A Thermostat Theory

by Tom Endy

The Model A Ford did not deliver with a thermostat installed in the water cooling system. A few years later thermostats became the norm in new cars. Today it is becoming common practice for Model A owners to install a thermostat in the water outlet hose of their Model A Ford. However, there may have been some engine block design changes made to accommodate the thermostat that does not exist in a Model A engine block.

Rick Hall, a Victoria Association member in Southern California, has come up with a theory about the use of a thermostat in a Model A Ford that may have some merit. Recently four of us in the same area, including Rick and myself, have had a recently rebuilt engine fail with dramatic consequences. The number four piston virtually melted, with the ones in front of it showing signs of overheating.

After much investigation and speculation we have come to the conclusion that the cause was due to the poor quality pistons that have recently been imported from Taiwan by two of the better perceived suppliers. However, there could be an additional factor involved.

In all four cases the failure modes were the same. The engines had a sufficient number of miles on them since rebuild; the cars were cruising along at 55-60 mph in 26% overdrive for about an hour or more with the ambient temperature at about 60 degrees. Each of the cars was equipped with a very efficient 4-tube radiator and with a 160 degree thermostat installed. Each had a temperature gauge that indicated that the water temperature was below 160 degree, which means the thermostat was closed blocking off the flow of water.

Rick's theory is that under these circumstances with the thermostat closed water in not circulating through the block normally. With the thermostat closed only a small amount of water is getting past the thermostat through the two small holes drilled into the mounting flange of the thermostat. The water pump is not causing water to flow through the block normally as when no thermostat is installed. This may be causing the back end of the engine block to overheat due to the lack of proper water circulation. The temperature gauge may be showing a value of less than 160 degrees at the water outlet hose, but the water temperature around the number four piston where the water is stagnant may be sufficiently higher allowing the number four piston to overheat and fail.

It may be that engine block designers of later cars provided by-pass ports in the block to allow a continuous flow of water to all parts of the block when the thermostat was closed. The Model A engine block may not have this advantage.

This may not be a problem on a warm day or with a standard radiator that is partially blocked as the temperature will quickly rise above 160 degrees and the thermostat will open allowing the water pump to freely circulate water to all areas of the block as Henry designed.

It may be just a theory, but it may have some merit. After experiencing a costly engine failure I decided to remove the thermostat from my Victoria. I can't see where it can do any harm, after all Henry produced over five million Model A's that roamed the planet for decades without a thermostat.



An automotive thermostat modified for use with a Model A. Note the skirt welded to the base to prevent it from tumbling in the water outlet hose. Two small holes are drilled into the base for a small amount of water flow when the thermostat is closed.