



Ford T Tips



By Douglas Dachenbach

Gasoline and Coolant Choices

Gasoline:

Just put in the regular unleaded. There was no lead in the gas when that car was designed, so you needn't worry about that. Gas that sits around for a long time, like over winter or all summer can go bad. Gas goes bad for a couple reasons. Gasoline is a highly refined petroleum product and some of the most volatile parts will evaporate over time leaving the gas darkened and less explosive. Today most gasoline contains some percentage of ethanol which attracts water from the atmosphere. When this happens rust forms in the tank and carburetor bowl. If the T's gas tank was sealed with any kind of product some 20-odd years ago, the older sealers are susceptible to dissolving in the ethanol, which can result in old leaks re-opening, gunk being carried down the line and fouling up everything from the carburetor to the valve train and combustion chamber. Cork floats in the carburetors don't like ethanol either if they are sealed with shellac, which used to be the norm. There are ways to remedy all these situations but you want to be proactive not reactive on these items. Anytime the car is going to be inactive for a period of time such as over winter, drain the tank and use the gasoline in some other vehicle, don't store it. Using a product like Stabil will help but not cure the problem. Don't forget to drain the line and the carburetor as well

Coolant: Heat Transfer, Water vs Antifreeze vs WaterWetter:

The old question, what is better in my radiator? Here are some hard facts. First, the purpose of any coolant is to transfer heat away from inside of the engine head and keep the head temperature at a point that efficient combustion can occur. The measurement of any liquids ability to absorb heat is called the "Specific Heat Capacity". Water has a very high SHC and does a very good job of transferring heat away from the cylinder head. That said, water is corrosive, promotes rusts and eats away at the inside of your block. Run straight water in your Model T for the summer and then drain it and see the rust and deposits that come out. Is there a difference in the SHP between distilled water and tap water? Very little, but take a look at your shower head and see what is in tap water. Eliminating that from the inside of you engine is no doubt a good thing. Any coolant is going to boil inside the block against the cylinder walls. Pockets of steam form against the cylinder walls and steam, which is mostly space, is an excellent insulator, hence you will form hot spots where steam pockets develop.

What is the purpose of antifreeze? The name says a lot, it depresses the point at which water freezes and when water freeze, it expands. The formation of ice (expanded solid water) in your block equals a cracked block. The other function of antifreeze is to decrease the corrosive effects of water. It isn't uncommon to drain the antifreeze out after a year or two and still have clear green coolant. Here is the down side of antifreeze. A 50/50 mix of water and antifreeze cuts the Specific Heat Capacity of your coolant 50%. In other-wards, you need twice as much cooling capacity to get the same cooling effect as just water alone. A little offset on this is that antifreeze raises the boiling temperature so you don't boil over as easily. If you didn't have enough to worry about, read the paragraph below.

Information was published in the Auburn Cord Duesenberg Club (www.acdclub.org) Newsletter (LVII Number 8 2010) concerning the use of "extended life" antifreeze in cars over 10 years old (built before 2000). Under NO CIRCUMSTANCES should an "Extended Life" antifreeze, *which utilizes Organic Additive Technology (OAT, H-OAT, or N-OAT) as one of its chemicals*, ever be used in our cars over 10 years old. It attacks the gaskets and gasket cements in our cars, causing major leaks and forcing ultra-expensive repairs.



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The "Silver Ghost Association" Rolls Royce people have documented massive cooling system failures apparently caused by this anti-freeze product.

Antifreeze that can be used safely in our cars uses older-fashioned Inorganic Additive Technology (IAT) additive. You cannot tell by the color of the antifreeze if it's safe to use. Also, the product may be labeled "Safe for Older Cars"--meaning 10 years old at most. Brands to be AVOIDED are all Prestone lines and Zerex's G-05 in the Gold-color container. Avoid any "Extended-Life" or "Advanced formula" antifreeze. None of us wants to pull and rebuild our cars' engines. Acceptable brands are Peak, Peak's HD Product "Sierra," and Zerex Original Green in the WHITE container. There is an IAT antifreeze at AutoZone which is called AutoZone Conventional Green.



Model T cooling systems hold three gallons so you need two gallons of antifreeze to make a 50% antifreeze/water mixture (1.5 gallons antifreeze, 1.5 gallons water). This leaves enough for a mixed gallon in the trunk.

WaterWetter is an additive to your coolant that advertises that it will lower you engine temperatures which is a little misleading. I thought at first it actually increased the SHC of the coolant, but it doesn't to any significant degree. What it does do is it reduces the surface tension of the water and makes the steam pockets smaller. The surface contact area of the water on the cylinder heads is increased and hence more heat is transferred. The WaterWetter increases the boiling temperature of water a little. Pure WaterWetter has a boiling point of over 300°. When WaterWetter was added to a 50/50 mix of water and antifreeze, the heat transfer increased almost to that of pure water. With WaterWetter added to water alone, there was an improved transfer rate and hence a decrease of engine temperature of a few degrees. WaterWetter has some noncorrosive and lubricating properties in water but not as much as antifreeze.

Conclusions: In my T, I drained the gas this winter and put a little Stabil in the tank. Next year that last tank of gas may have a half cup of Marvel Mystery Oil in it and perhaps some in the oil during that last ride of the year. Tomorrow I will drain 3 gallon of antifreeze mix out of my radiator, haul it to the hazardous waste disposal site. I have already bought 2 gallons of IAT antifreeze and 2 gallons of distilled water. (I found "Peak Conventional Green Formula" and it says on the bottle, "For use in: Ford & Chrysler; 2000 & Earlier – GM; 1995 & Earlier – All Makes & Models; 1989 & Earlier".) I'm putting 1 ½ gallons of each in the radiator and put the last ½ gallon of distilled water in the last ½ gallon can of antifreeze and I'll mark it 50/50 mix thus I have my spare gallon for the trunk. There is always next year to get it right.

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