

1965 Corvette: Engineering Service Letter: 1965 Corvette 350 H.P. Factory A/C Operating Temperatures

Subject: 1965 Corvette 350 H.P. Factory A/C Operating Temperatures

Model and Year: 1965 Corvette - 350 H.P Engine equipped with Factory A/C

Date: T.N. #7 - June 30, 1965

SECTION VI - ENGINE CONTINUED

MISCELLANEOUS

The following is an inquiry from Mr. Nick Pelster, Area Service Manager of the El Paso Zone, and my reply to his queries:

"I would like any available information on the approximate engine oil pressure and water temperature a '65 – 350 HP – air conditioned Corvette will run at at a given R.P.M.

I have an owner who has a Corvette who feels his unit should not run over 190° temperature with the air conditioning running. I have made every attempt to explain to this man that there is nothing wrong with his vehicle with no avail.

I have been told "Harrison" has a chart on the approximate satisfactory temperatures an engine should operate at."

MISCELLANEOUS – CONTINUED

"Reference your note on the above subject received in this office May6, 1965. We will deal, in this letter, primarily with the water temperature aspect

of your owner's complaint.

Plain water in the Albuquerque Area will boil at approximately 200°F and if we used on our Corvettes a non-pressurized system, then the 180°F temperature might be marginal; but we use on all Corvettes a 13# pressure cap and this 13 lbs. adds approximately 39°F to the boiling point of water, or we safely say that in the Corvette the water will not actually boil until the temperature reaches 240°F. Some cars, specifically Cadillac, use 18# pressure caps. This, of course, would raise the boiling point of the pressurized coolant to around 255°F.

We use a pressure system on all of our vehicles due to the fact that the greater the temperature differential between the ambient (air through which the car is being driven) and the temperature of the coolant, the faster the radiator can dissipate heat, and the real criteria in any case is – does the system lose coolant? So, with the coolant not being able to boil under 240°F then there should be no loss of coolant. It is perfectly safe for all of our engines to operate at any temperature short of actual loss of coolant. They have been designed that way.

A radiator coolant temperature of only 190°F is at or near the temperature that it will be controlled by the thermostat. Actually, our thermostats are not completely opened until the coolant temperature reaches 212°F. Furthermore, we would say that any engine should operate at least 190°F to be in the low end of the proper operating temperature. This is necessary to help drive off products of combustion that get past the piston and into the crankcase because as you know, the temperature of the complete engine will be approximately that of the coolant.

We certainly wouldn't recommend that anything be done to this unit to lower the temperature and can assure you that if 190°F is as high as this job ever gets, the owner is certainly in no difficulty. In fact, his engine is running on the cool side.

We have run extensive tests in the Phoenix Area, specifically with Arizona Public Service Company, and we had no difficulty whatsoever with engine temperatures running in the 220°F and 230°F range. This was in no way detrimental to the engines, nor was there any loss of coolant experienced.

Complete specifications on our cooling system are covered on Page 13 in the Power Train Section of our Engineering Specifications for the Corvette. If you will look on Page 12 of this section you will find specifications on oil pump pressures, etc.

If it is not uncommon for engine idle oil pressures to drop off to 5 to 10 psi with hot oil – that is, oil in the 200°F and above range."

(signed) Geo. W. King

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