EXHAUST PIPE MOD

ROYCE CREASEY advises on a modification which can locate the exhaust pipe better and save the exhaust valve.

☐ I am indebted to Mr John Richards for reminding me, in a recent letter to the magazine, of a brutally effective solution to a small but common problem – a solution which was discovered so long ago that I had forgotten all about it. Although it has the drawback of permanently altering the appearance of the bike, this solution may appeal to those of you who do not take such matters too seriously.

First the problem, which is yet another example of extreme engineering optimism practised on innocent motorcycle engines. The push-in exhaust pipe, a method of securing the pipe to the cylinder head, has been used by the majority of our manufacturers at some time or other so I can refrain from wounding engineers long-retired and only note that even Velocette used a method which was only a half-satisfactory modification of the basic pipe-in-a-hole approach.

A steel pipe in an alloy hole will inevitably loosen when heated and, when the other end of the pipe is firmly attached to some distant part of the bicycle, this process will be hastened by the impact of vibration. By now, most of these pipes will have been in and out of the hole countless times and the fully-floating fit is a common result. This in turn produces the poor engine tune and violent backfires complained of by Mr Richards.

Although the solution in question, based on good engineering principles, was established some time before Honda progressed beyond the C50, current motorcycles are routinely fitted with a version of it. You can therefore expect to find such versions, and possibly some of the components you need, by stumbling into a bike breaker's yard.

Positive location of the exhaust pipe is readily achieved by bolting it to the cylinder head with two bolts diametrically opposed across the pipe. If looking at modern Japanese machines causes you pain, examples of this approach can be found under any car bonnet or even on your lawn mower. The Japanese method is usually to weld a ring to the pipe and then engage this ring with a loose collar on which are two ears to engage the two retaining bolts.

A loose ring is a good idea because it minimises heat transference into the retaining system and provides for some misalignment of the pipe. It is however equally satisfactory to simply weld a pair of ears onto the pipe which will engage with the retaining bolts in a similar fashion.

Finding something to screw those two bolts into is more of a problem as there are only cooling fins in the appropriate location on your English cylinder head and these are obviously much too thin to support a threaded hole edge-on. The solution is to drill two ½ inch diameter holes, either side of the port, vertically through the fins. These holes should be well back from the edge of the fins and pass through all the fins on each side of the port.

Insert into the holes two pieces of half-inch round bar and then drill and tap the bars across their diameter to accept the two retaining bolts. The latter should, of course, pass between the fins at 3 o'clock, but if this is difficult, any opposed pair of fin gaps will do.

This is, at its most basic, a complete solution to the push-in pipe problem. It's easy to fit and remove and I've run this modification on a number of bikes with complete success. To leave things at this point, however, would be to ignore a major benefit that can be achieved with only a minimum of extra work. The appearance of the bike will be further altered but as you've already ruined your chance of a concours win, you