

Excerpt from FAA-H-8083-3B
“Airplane Flying Handbook”
Chapter 4, page 4-7

manufactured with a certain amount of twist, known as washout, resulting in the outboard portion of the wings having a slightly lower AOA than the wing roots. This design feature causes the wingtips to have a smaller AOA during flight than the wing roots. Thus, the wing roots of an airplane exceed the critical AOA before the wingtips, meaning the wing roots stall first. Therefore, when the airplane is in a stalled condition, the ailerons should still have a degree of control effectiveness until/unless stalled airflow migrates outward along the wings. Although airflow may still be attached at the wingtips, a pilot should exercise caution using the ailerons prior to the reduction of the AOA because it can exacerbate the stalled condition. For example, if the airplane rolls left at the stall (“rolls-off”), and the pilot applies right aileron to try to level the wing, the downward-deflected aileron on the left wing produces a greater AOA (and more induced drag), and a more complete stall at the tip as the critical AOA is exceeded. This can cause the wing to roll even more to the left, which is why it is important to first reduce the AOA before attempting to roll the airplane.

Excerpt from "Cessna 150 Owner's Manual"

back to "BOTH" position to clear the other set of plugs. Then move switch to "L" position and note RPM. The difference between the two magnetos operated individually should not be more than 75 RPM. If there is a doubt concerning the operation of the ignition system, RPM checks at higher engine speeds will usually confirm whether a deficiency exists.

An absence of RPM drop may be an indication of faulty grounding of one side of the ignition system or should be cause for suspicion that the magneto timing is set in advance of the setting specified.

TAKE-OFF.

POWER CHECKS.

It is important to check full-throttle engine operation early in the take-off run. Any signs of rough engine operation or sluggish engine acceleration is good cause for discontinuing the take-off. If this occurs, you are justified in making a thorough full-throttle, static runup before another take-off is attempted. The engine should run smoothly and turn approximately 2375 to 2475 RPM with carburetor heat off.

Full throttle runups over loose gravel are especially harmful to propeller tips. When take-offs must be made over a gravel surface, it is very important that the throttle be advanced slowly. This allows the airplane to start rolling before high RPM is developed, and the gravel will be blown back of the propeller rather than pulled into it. When unavoidable small dents appear in the propeller blades, they should be immediately corrected as described in Section IV.

Prior to take-off from fields above 5000 feet elevation, the mixture should be leaned to give maximum RPM in a full-throttle, static runup.

FLAP SETTINGS.

Normal and obstacle clearance take-offs are performed with flaps up. The use of 10° flaps will shorten the ground run approximately 10%, but this advantage is lost in the climb to a 50-foot obstacle. Therefore the use of 10° flap is reserved for minimum ground runs or for take-off from soft or rough fields with no obstacles ahead.

If 10° of flaps are used in ground runs, it is preferable to leave them

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