

ABS Attends Demonstration of GAMI's G100UL

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Future Fuels: GAMI's G100UL

ABS Executive Director Tom Turner and Board Technical Committee Chairman Tom Rosen traveled July 14th to Ada, Oklahoma, for a detailed briefing on GAMI's proposed G100UL fuel. G100UL is designed to provide the same detonation margins as 100LL but without harmful substances like lead. The demonstration was originally scheduled specifically for ABS, but grew into a larger industry event, with Teledyne Continental Motors chief engineer Bill Brogdon, Twin Cessna Flyer technical advisors Tony Saxton and Tim Meyer, Cirrus co-founder Alan Klapmeier, and volunteer ABS Future Fuels Member Advisory Committee member John Whitehead participating.

After a short facility tour the group spent roughly two hours in the control room of GAMI's engine test cell with George Braly (GAMI's lead engineer). Braly explained fuels performance at length, then led a real-time demonstration of detonation performance of G100UL, the standard "FBO-quality" 100LL fuel (which measures at about 102 octane), and a minimum specification, or "min-spec" 100LL, representative of a "worst case" 100LL formulation. Min-spec 100LL does not usually get into the distribution network, but is used as a certification standard fuel. It tests at just over 100 octane.

Tests were run on a turbonormalized IO-550N engine as installed on the Cirrus SR22, boosted for purposes of the tests to about 350 hp. The version of G100UL fuel used for the demonstration is a "middle of the road" G100UL fuel. Braly explained it is rated on the laboratory engine at about 98.5 octane, but has better detonation margins on the full scale aircraft engine than min-spec 100LL but not quite as good as FBO 100LL—"about 60% above min-spec," according to Braly. That was consistent with the engine run we observed.

The test demonstration was followed by a board room presentation on fuels formulation and discussion of the approvals process. We were joined by GAMI president Tim Roehl. Using lab analysis of 100LL samples Braly demonstrated there is a wide variance in the chemicals used to create existing 100LL—the argument the specific 100LL formulation is precisely controlled does not hold up. Braly clarified GAMI's strategy of pursuing a dual track of ASTM certification of its fuel specification and an STC for turbonormalized Bonanzas and Cirrus SR22s. With an approved STC in place and a small number of airplanes actively flying with G100UL ("30 to 50 airplanes," obtaining fuel at Ada and perhaps one or two other locations with high concentrations of turbonormalized SR22s, says Braly), fuels manufacturers could develop a confidence that the product works and has a market. No fuel firm will commit to production without this confidence, says Braly. And without production, obtaining STCs for additional airplane and engine types is pointless.

GAMI dispelled a fairly widespread view it was trying to "short-cut" the approvals process based on its earlier public statements it is pursuing STCs to get airplanes to "generate data" on flying with G100UL. GAMI has proposed to the FAA that it be allowed to follow the long standing FAA Advisory Circular AC 20-24B to obtain an STC for a new fuel, a process other firms have used to earn STCs for alternative fuels in the past. GAMI asserts, however, that the FAA has put up roadblocks to prevent GAMI from beginning the 20-24B process. All in the room agreed that all firms seeking a replacement for 100LL fuel should have an equal opportunity to attempt certification as detailed in 20-24B.

What can ABS do? Braly suggests owners groups continue to put pressure on senior FAA officials to ensure that the 20-24B process (as written and as used in prior STC approvals) is available to all firms seeking a 100LL replacement, including continued long-term work with

AOPA and EAA. In the short term he recommends presenting an organized front to FAA Administrator Randy Babbitt during his Meet the Administrator forum at EAA AirVenture.

Watch ABS NEWS and ABS Hangar Flying for updates and add your comments on the issue of future fuels.