

Tail Wheel Shimmy

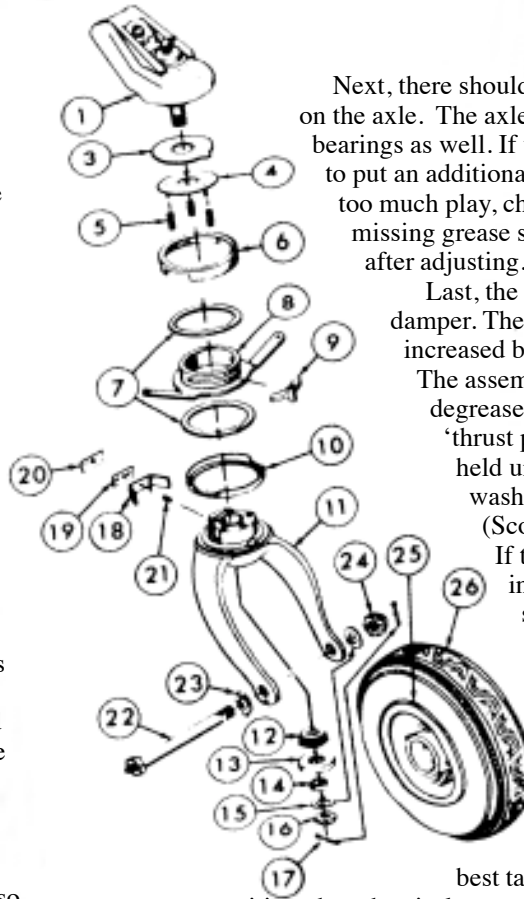
HIGH WINGS

Cy Galley

Most tailwheels will shimmy quite easily if the design geometry is wrong (most are) or if the friction device (Scott #3234, thrust plate- #4 of diagram) is mis-adjusted or gets grease on it.

The first item, geometry is easy to check. The pivot should be vertical, never slanted to the rear of the aircraft. If the pivot is slanted towards the front of the plane, it is O.K. This positioning is controlled by the tail wheel spring. You can replace the spring, or have it re-arched. The re-arching has to be done cold. No heat! Some spring companies will do it but our local truck spring company will not have anything to do with aircraft springs due to their worry of liability. So if you have a large hydraulic arbor press at your disposal, press away. I have also seen it done with a large sledge hammer and a piece of channel iron. This gets a little noisy, but works very well. While you are at it, make sure someone hasn't removed a leaf in the misguided attempt to make the plane "ride" better.

Second, make sure that the rudder and the tailwheel are lined up. One can force any tail wheel to shimmy by touching down with the tail wheel cocked to one side. So check the springs so that the wheel and rudder are aligned.



Next, there should not be any side play of the wheel on the axle. The axle nut tightness adjusts the wheel bearings as well. If there is a lot of play you might have to put an additional washer on the axle. If there is way too much play, check the wheel halves for damage or missing grease seals. Don't forget the cotter key after adjusting.

Last, the friction of the pivot is the shimmy damper. The Scott 3200 friction cannot be increased by tightening the main pivot bolt.

The assembly must be disassembled, degreased carefully, and the condition of the 'thrust plate' checked. The 'thrust plate' is held under pressure (against Scott #3207, washer - #3) by several small springs (Scott #3233, spring compression - #5).

If there is not enough friction, either install a new thrust plate, install stronger springs, or the existing springs can be raised by putting something under them. Placing a spacer under the spring has a limit though as the coils can't be fully compressed. There must be some room for them to expand and compress.

Remember, the newest and best tail wheel will shimmy if it isn't positioned on the airplane correctly or if the tailwheel isn't centered when it touches down.