

## Ignition Engine Fuel for the 21<sup>st</sup> Century

*From SAMTalk via Charlie Reich-12 Apr 2009*

**Texaco Events:** There are two basic old-timer events. For the true old-timer events known as Texaco, a mixture of gas and oil is the common fuel used, the same as used in the first original ignition engines. A Texaco event allows a certain amount of fuel based on the overall weight of the model. The flight is launched and the engine runs until the fuel tank is empty. The longest flight wins the event. A gas-oil mix burns slower therefore the engine consumes less fuel, offering a longer engine run time, just what is required for a Texaco event.

Most original ignition engines, in the old days, used a blended mixture of 3 parts pure white gas to 1 part of 70-weight motor oil (3 to 1 mix). White gas is no longer available, and due to the various chemical compositions in modern gasoline blended for different climates, it may be necessary to experiment with different brands of local gas to find the best and longest running fuel. Use the lowest octane rated Regular blend of automobile gasoline.

70-weight motor oil is no longer readily available in local markets. You may be able to order a case of 70 weight Pennzoil aircraft grade oil through a local oil distributor. The stock # is 2579. Local airports may also be a source; however 60-weight oil is available through local Harley-Davidson motorcycle shops and is now commonly and successfully used in the old engines. Do not use any of the modern synthetic oils exclusively as they don't offer the proper lubrication for the old model engine metallurgy and bearings used. For the oil mix it is recommended to use either the 60W HD oil - or Klotz BeNOL 2-Stroke Racing Castor oil usually available at Japanese motorcycle shops.

In the old days many modelers used a 3 to 1 fuel mix of white gas and castor oil. Be aware that castor oil doesn't blend well with gasoline unless it has been polymerized; a sort of cooking process, which also de-gums and lowers the viscosity. SIG's Baker brand castor oil has not been polymerized. The label on the castor oil container will tell you if it mixes with both methanol and gasoline. Maxima brand Castor 927, and currently Klotz brand BeNOL 2-Stroke Racing Castor both blend with either gas or alky. Many of the Japanese motorcycle shops carry Klotz products. The Klotz products can also be ordered from Tower Hobbies, cataloged under Fuel & Fuel Accessories – After Run Oils.

Many modern day old-timer contest flyers use Coleman lantern Fuel, readily available in one-gallon cans at sports stores or Walmart's camping supply department Use the 60W Harley Davidson oil or polymerized castor oil in a 3 to 1 mix. The gasoline or Coleman fuel mixtures will not affect the old original engines plastic gas tank.

The above fuel blends are primarily used for Texaco events. These mixtures burn longer to a tank full (better gas mileage) than the following methanol based LER fuel blends

**LER (Limited Engine Run) Events:** LER events only require relatively short bursts of power. For this event, modern day competitors commonly use a fuel blend of straight Methanol and a lubricant in a 3 to 1 mixture. The Methanol adds a little more power boost and it runs cooler. This mixture burns faster than the original gas-oil mix; consequently FAI fuel uses more fuel per comparable flight time than a gas-oil mix,

Many SAM Champs contestants use FAI glow fuel (FAI fuel has no nitro added) for use in the LER (Limited engine run) events. Red Max brand is one suggested brand, as they will custom mix it for your ignition engine with a castor/synthetic oil blend. Be sure to specify that your FAI fuel contains at least 20% to 30% castor oil in the lubricant mixture. Some fliers mix their own fuel using a 3 to 1 mix of Methanol and Klotz KL-100 Super Techniplate Oil, which is a blend of 20% castor and the rest synthetic. Methanol is usually available in a small quantity from a local racecar driver or from a local racetrack pit crew. Be aware that the Methanol based fuels will melt the old/original plastic fuel tanks...a replacement metal fuel tank or modern glow fuel tank must be used.

If you fly a model with Methanol based fuel remember the covering material must be fuel proof. If you try this in an old silk and dope finished model the covering must be fuel proofed by applying a coat of Butyrate dope or a commercial modeling brand fuel proof clear product.

### **Tip**

If ignition engines are new to you, or you're just getting your old modeling fires rekindled here's a suggestion.

On a newly acquired ignition engine, mount it on a test block and install a glow plug...forget the ignition system for now. Obtain some of the aforementioned FAI fuel (don't use fuel with nitro added), and the proper fuel tank, and get the engine set up and running properly. Once you're comfortable with the starting and needle valve settings, now it's time to hook up the ignition system, add the Gas or Coleman fuel 3-1 mix and run her just like in the good old days.

Note: When you switch from FAI fuel to a gasoline mix, the needle setting needs to be slightly leaner.