

Rolls-Royce Owners' Club of Australia Library

Hot Stuff!

by Tony Ward, 2002

Overheating in older cars is a topic much discussed in our hot summer months. A few weeks ago, I unexpectedly had the opportunity to put some of my modifications to the Mark VI cooling department and gear ratios to a most severe test.

An invitation to a wedding in a family of very old friends on a Saturday evening in Armidale and back the following day necessitated some bush driving. I was advised to go by Bucketts Way, turning off the Pacific Highway before Karuah and heading for Gloucester and up Thunderbolt Way to Walcha and Armidale. "It will be quicker and shorter" they said!

Expressway conditions most of the way to the turn off allowed 110kph at 2500rpm in overdrive top with the engine temperature steady at 75° on a hot mid-morning. Most of the Bucketts way road is narrow, heavily patched with poor edging except around Ward's River where the standard improved (naturally!). By the time I reached Gloucester the atmospheric temperature was searing! Phone calls to the local newspaper and others since my return reveal that it was 37°C and even 41°C in some nearby areas.

Shortly after turning inland on to Thunderbolts Way, I crossed over a river and was confronted with a continuously steep mountain climb that seemed to go on forever. The engine temperature rose quickly to 100°C (red line) and I dropped back from third to second at a constant 3000rpm to let the fan pump as much air as possible. I wondered what might happen, as I have never driven the car under such severe conditions in about 40 years of ownership. The temperature was steady at 100°C. There were no sounds or signs of boiling or fuel vapour lock. A few cars were parked by the side of the road with bonnets raised and one was stuck in the centre of the road, but I managed to get around him after a short delay. On and on we climbed till eventually we reached the summit that was 1050 metres above sea level! The lookout with its incredible view down to the valley below was a welcome stop. Still no sign of steam except from my thermos from which I made tea.

The reasons for this performance are multiple: First, a clean engine with radiator core and pump in good condition. Second, the opening of the Mark VI grill vanes to double the air intake, although I think that this would be more efficient at higher speeds. Third, and by far the most important factor in these century engine temperatures, when it should have been

boiling, is the pressurisation of the cooling system. I undertook this modification before driving to Perth for the last Western Australian Federal Rally.

On the opposite side of the radiator tank from the large filler I had a hole cut and a neck installed to fit a spring-loaded valve cap such as one sees on many modern cars. They are available in various pounds per square inch ratings from about 2 upwards. I chose 7PSI, which means that my boiling temperature is now 111°C. Attached to the side of the neck below the cap is a tube leading to an overflow bottle. This takes the expanded solution where it is stored pending return to the system after it cools down. This is the same principle as is used in most modern cars. The old steam valve has been removed and a sealing washer screwed down into the cavity to prevent loss of fluid and pressure.

Nothing has been altered so much that it can't be restored if need be. Despite the constant high atmospheric temperature, the engine ran mostly at 80°-85°C with speeds of 100 - 110kph where possible (in overdrive) and climbing to well over 1000 metres (3000ft plus). I covered the journey in five and a half hours plus a twenty-minute stop at an average speed of 51mph and achieved 18MPG! Not at all bad for a fifty-two-year-old car!