cause the aircraft to change altitude with varying throttle settings. This becomes very evident on vertical lines where you either have full power for an up line or power off for a down line.

Don't worry about perfect elevator to stab trim, it means very little if you have a slight amount of trim on the elevators as long as the airplane can cope with all attitudes of flight.