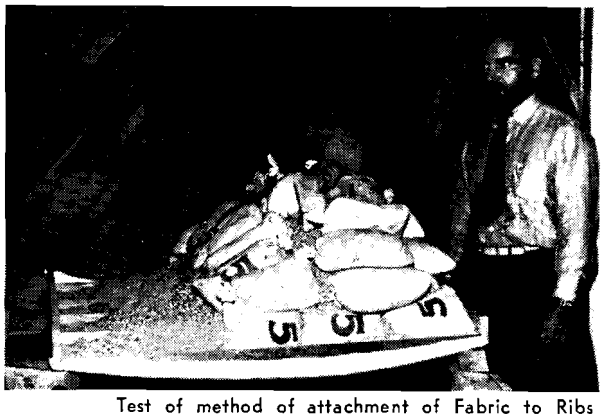
STATIC Testing



Test of method of attachment of Fabric to Ribs

Test of Flight Loads on Tail Surfaces

By courtesy of the Briegleb Aircraft Company, we are able to print a description of the static testing of part of the Briegleb B.G.-6 utility for the C. A. A. airworthiness certificate. The following article on the test of the tail surfaces and method of attaching the fabric does not cover the complete test, but contains all of the typical data, and illustrates the required procedure.

First, let us consider the tail surfaces. A statement of the general procedure is given, followed by tables giving the actual results. These statements of procedure and the forms on which the results are recorded are made up by the builder, but must be approved by the C. A. A. before the tests are made. This is to guard against loss of time due to tests that do not give sufficient proof of airworthiness.

The following is the procedure for testing the elevators, stabilizer, rudder, fin, and ailerons:

METHOD OF PROCEDURE FOR ELEVATORS, STABILIZERS, RUDDER, & AILERONS

ELEVATORS: The Elevator Horn was blocked up by a block of wood and a steel plate. Stations were marked in critical places around the elevator and on critical points of the fueslage. A plumb-bob was dropped from each station and the corresponding point marked on the cement floor. The distance from the corresponding points on the elevators to those on the floor were then read. The elevators were then loaded as in CAR 05.35 and ACM 04.313 with a load of 12#/sq. ft., and the same distances measured again. The loads were removed and the measurements were again taken. The result was very little deflection when loaded and no permanent set. (See following pages for test data.)

STABILIZER: Procedure same as above and at same time. No permanent set.

LOAD ON RUDDER: Procedure same as above. No permanent set.

LOADS ON AILERONS: Procedure same as above. No permanent set.

Witnessed by .....
Civil Aeronautics Authority.

Next is given the form in which the test data was recorded. Only the results of the elevator and stabilizer test are given since the others are quite similar to these.

DOWN LOAD, STABILIZER

Load Applied 59# } (Each)
Load Required 54# }

Station	*Original Dist. to Floor*	*Loaded Dist. to Floor*	*Unloaded Dist. to Floor*
1	39 5/8"	39 1/2"	39 19/32"
2	40"	39 11/16"	40"
3	40 1/8"	39 5/8"	40 1/8"

ELEVATORS

Load Applied 45# } (Each)
Load Required 42# }

4	40 1/8"	39 5/8"	40 1/8"
5	40 5/32"	39 19/32"	40 1/8"
6	38 3/8"	38 1/8"	38 3/8"

Witnessed by .....
Civil Aeronautics Authority.

The entire report on the test of the control system follows:

ELEVATOR CONTROL SYSTEM

LOAD ON CONTROLS: Elevator Control System tested by scales on control stick and loading elevator horn until 150# was read on scales on control stick. Deflection was 2"—There was no permanent set.

RUDDER CONTROL SYSTEM

Rudder Control System tested by putting weights on lever connection with rudded cable at horn and blocking rudder pedal. Weights were added until 200# was registered. There was no deflection or permanent set.

AILERON CONTROL SYSTEM

The Aileron Control System tested by putting scales on Control stick and loading ailerons until 60# was read on the scales on the Control Stick. Deflection was 1" and there was no permanent set.

Witnessed by .....
Civil Aeronautics Authority.

CONTROL SYSTEM OPERATION TESTS

The Control System was loaded to one-half of the required loads (See Above) and tested. The operation was smooth. Witnessed by .....
Civil Aeronautics Authority.

The last report covers the method of attaching the fabric to the ribs.

(*Continued on page* 13)