

The braking system is really quite simple but often overlooked for proper maintenance, until a problem comes up, or at annual time. As a disc brake system it is exposed to the elements, rain, snow etc; with little or no protection. Some of you may have experienced a brake shudder on taxi or landing that might feel like an out of balance tire, maybe a pull to one side on braking, or a soft peddle. The disc braking system is called a floating Disc Brake System, or floating Calipers for a reason. First lets check to see that there are no leaks in the system, a sign would be a red fluid around brake (hoses) lines, chaffed brake lines, the wheels, drops on the hangar floor. We will get into the fluid level in a minute. Usually the plane does not have to be on jack stands to service the system. **DO NOT** disconnect the brake lines from the calipers. Simply remove the through bolts on the calipers, the calipers will split apart exposing two small brake shoes on the one side and a single brake shoe on the other side of the brake disc. One side of the caliper will have two round pucks or plungers affixed inside of the caliper. The brake shoes are called floating shoes because they must slide freely on their locating shafts. Check the brake linings or pads. They are held in place with pop rivets. If they need replacement you only need the pads, not the plates they are attached to. Check the disc the pads make contact with. If scored, grooved, or out of shape they must be replaced. Clean the locating shafts, around the pucks (plungers), and the brake shoe holders. A spray on brake cleaner will do. Slide the brakes shoe holders on the locating shafts. The shoes should move freely (loose) on those shafts. Put a small amount of light oil on each shaft. A heavy amount, or grease will collect dirt etc; Reassemble. The following usually works best with two people. Inside of your plane at each rudder (four if you have co-pilot brakes) you will see what looks like an aluminum cylinder behind each rudder peddle. Place shop towels around any holes in the flooring, remove the plug located on the tops of these cylinders, wrap a shop towel around the cylinder, Now take a small hand held oil pump squirt can, fill it with the recommended brake fluid, fix a small tube that will fit snugly over the end of the squirt can nozzle and bleeder or fitting located at the bottom of each caliper, loosen that fitting, attach the tubing. With someone inside watching the cylinder, fill till the fluid starts to run out of the cylinder, tighten the bleeder fitting at the caliper as you squeeze the trigger on the oilcan. Replace the plug on the cylinder. The system must be bled, or brake fluid replaced, from the bottom or caliper up to assure fullness with no trapped air. After assembly it may be a good idea to do some FIRM braking on taxi way to let the new brake shoes settle in. Check the tension on the emergency / parking brake cables.