Fire Extinguishers and your Model A

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In the nine years I've been a member of the Shade Tree A's I know of two fires involving club members' Model As. In both instances the fire originated in the vicinity of the carburetor. Let's look at why.

We all know how easy it is to detect a gasoline leak by the smell. That is because gasoline readily evaporates at 45 degrees BELOW zero! To give you sense of how it flashes to a vapor here is a comparison of the flashpoint of gasoline and other common products:

Substance	Flash Point	Intended Use
Gasoline	-45 degrees F.	Fueling an engine ONLY
Acetone	-4 degrees F.	Nail polish remover, solvent
Turpentine	95 degrees F.	Paint thinner, brush cleaner
Mineral spirits	104 degrees F.	Paint thinner, brush cleaner
Charcoal lighter	160 degrees F.	Starter fluid for grills
Some mineral-oil	380 degrees F.	Multi-purpose remover/solvent products

Now gasoline will auto ignite at about 536 degrees F. So it essentially vaporizes itself and will auto ignite at less the 550 degrees F. So all you need is vapors and hot surface.

Now looking at Figure 1 you've got a carburetor an exhaust manifold in close proximity.



Figure 1: Model A Carburetor Arrangement

If the car backfires through the carburetor all the gasoline-air mixture that should be heading for the engine cylinders is now heading right for the exhaust manifold/muffler. Not a good situation. The good news is with reasonable timing the exhaust manifold and muffler shouldn't be above 550 degrees F. However, if you backfire through the carburetor your timing is probably out of whack and your manifold could be above 550 degrees F. OOPS.

That's why I carry a fire extinguisher in both my Model As.

Fire extinguishers are divided into four categories, based on different types of fires. Each fire extinguisher also has a numerical rating that serves as a guide for the amount of fire the extinguisher can handle. The higher the number, the more fire-fighting power. The following is a quick guide to help choose the right type of extinguisher.

Class A extinguishers are for ordinary combustible materials such as paper, wood, cardboard, and most plastics. The numerical rating on these types of extinguishers indicates the amount of media it holds and the amount of fire it can extinguish.

Class B fires involve flammable or combustible liquids such as gasoline, kerosene, grease and oil. The numerical rating for Class B extinguishers indicates the approximate number of square feet of fire it can extinguish.

Class C fires involve electrical equipment, such as appliances, wiring, circuit breakers and outlets. Never use water to extinguish Class C fires - the risk of electrical shock is far too great! Class C extinguishers do not have a numerical rating. The C classification means the extinguishing agent is non-conductive.

Class D fire extinguishers are commonly found in a chemical laboratory. They are for fires that involve combustible metals, such as magnesium, titanium, potassium and sodium. These types of extinguishers also have no numerical rating, nor are they given a multi-purpose rating – they are designed for Class D fires only.

So for a Model A the primary concern is getting a fire extinguisher that is Class B to extinguish flammable liquids. But because other things in the engine compartment may catch on fire an extinguisher rated for both Class A and B or for Class A, B and C is a good investment. Don't get a CO_2 extinguisher because they are only Class B and C and would be ineffective against burning paint or rubber. A fire extinguisher rated for Class A, B and C is most often a dry chemical powder which come in a variety of types and are suitable for a combination of **Class A, B and C fires**. These are filled with foam or powder and pressurized with nitrogen.