

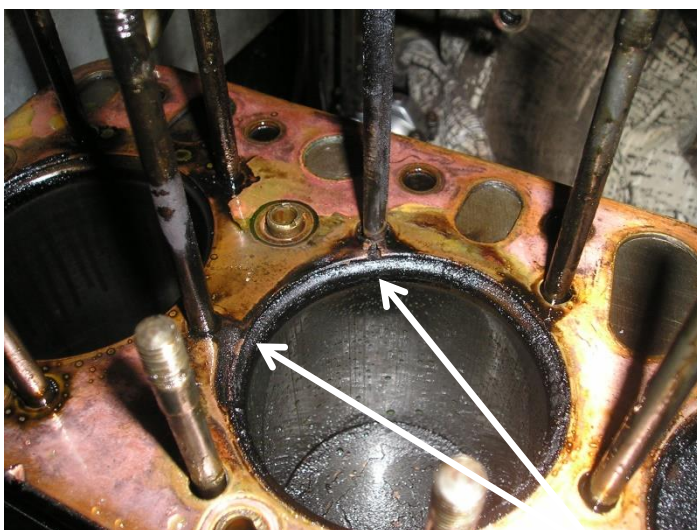
## Head Gasket Failure – two unusual events

Head gaskets on 20hps need to be torqued down at regular intervals, especially if the car covers several thousand miles per year. The 20hp engine has to be treated gently, and unlike in a modern car a new 20hp gasket cannot be torqued up to its squash limit straight away, as there is a risk of stripping the stud threads at the bottom or top. In particular the head must be torqued regularly over the first few thousand miles at least. Otherwise the gasket will probably blow, with all the messy problems of oil in the water, water in the oil, and a tedious replacement job.

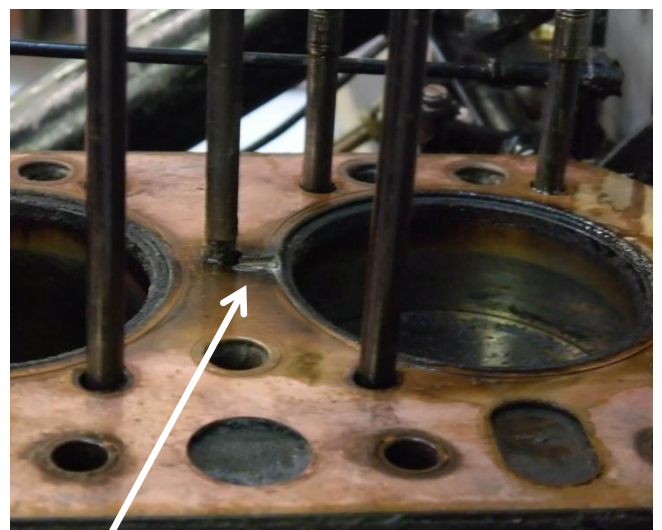
Unfortunately, torqueing the head does involve removing the rocker shaft; the central nuts cannot be easily accessed and it would be difficult to judge the torque applied to them.

My gasket did blow; strangely it blew between the cylinder and a head stud, see photograph. Combustion gases were forced up into the rocker cover and oil sprayed out of the cover and all over the engine. However we drove the 400 miles home from France with no problem – except for having to add two litres of oil. And strangely there was a loose stud nut rattling around in the rocker box. Also strangely, Graham Moore experienced exactly the same problem the previous year, so he was able to diagnose what had happened to my car. In both cases, he postulated that the heat of the combustion gases had lengthened the stud, resulting in a loose nut which worked its way up and right off the stud. No other small horsepower expert I spoke to had seen this phenomenon before. A piece of advice: make sure that the threaded length of all the studs extends right down into the head. Some head nuts might not fully tighten if the threaded section ends somewhat short of the top of the head. Use thicker washers just in case. For the record, we both have aluminium alloy replacement heads and my car had covered more than 30,000 miles since the gasket was fitted seven years earlier.

When replacing a head gasket it is absolutely essential that the mating surfaces are scrupulously cleaned of all adhering bits of old gasket. Use a sharp straight edge such as a wide chisel with care. Once clean, check the planarity of both the head and the block carefully, using an engineers straight edge. Problems have arisen where a newly-installed gasket has blown due to distortions in the surface of the *block*. Oh ... and please buy your head gasket from a reputable supplier.



GWL16



GXL39

Blown portion of gasket