Lycoming 8 cylinder overheating problem.

Originally the water jacket (inspection plate) on the Lycoming eight-cylinder engine had a water distribution plate (baffle) that was welded to the back of the water jacket cover. If yours is missing (and most are after 100 years - rusted out and disbursed through the block and radiator!) the water pump discharge, being in the center of that cover, becomes focused instead of disbursed which means that most of the water only circulates past the front four cylinders. Your back cylinders are not getting the full benefit of the coolant. Today this is often missing and without it you may encounter overheating problems. Even if you don't experience issues with the baffle or overheating, it's important to be mindful of these potential problems and know how to address them.

The following is from the AACA blog.

Auburn inspection plate replacement

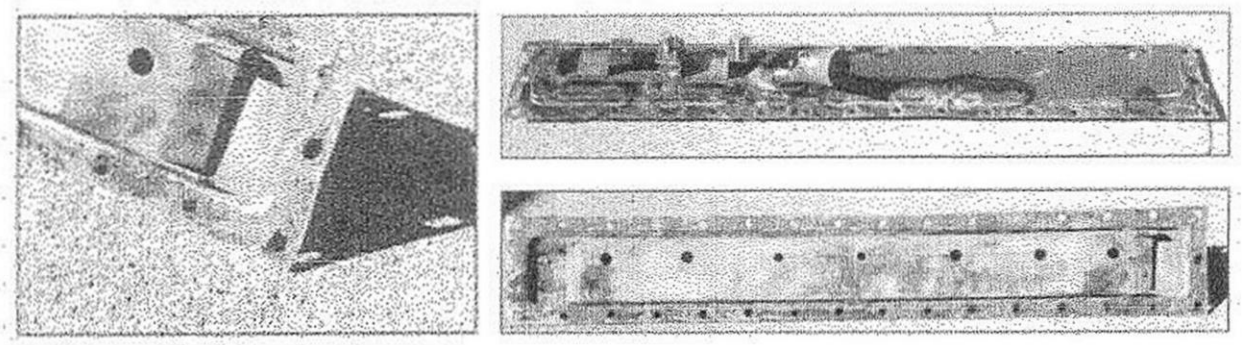
By Jack Randinelli

Over about a two-year period I had overheating problems with my 1932 8-100 Auburn cabriolet. I recored the radiator, checked the water pump, and flushed the block. None of this worked. Then on a shelf in the ACD Museum's Duesy Shop, of all places I found an inspection plate for a Cord L-29 engine. I noticed it had a baffle on the back which distributed the water more evenly across the engine. When I removed the water inlet cover from my car there was no baffle at all – just a pile of rusty debris.

Here are the photos and specs to show other club members who may have the same problem in overheating that I did. For my car it worked.

I had a new plate made with a new inlet pipe I made the entire cover out of stainless steel. I also made the baffle out of stainless. I decided to try to direct the water evenly throughout the length of the block. I made the two holes closest to the inlet pip 3/8 inch in diameter, since the incoming water pressure is higher here. The rest of the holes are ½ inch in diameter. Also, I did not completely close the ends. This allows water to reach both the front and rear of the block. The idea is to more evenly distribute the water throughout the entire engine.

Since I installed this in my Auburn it has run almost 15 degrees cooler. In talking with some "old timers" they indicated these baffles only lasted about three to five years and then rusted out, leaving debris in the water jacket. By making this out of stainless it should have a much longer life I have attached photos of the baffle and the back side of the inspection plate. I made a new gasket and purchased stainless steel screws (34 of them) to attach the plate to the engine block.



A side note, one of the hazards of running without the distribution plate in place is the the pump discharge may cause accelerated wear of the cylinder walls, see attached photo of how mine looks and it becomes evident where the discharge is right between #5+6. The increased wear caused by the point discharge and maybe some cavitation from running only water as coolant is substantial enough that one cylinder had to be sleeved.