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C3Or3B-01: LH2 testing of GTL's ultra-lightweight composite dewar-tank

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GTL is currently developing and validating a series of ultra-lightweight composite dewar tanks for liquid hydrogen (LH2) powered aircraft. These all-composite, vacuum-jacketed, dewar-tanks can achieve hydrogen weight fractions in the 60% to 80% range including composite dewar shell, multilayer insulation, and inner tank, which allows them to carry 10 times the hydrogen as conventional hydrogen storage systems. This performance breakthrough offers the means to revolutionize the aviation industry with extended range, reduced operating cost, and elimination of carbon emissions.
GTL has fabricated two developmental prototype composite dewar-tanks and is testing them with liquid hydrogen. This paper will summarize the LH2 testing of these prototypes. The paper will also describe the development of GTL's in-house LH2 test capability and related test systems.

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