Safety Corner

Motorcycle Lighting: To See and Be Seen is the Goal!

One of the leading causes of death or injury to motorcycle riders is not being seen by other motorists. Too many have died simply because other motorists did not see the motorcyclist.

Motorcycle safety is a myriad of specific and yet very much interrelated issues. Clothing, for example, has a two fold safety issue insofar as it affords the rider the greatest measure of protection, and at the same time there is a second but no less important issue of visibility; you want your clothing to be seen by other drivers you share the road with. Right along with your personal visibility, you want to ensure your bike is seen by motorists around and in front of you.

To enhance your visibility, this article will discuss the different headlight, tail light and auxiliary lighting options that can have a direct impact on your ability to be seen, and see what's ahead down the road.

The obvious purpose of your motorcycle headlight is to illuminate the road at night, and enhance your visibility and safety any time of day. This latter purpose has seen some serious erosion of late when you consider the proliferation of motor vehicles using daytime running lights. Although there are a number of different types of motorcycle headlights, there are only three basic categories.

Reflector Beam Headlights account for the majority of headlights in use on motorcycles today and were the first to be developed. The unit generally consists of a clear glass or plastic lens that encases and protects a replaceable light bulb and a reflective surface. When activated the bulb shines and the light is transmitted onto the reflective surface and then directly ahead of the motorcycle. Another lamp within this category is a sealed beam headlight where the bulb and reflector is all one unit.

The second type of headlight referred to as Projector Beam Headlight is a newer technology and are generally found on a limited number of newer model bikes. This also is a single unit incorporating a filament surrounded by an elliptical reflector encased behind a condenser lens. The advantage of this technology is a sharply defined focused beam of light that is superior to reflector headlights.

There are a variety of the filaments used in motorcycle headlamps today. The most common is a tungsten filament; however when compared against newer technology that's available today, these elements consume more power and provide less light in the process.

Next in the succession of filaments' is the tungsten-halogen filaments developed in the late '70s which were an improvement over tungsten filaments in that they produce light more efficiently and used less power.

Today however; motorcyclists have a growing number of lighting options that provide a marked improvement over the tungsten-halogen bulbs. Alternative light sources such as HID or high intensity discharge headlamps, and LED or light emitting diodes are vastly superior to head lamps that utilize a filament as a light source.

HID light sources are an outgrowth of industrial lighting such as those used at a sports arena. HID lighting is produced by using a high voltage electric arch in a metallic salt vaporization within a chamber. Xenon light sources which are included within the HID grouping contain xenon gas. HID light sources generally produce high-intensity, bluish-tinged beams. Absent a glowing filament, the HID headlight is more than three times as efficient as an incandescent light, operates at a cooler temperature, has a longer lifespan, and produces a whiter light three times brighter than other incandescent bulbs.

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LED lights also provide a significantly brighter and whiter cast than the yellow light of a halogen bulb. Compared to a halogen bulb, they provide a much longer life. A typical 7" original equipment headlight in high beam mode projects a typical beam approximately 30 ' from side to side and roughly 525 ' ahead of the motorcycle. An LED in the same configuration illuminates an area roughly 50+' side to side and 650' ahead of the motorcycle, a significant increase over an incandescent bulb.

Fairly new to the market is another lighting innovation that enhances your ability to make you and your bike more conspicuous while on the road is a Headlight Modulation Kit. The kit is relatively inexpensive and allows your headlight during daylight hours to flash between your high and low beam headlights 4 times per second. The system available through Harley Davidson has an override that allows you to control when the system is in use.

Closely akin to the forgoing is another innovation that overrides the current configuration on those bikes equipped with running lights and allows these lights to remain on when your headlight is switched to a high beam setting. This is another very reasonably priced safety feature recently made available from Harley Davidson that can aid in increasing your ability to see at night and improves your ability to be seen by oncoming traffic.

For bikes with and without running lights, there is yet another auxiliary lighting system that while moderately expensive, greatly increases both your ability to see and be seen by other motorists. While there are a number of auxiliary lighting system available, perhaps the one that stands out among all others are the motolights. This lighting system bolts to your front brake calipers and is available with either halogen incandescent bulbs or LEDs. From my personal experience with these lamps, they do significantly enhance the visibility of your bike and therefore your personal safety.

The last lighting feature that I intend to discuss are a couple of the rear lamps available to increase the visibility of your bike to be seen from behind, and increase other motorist's awareness that you have applied your brakes and are either slowing or stopping. Current original equipment rear lamps that are standard on the bike are illuminated with halogen incandescent bulbs. We have already touched on the efficiency of light produced by these bulbs; therefore replacing the original equipment rear lamp with an LED would significantly improve your visibility from behind. One such lamp assembly is available from Harley Davidson and plugs into the existing wiring. Another product sold under the trade name "Bright Ass Light" is another rear lamp assembly that drawing from my personal observations makes your bike stand out in a crowd. There can quite literally be any number of bikes ahead of you and if someone has one of these rear lamps, your attention is drawn to it when it is on and especially when brakes are applied. The rear lamp is very bright and features the ability to choose among several flash patterns to warn other motorist when you apply your brakes.

One word of caution regarding LEDs and HIDs, they are not all created equal. I have personally seen bikes with aftermarket LED headlamps that were not that bright during the daylight, and while they provided plenty of illumination at night, you want to be just as visible during the daylight. If you decide to go with an LED or HID light, do some investigation and check with friends who have purchased them and see how satisfied they are with the product. Also, some of the aftermarket lighting requires resistors or voltage regulators when the LED or HID lights are installed. These may or may not cause issues with your electrical system, so again you might want to first look at products that are specifically made for your bike and plug into the existing wiring harness absent any modifications.

As always, ride safe, always practice safe riding skills and keep in mind just how visible or invisible you are to the rest of the motorists you share the road with.