

# Technical Counselor

## Tires by Chris Wade

Tires and wheels are a very important part of your airplane. Probably the most direct wear occurs on the parts that allow your plane to roll. Low pressure or dragging brakes will lengthen your take off roll considerably as well as cause pulling to the side during taxi operations.

Tire pressure is a function of gross weight coupled with the tires/tube limitations. Small-wheeled airplanes with dry weights approaching 1000 lb. or more need to have pressure vigilantly maintained. Tube tires and valve stems leak over time. Know the pressures for your aircraft and maintain them. It will save you a lot of grief at foreign airports having landed on low tires and driven a rim into the tube. It's embarrassing to have closed a taxiway, not to mention the time you will spend finding a fix.

Incorrect caliper installation or rusty discs usually cause brake drag. New brake shoes run close to the discs, but shouldn't rub the disc. Make sure that the caliper floats freely on the guide rods. Small amounts of grease and regular service will alleviate problems. A hanging caliper feels like air in the brake lines when pushing the pedal(s).

When changing tires on an airplane, it's not good maintenance practice to mount them immediately after changing. Pinched tubes cause many runway and taxi -way problems. Tire changing techniques for planes are different than cars, bikes and motorcycles. Airplane rims are in two halves and are easily damaged with screw drivers and tire irons. A bead breaker is the best choice, but there are some techniques available if you don't have one. Don't take the rim apart. Let the air out first; then break the bead seal of the tire on the rim. You can do this with your shoe heel, but yours and a friends has more effect. Clamps or vise jaws work as well. I have even seen people using a drill press by driving an empty chuck into the tire then rotating position and repeating the process. If you take the rim apart first, the wheel halves float and do not give adequate resistance to allow the bead to be broken.

Probably the best way to learn is to help someone do it. The annual is a great time to see the wheel/brake maintenance dance.