

Bearhawk #164 “Three Sigma” Checkout Report

Date: 23 Feb 08

Objective: Measure landing gear tread

Background: The Engineering Change Notice in the July-Aug-Sept 2005 Bear-Tracks states “...the tread of the aircraft (72”) as shown on Drawing #23 does not exceed 74” center of tire to center of tire, at your aircraft’s gross weight.” This became an issue when the specified rod end bearing for the shock strut was changed and the new rod end bearing added about 1/4” to the overall length, which limited the ability to shorten the shock strut. The shock strut was sized for a 1” spring compression with the old rod end bearing. The Engineering Change in the July 2004 Bear-Tracks changed the spring compression to 1.38”. It is suspected that this was to account for higher gross weights than the prototype. Both of these changes point toward the possibility of the shock strut being too long, resulting in an excessively wide tread and improper wheel camber.

Procedure: Roll aircraft forward and backward to allow landing gear to stabilize in a position with no side loads on the tires. Measure distance center of tire to center of tire.

Results: Distance center of tire to center of tire was 70.5 inches, less than the design tread of 72 inches, and less than the maximum of 74 inches. However, the aircraft was not at gross weight. The configuration was empty with assorted parts and materials inside, with boot cowl, cowling, and three doors removed. The fuel tank covers were removed. The propeller was installed.

Conclusions: Landing gear tread is not excessive. Margin exists for an increase of weight.

Recommendations: The tread should be remeasured at gross weight.