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Confidential Level	Public

Strength Test Report

Propeller Model# S72CB

Doc#：Sterna-BG003

5 pages

Sterna Aircraft LLC.

Approved by: _____ Date: _____

Signature		Date	Signature		Date	Signature		Date
Designed by		Sep.30, 2016						
Revised by		Sep.30, 2016						

Sent to whom concerned							
Name	Qty.	Name	Qty.	Name	Qty.	Name	Qty.

Contents

Strength Test Report

Propeller Model# S72CB

1 Intention

Entrusted by Sterna Aircraft LLC. (hereinafter referred to as Sterna), we did the static strength test on the propeller sample provided by Sterna (propeller model# S72CBMREG01) according to the requirements and standard in ASTM F2506-13 to prove if the strength of its structure meets the requirements.

2 Scope

This document only applies to the issues related to the static strength test for the propeller entrusted by Sterna Aircraft LLC. (propeller model# S72CBMREG01)

This document does not apply to any of other tests for other projects.

3 Reference document

ASTM F2506-13 Standard Specification for Design and Testing of Fixed-Pitch or Ground Adjustable Light Sport Aircraft Propellers

4 Test time and place

a) Test time and items:

The static loading tests on the propeller tested on August 1, 2016

b) Organization: Shenyang Aerospace University

5 Propeller tested

The tested propeller is provided by Sterna and Sterna is responsible for the related factory inspection work. Please see FIG. 1, the tested blade,

FIG. 1 Propeller model# S72CBMREG01

6 Loading method

To fix the blade root and blade with the fixture as shown in FIG. 2, loading 50KN force to the fixture and keeping it in this condition for 60 min. The force is loading at the position of the corresponding center point and the load acted by the force onto the blade root and blade through the fixture, see FIG. 3. The fixture and loading toolings are made by Sterna and they must have enough rigidity.

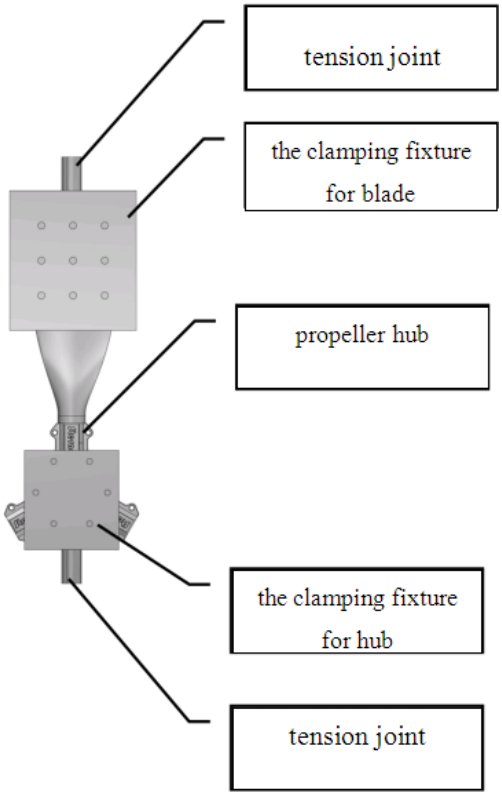

FIG. 2 Load method for the tested part

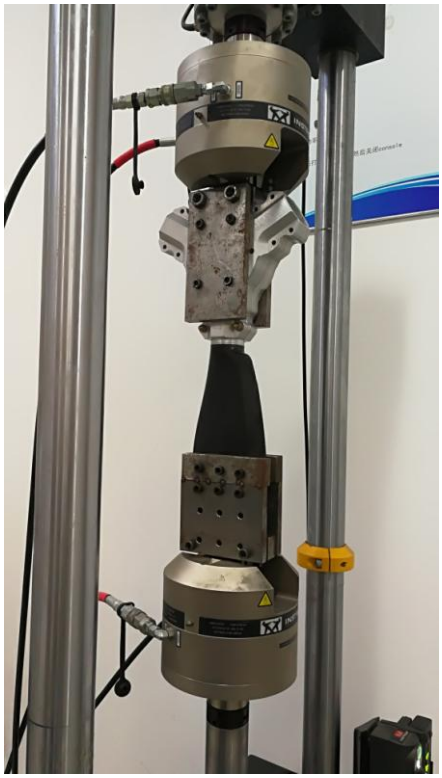

FIG. 3 The tested blade

7 Testing Equipments

Table 1 Testing Equipment

No.	Equipment	Model#	Remark
1	Tensile testing machine	Instron 8801	Qualified after inspections

8 Test result

The static test is carried out under 50KN load and maintained for 60min then unload, the loading curve displayed on the tensile testing machine is shown as in FIG. 4.

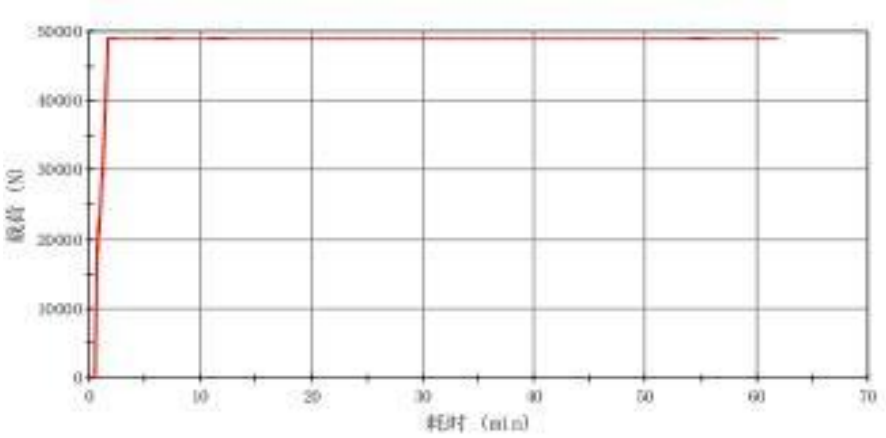

FIG. 4 Static test loading curve

In the test, no damage or abnormal thing occurs in the blade root and the blade. After complete disassembling and inspections, no damage or cracks was found on the propeller. This proves the tested blade meets the requirements of strength and rigidity under the condition of 50KN load and maintain for 60min.

9 Analysis and conclusion of the test result

9.1 Analysis of the test result

To analyze according to the test datas, the load value for the static test is within the error range allowed and the test datas are real and effective.

9.2 Conclusion of the test

Inspected the tested blade after the test, no cracks or damage was found or any permanent deformation occurred. This proves the propeller (Model#：S72CB) meets the requirement of strength and rigidity under 50KN load and maintain for 60min.

10. Picture about the test

FIG. 5 Strength test