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## Mustang II & Midget Mustang Service Bulletin

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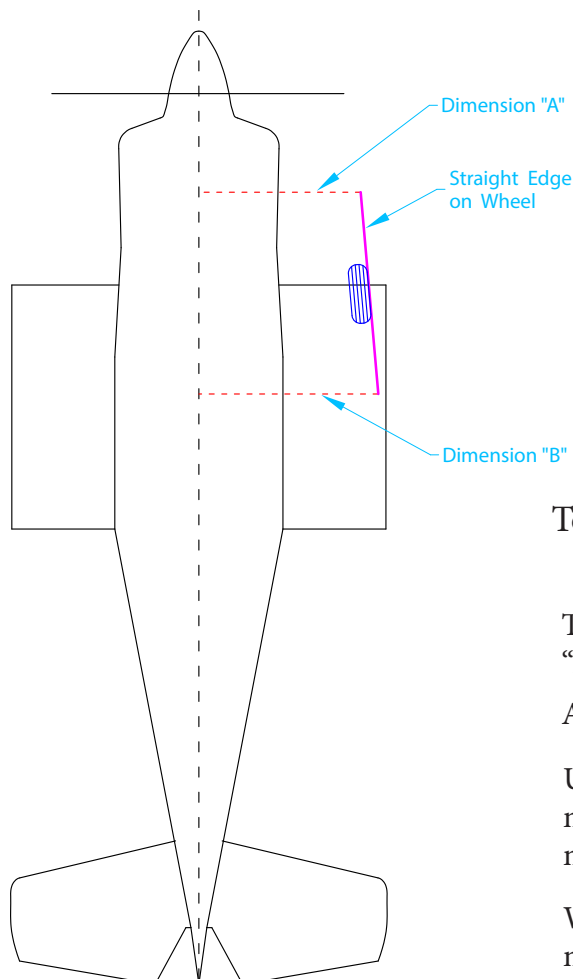
Subject: Checking for Correct Wheel Alignment

Good ground handling of the conventional landing gear (tail dragger) version of the Mustangs is dependent upon proper wheel alignment. There should absolutely be no wheel “toe out” with a desired angle of 0 to 2 degrees “toe in”.

To check the wheel alignment the following procedure can be used:

On the bottom of the aircraft, drop a plumb bob from the center (widthwise) of the firewall tunnel to the ground and make a mark on the pavement.

Drop a plumb bob from the center of the forward tailwheel attach bolt after verifying it is close to being on the centerline (widthwise) of the airplane. Put a mark on the pavement.



Using a chalk line, snap an aircraft centerline on the pavement between the two marks.

Using a long straight edge (4 feet or so, longer is better) hold it against the wheel close to its center on the out-board side as shown in the sketch.

Measure perpendicularly from the aircraft centerline to the end of the straight edge on both ends to get Dimensions “A” and “B” as shown in the sketch.

$$\text{Toe In} = \text{Sin}^{-1} \left( \frac{\text{Dimension "B"} - \text{Dimension "A"}}{\text{Length of Straight Edge}} \right)$$

This is also called the “ArcSin”. A Google search such as: “*ArcSin .05 in degrees*” will give an answer.

A negative “Toe In” value will mean it is actually Toe Out

Up to 2 degrees of axle shims can be used. If there needs to be more than 2 degrees of correction, the gear leg will need to be modified.

Wheel Camber (vertical tilt) misalignment does not have much effect on ground handling, just tire wear.