Educator's Note: *Following is part 3 of the articles sent to us by SmarTire. The following article was sent to us, unsolicited. However, it contains information related to your safety while riding that is worth reviewing. The article has been provided by SmarTire, Inc., which manufactures and sells products related to the subject of this article. The inclusion of this article in our newsletter is* ***not*** *to be construed as an endorsement or recommendation either for or against their product line. It is included here merely for your awareness of the subject in order to increase the safety of our members. The article is reproduced here without editing.*

SmarTire Tire Tips
By John Bolegoh, Technical Services Manager, SmarTire Systems Inc.

Article Three

In this third installment, we'll look at air pressure and how it relates to load.

The Importance of Tire Pressure on Load
The amount of air pressure that a particular tire requires is based on a combination of factors including the weight of the bike, the type of riding the bike was designed for, the weight of the rider/passenger and any additional gear. All of these factors contribute to load, either in terms of weight or to other load forces such as acceleration, braking or cornering.

It is critical to understand that it is the air pressure inside a tire that enables the tire carcass to support a load. Although the tire carcass and overall structure of the tire has a significant effect on performance, it really is the air pressure inside the tire that provides the tire structure with the ability to support the weight of the bike and rider as well as the cargo, additional passengers, etc.

Touring Bikes – On the Edge!
Since most touring motorcycles operate at or near their rated load maximums, it is easy to see why maintaining air pressure at proper levels is so important with respect to achieving a tire's rated load carrying capacity.

On a typical touring motorcycle, 4 psi (.275 bar) of air pressure loss is approximately equivalent to losing 60 or 70 pounds (30 kg) of load carrying capacity. This means if a tire's pressure is 36 psi instead of 40 psi, you should take 60 or 70 pounds of load off the motorcycle. This example illustrates how under-inflation by just a few psi can have a huge effect on a bike's load carry capabilities.

Additional Load Requires More Air
When carrying a passenger or gear, it may be necessary to increase both your front and rear tire pressures to compensate for the additional weight. Motorcycle manufacturers will specify different cold inflation pressures depending on whether the bike is loaded or not. Check the owner's manual or vehicle placard for more information on recommended cold inflation pressures for your particular bike and load.

Different Tires for Different Loads
Most tire companies offer tires with different load-carrying capacities. Consider carefully the weight of the motorcycle, the weight of any optional equipment and whether it will carry passengers when choosing a tire. Remember, it is possible to overload a tire even though it is the size specified by the motorcycle manufacturer. Maximum load ratings at the specified inflation pressure are marked on the tire and should never be exceeded. Consult with your local dealer for recommendations on the correct tire to suit your riding and load requirements.

Under-Inflation + Too Much Load = Trouble!
Considering that [surveys indicate that] almost half of all motorcycle tires are under-inflated and many touring bikes are overloaded, this combination can have serious consequences. Riding on under-inflated and overloaded tires will cause steering, handling and braking problems as well as greatly increased tire wear. Also, the heat buildup of riding on under-inflated tires is greatly increased when the tires are also overloaded, causing internal damage that can quickly lead to a complete tire failure.

Send Us Your Flat Tire Stories!
If you have an interesting story related to a tire problem while riding, we'd love to hear it. Send us your best flat tire story, and I'll compile them into document for future distribution. If we publish it, we'll send you a SmarTire gift and we'll put your name in a draw for a free SmarTire for Motorcycles, Active Tire Pressure Monitoring System. Send your stories to: tiretips@smartire.com.

In next month's installment, we'll look at some general tire maintenance tips and talk about electronic tire pressure monitoring systems for motorcycles.

John Bolegoh is SmarTire's Technical Services Manager with over 30 years experience in the tire and tire monitoring industries. To contact John with a question, email tiretips@smartire.com.
SmarTire offers the world's first active tire pressure monitoring system for motorcycles.
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