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To the Editor,

ENGINE COOLING

25 October 1991

Ref. No. 3003

I recently visited a well known restorer of Austin Healeys who complained bitterly about the difficulty he was experiencing in trying to keep the water temperature down on a competition vehicle. A quick look under the bonnet revealed the cause of the problem was the complete lack of any baffling around the radiator. If restorers do not understand the problems involved I felt that I should explain our past findings on the subject.

In the late fifties we were investigating what appeared to be cooling problem in high ambient temperatures. We took over the paint shop and raised its temperature and put the car in it. We then measured the time it took for the engine to boil when idling. The time was very short. Testing a larger capacity radiator or larger fan produced little improvement. We then checked air circulation at many points around the radiator with an anemometer and found that the fan was drawing air through the radiator and that much of this heated air then moved round the sides of the radiator and was drawn through again. The use of smoke (a pipe will generate enough smoke) will make the circulation of air readily apparent. It was apparent that very little fresh air was being drawn through the grille at the front. We then experimented with baffles fitted to ensure that the air that had passed through the radiator could not get round to the front of it again. It was also found that air passing through the radiator could also return over the top and under the bottom of the radiator.

Suitable baffles at the side of Austin Healey radiators are often left off or bent away to ease radiator fitting and this causes a hot running engine.

MG workers often bent the baffles to speed production but Syd Enever managed to ensure that cars left the factory with correctly fitted baffles. Garages always bent baffles to ease radiator fitting. Fitting a larger fan without correcting the baffle fitting will only worsen engine heating. The cooling fan action causes the air pressure to rise in the engine bay and to decrease (pressure) in front of the radiator. Air then flows from the high to the low pressure region.

Before going to the expense of fitting larger fans or radiators or spending money with a specialist, ensure that your car has efficient baffling.

We rarely used fans on competition vehicles but relied on efficient ducting and baffling to make sure that the vehicle's forward motion generated sufficient air flow through the radiator. The very efficient ducting ensured that the last racing Sprites we built used very small radiators and raced in high ambients without any cooling problems.

Geoffrey Healey