TECHNICAL TALK

By Chuck and Marlene Isom

Motorcycles manufactured today have a lot of real nice technology built into them. Things like GPS, air bags, Fuel injection, heated seats and grips, Electric adjustable windshields, 10 disc. CD changers and lots of other things, but safety items like brakes grab my attention. When I need to make an emergency stop, I want to be able to as they say " stop on a dime and get 9 cents change." So here is the information on MOTORCYCLE BRAKING SYSTEMS Braking systems have evolved much since the earliest motorcycles. The early motorcycles had only feeble rear brakes, if they had brakes at all. The first major advance since putting brakes on both wheels was the wide availability of hydraulic disc brakes. Today's motorcycles have great stopping power due to modern materials and design of both brakes and tires. Until fairly recently, while materials and designs changed, the logic of brake systems had not. The right handlebar lever operated the front brakes and the right pedal operated the rear brakes. Motorcycle crash data shows that a contributing factor to many crashes is improper braking by unskilled riders. Typically these riders over braked the rear wheel causing a skid, and under braked the front wheel, if they used the front brakes at all. The manufacturers response to this problem was to introduce a new brake system logic.

INTEGRATED Brakes: This system uses three discs, one in the rear and two in the front. Application of the front brake lever applies one front disc. Application of the rear brake pedal applies the rear disc and the second front disc. Usually a proportioning valve directs more pressure to the front disc.

LINKED brakes are marketed by Honda are the next step in the evolution of the integrated brake system. This system is similar to, but more complex than Integrated Brakes. The linked system also uses three discs but with three piston calipers on each disc. The application of the front brake lever applies pressure to pistons in each front caliper and one piston in the rear caliper. The rear brake lever applies pressure to two pistons in the rear caliper and one each in the front calipers. When I first read about this system I thought why do we need this level of complexity? All magazines that have tested it reported it to be an improvement over both conventional brakes and Integrated brakes. I have since had a chance to try it(a GL 1800 that had Linked ABS) and I can say it is a good system.

ANTI-LOCK brakes (ABS) are available from an increasing number of manufacturers, on an increasing number of models. This system uses three discs with a sensor ring on each wheel. When a difference in RPM is detected between the front and rear wheels during braking a locked wheel condition exists. This engages an electronic logic system and hydraulic brake pressure is rapidly pulsed to the locked wheel. This quickly gets the wheel rolling before a dangerous skid can happen (provided you are traveling in a straight line).

LINKED ANTI-LOCK brakes are a combination of both linked and ABS; Honda markets this system. EVO ABS is a BMW system that combines Linked, ABS and a servo assist to produce a faster acting "Power brake" style system. Others in the press have reported both strong plusses and minuses with the system. It is reported to work very well at moderate to high speed, producing quick, controlled stops. There have been reports of EVO ABS being "Too touchy" at low speed, possibly causing wheel lock with only light brake pressure. I would expect BMW to quickly react and produce a more refined system in future design generations. Why offer so many different brake systems? Each of these systems was designed to reduce the errors in braking that lead to many crashes. It is easy to make a mistake in braking that can cause a crash. Emergency braking is a high stress situation. An error that lasts a split second can cause a crash. Highly trained and practiced riders are less likely to make this type of mistake but it can happen to any of us. In my judgment the extra $1000 you pay for the ABS on a new Goldwing is worth the cost. You may never engage the system, but if you do you will appreciate having it there. I disagree philosophically with these systems removing some level of control from the rider but I have found no problems with the use of these systems in actual trials. EVO ABS is the only exception to this. I have no experience with the system

When considering the purchase of a new motorcycle, consider the type of brake systems that are available. Read magazine reviews and talk to owners of the bikes you like and decide which system makes the most sense for you.

Question: If your motorcycle could travel at the speed of light would your headlights work?

What you don't want to hear from your Motorcycle Mechanic:" I couldn't repair your Brakes, So I made your horn louder."

Marlene and I are just a part of the over 700,000 snowbirds in Florida at this time of year, and we are enjoying it.

Best wishes for some nice riding weather soon.

Your Technical Coordinators, Chuck and Marlene