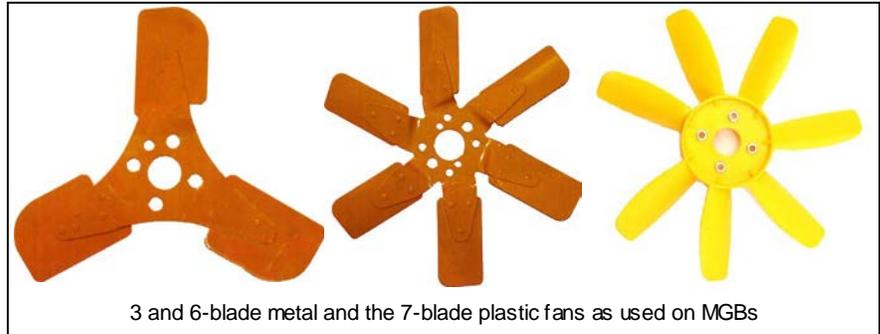


MGB Cooling Fans

by Rick Astley

Many people experience overheating problems with their MGs, so we thought it worth reproducing this article about the lowly cooling fan, by Roger Parker, which was originally published in the British magazine *Enjoying MG*, July 2014, and is reprinted here with permission. Although specifically written for chrome-bumper MGB owners, much of it is relevant to other cars including the Spridgets. Roger promises to follow it up with an article concerning electric fans, which we will consider for republishing too for the benefit of rubber bumperettes.

MGB fans have varied during production with chrome bumper models (except V8) having several variations of mechanically driven fan. The three blade metal blade fan was common for most models outside the North American (NA) market, although some very early non NA market cars and automatic models from late 1967 along with the NA cars used a six blade metal fan, before being replaced by a plastic seven blade fan that arrived in the early 1970s. The seven blade fan became standard for all cars from early 1974 until the



1977 model year change to electric fans. Interestingly because the new seven blade fan made more noise one export market had to revert to the three blade fan to get the car through their local noise restrictions.

Fans give few problems although the metal blade types have been known to lose blades due to metal fatigue and lost blades have been known to pass through the bonnet, so it follows that any doubt as to the condition of the fan should see it replaced with a new one or sound secondhand one ASAP. With MGB mechanical fans the general principle is 'more blades means greater airflow', which is accompanied by greater noise mentioned above, and in these times of greater stress on cooling systems there is a bonus in using one of the multi blade fans if you can live with the obvious fan noise.

With the range of different water pumps, pulleys, spacers and fans there needs to be some checking of the correct fitting and positioning of the fan relative to the engine, hoses and radiator as contact with any is clearly undesirable! One of the problems with the mechanical fan set up on the MGB is a need to keep the fan far enough away from the radiator so that during very heavy braking the engine doesn't come too far forward and cut through the core of the radiator. This would be a rare event, but more likely with old and softened engine/gearbox mounting rubbers.

For the first years of production a rubber bushed stay was attached between the gearbox mounting cross-member and a cast in 'eye' on the gearbox base. Then in 1965 MG introduced a pair of very simple 'L' shaped brackets that fitted over the top and rear of the engine mountings so that when the engine moved forward the bracket would only allow a small degree of movement before it comes into contact with the chassis welded part of the engine mounting to stop further movement. With the arrival of the rubber bumper cars the engine mountings changed, so MG returned to a variation of the original design with bar between the gearbox and gearbox cross-member.

Another problem with the mechanical fan set up is that whilst the fans are able to move significant volumes of air, and the six and seven blade fans more than the three blade version, the air that is moved doesn't all get drawn through the radiator. This is because the radiator core creates a resistance to airflow as part of the basic function of transferring heat from the radiator to the passing air.

Having to distance the fan from the radiator core to avoid the fan contacting the radiator under braking allows more air to be drawn from other areas, which of course means this air offers no radiator cooling service. Many other cars with mechanical fans operate with a cowl between the radiator and fan, including the MGC, which has the sole function of ensuring as much air as possible that is moved by the fan has to pass through the radiator and work for its living.

Unfortunately I have not seen any such cowl for an MGB, [Editor's note: here in the US, Moss Motors (and perhaps others) sell suitable cowls, see picture] which because the MGC had one seems to me that MG missed a trick here, but perhaps I am tainted by the growth of cooling issues that have occurred after mechanical fans were long replaced by electric.



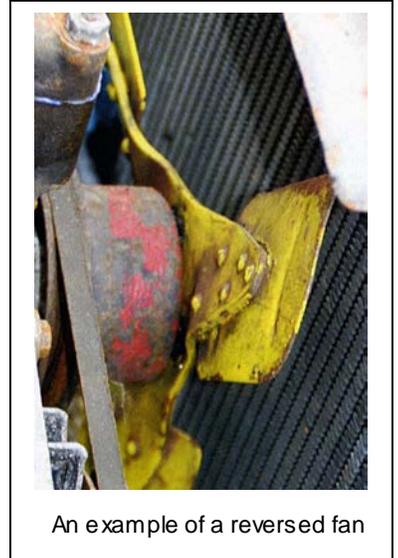
The age of all cars and usually many owners means that it is quite common to find cars that are not to the correct original specification and that will also have a variety of other issues. To illustrate this I did a 'straw poll' of eight MG Bs from 1962 to 1975 where the distance between fan and radiator varied between approximately $\frac{3}{8}$ " (10mm) and approx $1\frac{1}{4}$ " (32mm) between the front edge of the fan blades and the nearest part of the radiator, the top tank's edge. The average clearance on cars with a correct clearance was approx $\frac{1}{2}$ " (13mm).

Of very specific note is that one car had its three blade fan fitted the wrong way around, a quite common problem that is easy to do without realizing, and which doesn't immediately show in reduced cooling efficiency even though the fan is working less efficiently.

However, if the metal six blade fan were to be reversed then the leading edge cut outs in the blades would be in the wrong place and the trailing edge would become the leading edge and will most likely hit the radiator, which would be immediately noticeable!

Lastly the plastic fan has the deep dished side facing the radiator and if these fans are fitted in reverse you normally see the blades contact parts of the engine, unless someone has fitted an extra spacer to get clearance rather than stand back and give some more thought as to why this is happening!

Note that the mechanical fans turn clockwise when standing in front of the car looking at the engine. Look at the leading edge of the three blade metal fan and you see it has a curved edge; the leading edge is the one that cuts into the air. The six blade fans have a clear cut out on the leading edge, and the plastic fans have a subtle curvature down the length of the leading edge, whilst the trailing edge is almost straight. In addition all blades are curved and the concave side faces the engine. Fit the fans in the reverse position and aside from clearance problems their efficiency will be noticeably reduced.



An example of a reversed fan