

**P**ROVIDING WARBIRDS with engines built to the standard of the meticulously restored warbirds they power is a demanding endeavor. Particularly since the supplies of useable “New Old Stock” parts have been depleted to the point where some builders are going through their discards piles to find parts. One builder who has confronted the situation head-on is Bud Wheeler’s Allison Competition Engines (ACE Allisons) of Latrobe, Pennsylvania. He has developed, and obtained FAA approval for a number of critical engine parts for the Allison V-1710 that brings the engine and its performance up to the demanding standards of today’s warbird operators.

**ACE Allisons**

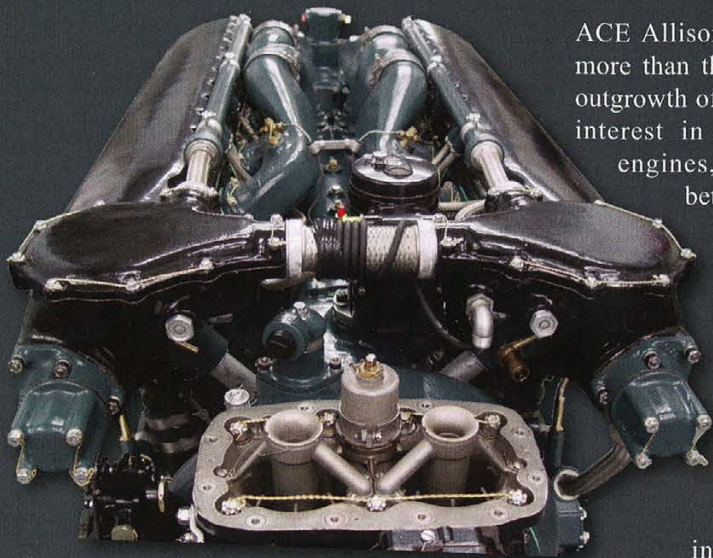
# **V-1710**

The

**with a  
Difference**

Story by **Dan Whitney**

*Photo: Xavier Meal*



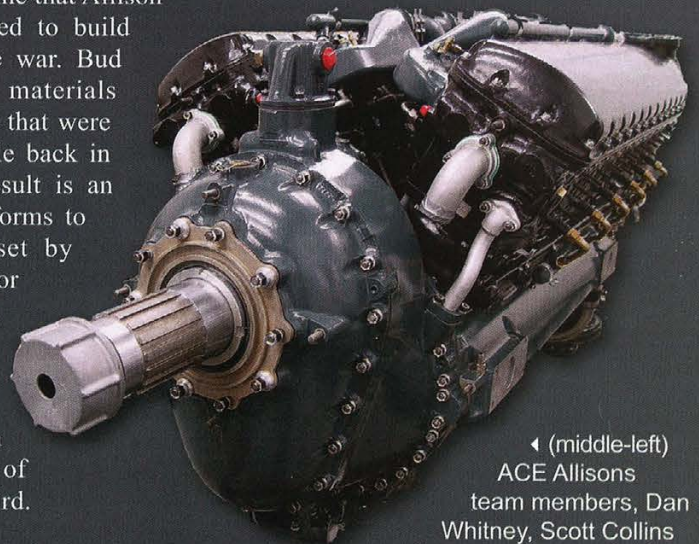
ACE Allison's has been building V-1710s for more than thirty years. The enterprise was the outgrowth of company president Bud Wheeler's interest in building improved competition engines, mostly for tractor pulling. To

better understand what was possible when pushing the V-1710 to previously unheard of levels of performance, he built a test stand and systematically developed single, two-staged and turbo-supercharged Allison's running on both gasoline and methanol. The rapid accumulation of experience on all aspects of the durable Allison led him

into the business of providing the best possible V-1710 to the warbird community. Bud hasn't built a tractor engine for 25 years, and the engines he builds today are not of the "souped-up" variety, rather they are the engine that Allison would have liked to build back during the war. Bud is able to use materials and components that were just not available back in the day. The result is an engine that performs to the standards set by the U.S. Army for the V-1710, but which is much more durable and appropriate for operating in the environment of the typical warbird.

◀ (top-left) View from the rear-top of the V-1710-39 engine showing the interrupter style distributors, the magneto and carburetor intake.  
*Photo: Dan Whitney*

▼ (middle-right) The V-1710-39 engine for Ron Fagen's P-40E *Desert Shark*. All visible aspects of the engine are period correct, the ACE Allison's FAA Approved improvements are in the internal parts and are focused on durability and reliability. Power ratings and operation remain as described in the original Allison and Army technical materials.  
*Photo: Dan Whitney*



◀ (middle-left) ACE Allison's team members, Dan Whitney, Scott Collins and Bud Wheeler after a flight in the EAA Ford Tri-Motor at Oshkosh 2013.  
*Photo: Dan Whitney*

ACE Allison's early work on warbirds was mostly in support of "Experimental" class airplanes; he was the builder of most of the engines that went into the new production Yak-3s and Yak-9s for example. When he began working on engines for "Limited" class airplanes he realized the need to obtain a Powerplant Mechanics certificate, which he did in 1998. He then undertook a program to obtain FAA design approval on new and repaired parts he desired to offer and incorporate into engines he was building.

The first of these, for modified Allison pistons with a revised ring-pack and running in cylinders that were chrome plated back to original bore diameter, was received in 2006. By 2012 a total of 11 approvals had been issued, and in early 2014 another seven were approved.

◀ (bottom) V-1710-39(F3R) rear view shows the period correct and unique "interrupter" style ignition distributors, the early ignition harnesses, and the Manifold Pressure Regulator, set for a maximum of 52 inHgA.  
*Photo: Dan Whitney*

