

## BIG BIKE COMPARISONS

### HONDA 450 cc

The Honda 450 is smaller than the other motorcycles in this group but riders frequently compare it to the larger motorcycles. Its weight of 420 lbs puts it in the heavy weight class. Its engine puts out approximately the same horsepower as the bigger bikes and it will cruise at the same freeway speeds. The Honda 450 dual overhead cam engine has gained an excellent reputation for reliability even though it's difficult to work on. The latest version of the engine is noted for being extremely smooth with a very wide, easy revving power band. The original models of the 450 were considered rather ugly to look at but the '68 version is quite improved and also handles better. Even though it's the smallest of the heavy weight class, it probably gets a good percentage of the big bike sales.

### BENELLI 650 cc

The Benelli 650 is quite a new motorcycle with push rod overhead valves, twin cylinders and an advertised 48 hp. It has an electric starter, five speed gear box, a new and very attractive tubular frame, Ceriani type front forks and rather modernistic Italian styling. It is probably a good motorcycle but the Benelli distribution in United States has been poor. However, the Montgomery Ward Company and the J.C. Penny Co., are selling Benelli under their own brand names. Montgomery Ward is buying the motorcycles without seats and tanks which are being supplied by an American plastics company. Montgomery Ward is testing a new marketing plan for motorcycles this year and because of the credit they can offer their customers, they could sell a reasonable number of motorcycles. The same Benelli frame and suspension is used on a 360 cc and 500 cc model.

### BMW 500 cc and 600 cc

The BMW is a rather old and awkward design but due to its extremely smooth performance it has become the Cadillac of motorcycles. It is not especially fast or attractive but its high quality finish, and reputation for reliability make it a constant seller. The engine is extremely quiet and smooth and the seat is large and comfortable making it an excellent touring motorcycle. Its distinctive features are its opposed twin cylinder engine design and drive shaft rather than drive chain. Even though this motorcycle does not sell in large quantities, its continued popularity indicates a number of buyers want a smooth, quiet, and reliable motorcycle and are willing to pay the price for it.

### BSA 650 cc

BSA builds three models of the 650, the main difference being styling and performance. BSA and Triumph are manufactured by essentially the same company. The name BSA has become almost legendary and the name alone has sold BSA's even when the product was inferior to other big bikes. The 1967 and 1968 models however seem to have corrected their mechanical problems although their engine design is somewhat outdated as compared to the overhead cam engines. Distinctive features have been their separate speedo-tach units, tank design, and racing style seats.

## HARLEY DAVIDSON SPORTSTER

The Sportster is built in two models, one with electric starting. The sportster is a big and relatively heavy bike but with its 900 cc engine it is considered the powerhouse of fast motorcycles. It is a V twin, push rod operated overhead valve engine with a four speed gear box. Its 900 cc displacement and price of \$1,650. has put it in a separate class so it is seldom compared with the other motorcycles in this class. It is most popular with customizers and the outlaw element of motorcycling.

## HARLEY DAVIDSON 1200 cc ELECTRAGLIDE

The Electraglide is a large, fast, and comfortable touring motorcycle with electric starting. A tremendous amount of chromed accessories are available for the Electraglide. Some owners seem to buy the motorcycle just to hang accessories on it. Its main feature seems to be its large size. Some buyers want a big, comfortable motorcycle.

## INDIAN 750 cc

The Indian was an American built motorcycle which discontinued production a couple of years ago. There has recently been renewed interest in the Indian and Floyd Clymer is planning to build them. It is a twin cylinder side valve engine of outdated design but of considerable reputation for performance. It has an electric starter and rather racy appearance.

## MOTO GUZZI 700 cc

Moto Guzzi engine is a twin cylinder V design with electric starter. It has a drive shaft rather than chain similar to the BMW. The engine and drive train is laid out very much like an automobile including a two plate dry clutch. Its most significant feature is probably its unique design.

## NORTON 750 cc

Norton and Matchless are now one company so the models are often referred to as Norton-Matchless. They build three 750 models with basic differences being appearance, performance and muffler systems. The engine is a standard overhead valve design using a dry clutch and separate transmission engine units. Nortons are most noted for their "featherbed frames" and are considered extremely good handling motorcycles.

## ROYAL ENFIELD 750 cc

The Royal Enfield uses a conventional twin cylinder, overhead valve engine design with separate engine and transmission units. It has a reputation of being very fast but in fact is not as fast as some other 650's and 750's and is somewhat unreliable.

## TRIUMPH 650 cc

Triumph builds three models, single and dual carburetor, with crossover pipes on the trophy special model. Triumph's design, reliability and name make it the leader in this class. Its engine is a twin cylinder conventional pushrod activated overhead valve design with a four speed gear box. The entire motorcycle has been continually up-dated and refined so that many buyers consider it the most modern machine in its class.

## TRIUMPH 650 cc cont'd.

Triumph and BSA have designed a three cylinder engine with entirely new frame and suspension which I expect to see marketed before the end of this year. It has been tested at Orange County Raceway and the test riders claim that it is extremely fast with good brakes and excellent handling. Advertised horsepower will probably be 65. This motorcycle has been planned for at least four years and has been tested for a couple of years so I would expect it to be a good motorcycle.

## KAWASAKI 650 cc

Kawasaki 650 cc models are generally reliable but have some weak points which have not been corrected during the past two years. Most noticeably we have had problems with excessive vibration which has caused cracking and breaking of numerous parts. Although some engines run very smooth a large percentage vibrate excessively. The Kawasaki 650 is sufficiently fast to compete well in this class but is approximately 50 lbs heavier than comparable motorcycles. The separate engine transmission design is preferred by a few but is generally considered outdated. Many motorcyclists refer to our design as being a 15 year old BSA.

## CONCLUSION

This class of motorcycle has undergone many minor improvements but in general the engine designs are not as progressive as the motorcycles under 500 cc. Only the Honda 450 and possibly the new Triumph and BSA three cylinder design could be considered advanced engine designs. My opinion is that a 650 or 750 cc two cylinder, four stroke, single or double overhead cam engine would be most acceptable at this time. This is of course assuming the vibration problem can be cured. The three cylinder engine design is supposed to be extremely smooth and therefore should be considered. We should purchase a Triumph three cylinder as soon as one is available for our own evaluation. A unit engine transmission construction is required but it should be designed so that the internal transmission parts can be pulled out the side of the engine without total disassembly. An electric starter is necessary and a torque converter type transmission would be excellent if it can be built to perform efficiently. Horsepower must be in excess of 60 with a smooth power band. Quiet, vibration free design and considerable rider comfort are very important on this model. The entire motorcycle must be extremely durable requiring a minimum amount of maintenance.