

insurance just won't be available.

MAIN LANDING GEAR STRUT

The FeatherLite main landing gear strut for the Mark IV is halfway between that of the Long EZ and Defiant in span, chord, thickness, weight, cost, and load carrying ability. It is made of S-glass and very dense, with no voids. It has an excellent spring-constant, and will not deform or take a permanent spread after repeated loading to many gs, nor should it be necessary to "set" the gear after parking. In newsletter #64-6 we explained how to measure wheel camber and suggested checking it annually to determine that no permanent spreading of the strut has occurred. We have yet to hear of a FeatherLite Mark IV strut taking a permanent set.

The strut was purposely designed with a return curvature at both ends to reduce local bending loads. This also results in the wheels having a slight camber (bottoms closer together) of about 2.5 degrees when the Mark IV is empty or slightly loaded. As the loading is increased, the strut spreads and the wheels move outboard and become closer to vertical. As the loading is further increased, like in a high-g landing, the strut has been known to spread enough for the inside of the wheel pants to scrape the runway, and in very extreme cases, spread enough for the brake calipers to scrape the runway. But always the strut should return to its original shape after the load is relieved.

Tire wear is always the greatest at the instant the tire touches the runway, because wheel rotation is instantly accelerated from zero to about 70 knots. Because of the camber of the wheels, which is even greater when the airplane is in the air just before touchdown, the outboard tread receives the greatest wear. So when the outboard tread is nearly worn away, it is the accepted and recommended practice to reverse the tires (outboard to inboard) to even out the wear, similar to what you do with your automobiles when you rotate the tires.

Before installation of the strut, you are instructed to wrap it with 8 crossing plies of UNI, to increase the torsional strength. This should eliminate or at least minimize any possibility of wheel shimmy. You should not substitute BID, Bi-Ax, or Tri-Ax cloth.

You are instructed to install the axles with a slight toe-in, about $\frac{1}{4}$ degrees. This will provide the least rolling resistance in takeoff and landing, and least tire wear. When you think about it, the reason is simple. During takeoff, as the load is relieved from the wheels, the strut tries to come together, and toe-in helps it do that. When you land, the

sudden load (unless you “grease it on”) spreads the strut and then as the load is relieved, the toe-in helps it come together.

BRAKE OR COAST