Three vs. Five Internal Tailwheel Springs – The Scott Model 3200 and The Birddog

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This "number of internal springs" question may have gone away by itself or may still be smoldering as a point of contention. But I asked the question yesterday (in Oct '09) and got an answer.

I spoke with "Steve," the lead bench technician with Alaska Bushwheels regarding the need for a Scott 1862 spacer if ABI 1863 grease seal is used. (Not needed of course - probably because I have four of them in stock.) And I got the for-now definitive answer on three vs. five internal compression springs in Scott 3200A / ABI 3224A tailwheels. Here goes:

The small internal compression springs are at the heart of the Scott / ABI tailwheel design's anti-shimmy system. The need for more or less "anti-shimmy" is based on several things; including tailwheel angle, weight on the tailwheel, condition of tire, even the trueness of the airframe. For the Scott 3200 design, the factor that has the most influence is the weight on the tailwheel. So, the number of anti-shimmy compression springs used for any given aircraft varies by the weight on the tailwheel.

That's why ABI's lead bench tech always wants to know, before he overhauls the tailwheel, on what aircraft the tailwheel will be used. He said that a Super Cub, often with as little as 60-65 pounds on the tailwheel takes three compression springs. He said that a Maule, often with approx 400 lbs on a tailwheel takes all five - and may need the tailwheel swivel assembly's center bolt "snugged up" a bit for added anti-shimmy drag. He said that overtightening of the center bolt is the fix of last resort. People should be adding springs before over-tightening that center bolt.

Re: Birddogs - I asked how many springs Birddogs should have. He said we should start with three and if there's any shimmy, add another. He said three should be sufficient and should be good up to 180 - 200+ pounds on the tailwheel. I later checked and my last measured tailwheel weight was 142 lbs (empty). His information and all the preceding presumes the tailwheel is serviced properly and the assembly's center bolt is torqued properly.

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