

# EI Shot Peening Training at AirVenture

**DAVE BARKLEY**, Electronics Inc. Shot Peening Training Director and FAA Safety Team Member, was asked to speak at the 2016 EAA AirVenture. EAA stands for Experimental Aircraft Association and the organization describes itself as “a community of passionate aviation enthusiasts that promotes and supports recreational flying.”

AirVenture is an annual summer convention at Wittman Regional Airport in Oshkosh, Wisconsin. Deemed the “World’s Greatest Aviation Celebration,” warbirds, vintage planes, homebuilts and ultralights are on display at the event that attracts over 500,000 aircraft enthusiasts. In addition to displays and air shows, the FAA conducts training along with EAA’s forums and demonstrations. And that’s where Dave came in. He gave a presentation to recreational aircraft builders and mechanics on how shot peening can reduce fatigue cracking of custom-made aircraft parts.

“Two aspects of shot peening especially interested my audience,” said Dave. “First, they wanted to know why shot peening should be done after corrosion removal, even if the part hadn’t been shot peened before. They were also interested in rotary-flap peening because it’s a viable way for a small shop to shot peen.”

Shot peening was new to most of the participants and Dave predicts some will explore it further. “One gentleman stayed after the presentation and took notes while I explained

concepts like saturation curves. He said he plans to bring shot peening into his shop and will attend the US workshop in Indianapolis this fall,” added Dave.

Dave’s presentation at AirVenture was not his first meeting with the EAA. He made a presentation to EAA Chapter 790 in Lake in the Hills, Illinois earlier this year. The following comments are from Mike Perkins, EAA Technical Counselor and Flight Advisor.

*“Dave’s presentation to our EAA group was eye-opening because fatigue failures are always on the mind of amateur-aircraft builders and kit-plane manufacturers—turbulence, landing-cycles, and engine vibration take their toll. Strength is not an issue because when a part is new, it’s adequate with a good margin. Rather, it’s an issue of durability—how does it hold up against vibration and load-flexing. But little has been done in the kit-plane world to solve cracking problems in parts that are highly stressed. Instead, the durability answer most often is to simply compensate by over-designing, which quickly leads to weight problems or a need to over-inspect and learn what to fix from failure statistics.*

*We learned from Dave that the durability of a part can be maintained better over the aircraft’s lifetime by shot peening, and he showed us with a practical demonstration on-the-spot of how it can be done—peening equipment, parts, microscope, and all.” ●*



*The Lockheed C-5 Galaxy military transport, among the largest aircraft in the world, was one of the thousands of aircraft on display at AirVenture.*