

THAT'S THE BRAKES – MARCH 2008

This is dedicated to the young man I passed earlier this spring on the side of Interstate 4. I stopped to see what his trouble was and found he had already determined what was going on. At first he thought the engine was the problem but then he quickly deduced his front brakes were locking up slowly and progressively.

Fortunately for this young man he had some good riding skills. He also was fair at deducing things. I quickly explained what I thought was happening, (for diagnoses on the side of Interstate 4). I ask if I could call anyone he said no he had his phone and he was fine. He would try some of the things I had suggested and get help from anyone if that did not work. I suggested he checked this website frequently in the future for help with preventing these kind of roadside mishaps.

I hope this article will help riders keep this kind of thing from happening to them and their motorcycles.

Hydraulic brake systems use brake fluid to apply pressure to brake pistons and pads resulting in the stopping force that brings us to a halt. The brake fluid has a property known as "hygroscopic". In simpler terms that means it absorbs water that gets into the brake system. Unfortunately, this water can cause damage with corrosion on all internal brake parts and the breakdown of the brake fluid. Most manufacturers have determined that the brake fluid common in most systems can remain in the system for a period of TWO YEARS before replacement becomes necessary. Leaving the brake fluid in the system longer than this causes the aforementioned corrosion to act adversely on all parts inside this relatively simple system.

Hydraulic brake pistons apply pressure to brake pads when we have the rider apply pressure with the brake lever or pedal. This pressure is then released through the simple act of the brake pistons seal **RETRACTING** the piston by returning to its original position. Any corrosion behind the seal or between the seal and the piston will cause this action to fail resulting in brakes that "lock up".

As mentioned before, this can all be prevented with proper care of the brake system by changing the fluid frequently. I changed mine every year, sometimes sooner. Some riders and technicians avoid this process from lack of proper equipment. After all, spongy brakes, or

brakes with old brake fluid are better than no brakes at all. The process of changing brake fluid without the proper tools can end up in a long process, sometimes without results. Any air in a hydraulic brake system can result in poor brakes, spongy brakes or no brakes. So introducing air to a working brake system can cause disaster.

The best tool for refreshing brake fluid in a motorcycle's hydraulic brake system is commonly known as the Vacula. This is a nickname that was given to a tool for using air pressure from a compressor to remove all old brake fluid from a motorcycle's hydraulic brake system and replace it with new. This can be done in a matter of minutes rather than the hours it takes to hand pump old fluid out and hand pump new fluid in. FYI the bubbles you may see during the bleeding process, with the Vacula, are of little concern. They are bubbles drawn in at the bleeder screw.

This tool was introduced to the industry as brake systems get more sophisticated. ABS systems have many places where air pockets can hide. Integrated brakes have the same characteristic. Integrated brakes, or systems that combine the use of front and rear calipers through the foot pedal, have been around awhile.

You should always use the recommended brake fluid the manufacturer has decided is proper for the system on your bike. DO NOT MIX grades of brake fluid. Doing so is experimental, mostly mental.

I will not take responsibility for negative results in the forthcoming advice. If your brake fluid has already caused your brake systems to fail, and you're stranded on the side of the road here are some emergency measures you can try. The pressure needs to be released. A tap to the outside of the brake caliper will relieve the pressure enough to get you freerolling to a place where it can be repaired. You will not however be able to use the front brake unless necessary. If you do use the front brake, you will have to repeat the process. I cannot emphasize enough how this is a temporary solution to get you off the side of the highway safely. My best suggestion is to call a service to haul your bike and be repaired.

The proper repair for your brake system is a complete overhaul. This means removing all brake fluids, pistons, seals and inspecting all of these items for reuse or replacement. Once you have prepared the brake system to the proper manufacturer specifications you should never have to rebuild it again. If you maintain it properly by changing the fluid periodically, one to two years, you will enjoy many years of

riding with trouble-free hydraulics on your hydraulic brake system. There are other concerns with brake systems that I will go over in a future article.

Here's hoping to give you a wave from the oncoming lane.
Ross