



Mogas

A PARTIAL DROP-IN REPLACEMENT FOR 100LL

What is 'Mogas'

- ▶ Real name Autogas (High Octane/Race Fuel)
- ▶ Ethanol-free (this is important to prevent corrosion)
- ▶ Lead-free (this is critical)
- ▶ Estimated at \$1.40-\$2.00 less than 100LL
 - ▶ when offered in competition to 100LL
- ▶ 59,000 STCs between 1982 and 2012
- ▶ Aviation Fuel Club estimates that between 80 and 83% of current fleet of piston aircraft can use it
 - ▶ Safely
 - ▶ General Aviation News, [July 2012](#)

Why switch from 100LL ?

- ▶ 100LL contains 1.2-2g/gal of tetra ethyl lead (TEL)
 - ▶ Since January 2010 ... Used to be 4.5-7.5g/gal
 - ▶ Boosts octane/anti-knocking agent
 - ▶ Single supplier of TEL ... based in UK
- ▶ Recent Cosmos episode on lead in environment "A Grave Threat"
 - ▶ "Any amount of lead is toxic"
- ▶ 2011 Duke University Study
 - ▶ Proximity to airport => higher lead in children
- ▶ Aircraft are **THE** leading source of atmospheric lead emissions in US
- ▶ EPA due to rule in 2015 on an endangerment finding
 - ▶ [EPA Lead Emissions from Piston-Engine Aircraft](#)
- ▶ Automobiles transitioned from leaded gas starting in 1973
 - ▶ 100LL has 4X the lead of automotive leaded gas that was phased out

Can we use it here ?

- ▶ Fuel Island ready for additional fuel option
 - ▶ Estimate that a self-service fuel system costs \$40k
- ▶ In Europe 'Mogas' is estimated to be 50% of all fuel sold for piston aircraft
- ▶ We may be a (very) early adopter
 - ▶ Is there current demand/desire for the option
 - ▶ Possible political/environmental win to wean off 100LL
 - ▶ Might it encourage traffic TO KTRK ?
 - ▶ Recent Huffington Post article
 - ▶ Santa Monica
 - ▶ [Huffington Post Article](#)

Hold-ups

- ▶ Many (including FAA ?) are holding out for 100% drop-in replacement
 - ▶ Like 100 Octane fuel vs Mogas which is 91 - 93
 - ▶ But 100 Octane would be even more expensive than 100LL
 - ▶ Some engines can't use Mogas ... typically high-performance engines
- ▶ Is the energy density high enough for high altitude operations
 - ▶ I don't know !
- ▶ Each airplane requires an explicit STC before switching to Mogas
 - ▶ Some perceived and/or real issues such as vapor locks and ignition issues
- ▶ Not clear there are many outlets in California (or Nevada)
 - ▶ But it's standard (high octane) gas without ethanol added

Next Steps

- ▶ Contacted a distributor
- ▶ Options (5) ...
 - ▶ Direct staff to plan on offering Mogas ASAP
 - ▶ But \$40k may be beyond ACAT's reach
 - ▶ Get more info, query pilots, ..., and bring back to ACAT
 - ▶ Bounce up to the Board for a decision
 - ▶ Wait for an EPA ruling/Wait for the market to mature
 - ▶ Aviation has been on notice for decades on 100LL
 - ▶ Wait for FAA, wait for FAA, wait for FAA, wait for FAA, ...
 - ▶ Do nothing

Eno

