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Data on C-106A wing static test, 1943

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TITLE Static Test on Wing

PREPARED BY DJA DATE 10/26/43

CHECKED BY JHG DATE 11/2/43

CESSNA AIRCRAFT CO.
WICHITA, KANSAS

PAGE 1

REPORT NO. 302

MODEL C-106A

Static Test of C-106A Wing

Object -

To determine the ultimate strength of the C-106A wing panel under HAA loading.

Place and Date of Test -

This test was conducted on September 11, 1943, in the Experimental Laboratories of the Cessna Aircraft Company.

Procedure -

(1) Test Specimen

The specimen used in this test was made to conform with production drawing 022000-00 with the exception that the contour of the wing differs by an average of $3/16$ " from the production model. This discrepancy is due to the fact that in the original layout of the wing contours, the variation of the skin thickness was neglected. This makes the test wing slightly larger than the production wing, but the discrepancy was not considered in this test. The left wing without aileron or flap was used for the test.

(2) Test Set-up and Test Conditions

The wing was mounted inverted as shown in the sketch on page 5 and in the photograph, page 24, with the chord plane making an angle of $11\frac{1}{2}$ degrees with the horizontal to give the correct beam and chord loading. (Ref. Report 301, Page 65) Hydraulic jacks were used to support the wing while the loads were being applied and a single jack was used to apply the nacelle load. (Ref. photograph, pages 25-29) This position simulates Condition I while gives the greatest wing bending load. Deflection gauges were placed at intervals along the wing as shown in the sketch, page 9, and strain gauges were placed along the