

## **Avgas Briefer AC20-24B**

1. *What is AC20-24B?*

An FAA protocol which defines how a fuel, lubricant, or fuel additive may qualify for STC approval for named aircraft/engine combinations.

2. *How does it apply to the avgas replacement situation?*

As with all STCs, the proposed replacement fuel will be vetted using this protocol. Aircraft/engine combos against which the protocol will be processed are first placed in the experimental category; the experience/testing is accomplished; if and when successful, the STC is awarded for the aircraft/engine combination.

3. *Will this substitute for ASTM standards approval?*

No. Award of an STC assures technical suitability of the fuel for that engine/airplane combination. It cannot assure non-technical characteristics such as economic viability.

4. *How will this process speed up the discovery and certification of a replacement fuel?*

This is a method for achieving certification on specific aircraft/engine combinations. These aircraft can then fly using the fuel on a much broader basis – ie, more airplanes; more time. The post-STC experience is expected to convince refiners/distributors that the fuel is economically viable – the initial award of an STC demonstrates that the fuel works on an engine.

5. *Is there another approach?*

Yes. Keep the test airplanes in experimental category and wait for the ASTM specification and approval process to complete. But ASTM meets only twice per year and the approval process could take a very long time. So experience expansion would wait until ASTM finished its effort.

6. *How long will it take to obtain STC approval using the AC20-24B process?*

Unknown. The FAA could change players midstream; the FAA could change the data requirements midstream; the data may show problems..... Or, it could be completed in less than a year if everyone cooperates, if the process is sufficiently detailed, and the data is compelling.

7. *Will either GAMI or Swift gain a relative advantage over the other if this process is used?*

Probably not. Swift is further along in the ASTM approval process. Swift has an agreement with Embry-Riddle which has a portion of its fleet flying the Swift fuel experimentally; GAMI has a number of Cirrus and certain Bonanzas it is flying experimentally.

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## AC20-24B

### Goal:

Influence FAA to approve and emphasize the AC20-24B STC-based process

### Message:

The FAA needs to actively promote the AC20-24B STC-based process in the demonstration and qualification of a replacement fuel for 100LL.

### Story:

1. Any aircraft engine over approximately 230 hp requires the detonation margin provided by a near 100 octane fuel.
2. These are mostly engines with 8.5:1 or greater compression ratios and/or turbocharged
3. Tetraethyl lead {TEL}, a fuel additive, provides the octane boost to 94UL to create 100LL.
4. TEL is an extremely toxic substance.
5. EPA has issued an Advance Notice of Rulemaking to remove TEL from aviation fuel over the next ten years.
6. EPA will prevail.
7. *A replacement fuel has not been identified.*
8. The aviation industry and the FAA have known of this problem for 30+ years.
9. *A replacement fuel has not been identified.*
10. The uncertainty is badly hurting the GA industry. Owners and operators are reluctant to make overhaul and upgrade plans. Engine manufacturers need to make plans for future engines, and cannot rely on the availability of a high octane fuel. Time is short!
11. Two replacement fuels are undergoing testing.
12. Refiners and distributors will not agree to produce these fuels until they are convinced these fuels will succeed – both in airplanes and economically.
13. AC20-24B is an STC-based process that would permit these replacement fuels to demonstrate their efficacy.
14. The FAA is providing – at best – lukewarm support to the use of AC20-24B.
15. Without this process, acceptance of a replacement fuel will take much longer.

### Campaign Button:

