

	<b>Safety Alert</b>	
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	Date of Initial Publication: <b>11-Aug-2010</b> Publication Date of this Revision: <b>11-Aug-2010</b>	

# SAFETY ALERT

## Temporary Airspeed Limitation CTSW SA-LTUL-CTSW-04

### Repeating Symbols:

Please pay attention to the following symbols throughout this document emphasizing particular information.

- ▲ **Warning:** Identifies an instruction, which if not followed may cause serious injury or even death.
- **Caution:** Denotes an instruction which if not followed, may severely damage the aircraft or could lead to suspension of warranty.
- **Note:** Information useful for better handling.

## 1 Planning Information

### 1.1. Affected Aircraft

Type: CT  
 Model: CTSW 2006  
 Serial Number: All aircraft equipped with stabilizer built using Aramide fibers for the stabilizer skin (includes all Ultralight certified aircraft), and equipped with long (full span) Trimtab attached to the Stabilizer.  
 Applicable Countries: All where aircraft are operated as Ultralight version (472,5 kg MTOW)

### 1.2. Concurrent Documents

- none -

### 1.3. Reason

One CTSW was operated outside the allowed speed range, in combination with too high control surface deflection. The aircraft experienced a structural failure of the stabilizer in flight. The aircraft could continue its flight and land safely. GPS log documented the speed exceeding Vne at the moment of the failure. Accidentally taken video provides noises that could be interpreted as flutter, just prior to the stabilizer failure.

Following its repair, the aircraft exhibited trim tab flutter in the high speed range. The flutter stopped immediately when the speed was reduced and did not cause follow-up problems. It is considered that this is a follow-up of the foregone overloading of the aircraft. To identify the problem, the aircraft was sent immediately to undergo ground vibration testing.

While conducting the ground vibration test, two more aircraft reported occurrences with trim tab vibration. Analysis of these two aircraft is ongoing. Those two aircraft are of the same design and construction than the first aircraft.

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#### 1.4. Subject

Following the reporting of the two additional aircraft, as a precautionary measure, Flight Design mandates a temporary limitation of the never-exceed speed to CTSW aircraft of identical construction.

A different test institution than used for the initial certification of the CTSW aircraft was selected to conduct the Ground Vibration Test. This is done to exclude systematic mistakes resulting from the test method and process. The selected institution is utilizing actual test equipment and methods. The test institution is verified by EASA for certification testing.

Analysis for reasons is still ongoing. As long as the analysis is not completed, possibly required remedies cannot yet be defined. Therefore this Safety Alert is issued for the safety of the pilots.

The limitation is based upon the recommendation of the consulted Flutter expert doing the Ground Vibration Test. It is selected to provide adequate safety and is not linked to results of the new ground vibration test, as the analysis is not finished.

To avoid misunderstanding and difficulties in the interpretation, please consider the following information:

- CT Supralight has significant differences in design compared to CTSW with full span trimtab. CT Supralight did undergo a complete ground vibration testing at the new test institution in 2009. The aircraft design has been verified to be free from flutter. Therefore, CT Supralight is not affected.
- CTSW aircraft with short trim tab (for example all aircraft delivered to UK) are identical to the newly tested CT Supralight. Therefore, CTSW with short trimtab is not affected.
- CT models preceding CTSW are directly comparable to CTSW with short trim tab. Therefore, CT models preceding CTSW (CT2k, CT) are not affected.
- CTSW aircraft delivered as LSA aircraft (600 kg) are equipped with stabilizers built from significantly stiffer carbon fiber fabric instead of the Aramide fabric used on the more weight sensitive Ultralight aircraft. The increased stiffness of this version shifts flutter limits to higher airspeeds. In addition the Vne of LSA aircraft is below the Vne of the Ultralight version. Therefore CTSW LSA aircraft are not affected.
- CTLS aircraft are of completely different design in the questionable area. CTLS did undergo a complete ground vibration testing at the new test institution in 2007. The aircraft design has been verified to be free from flutter. Therefore, CTLS is not affected.

#### 1.5. Compliance

Compliance must be demonstrated prior to next flight.

**▲Warning:** Non-compliance with these instructions could result in further damages, personal injuries or death.

#### 1.6. Approval

Not applicable

#### 1.7. Type of Maintenance

Not applicable

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### **1.8. Personnel Qualifications**

National regulations apply.

### **1.9. Release to Service**

Conduct of this SA must be confirmed by an aircraft inspector according to the national applicable regulations for the country of registry of the aircraft.

Conduct of this SA must be logged in the aircraft log book with date and signature of the responsible Person according to national regulations.

### **1.10. Weight and Balance**

Not affected

### **1.11. References**

#### 1. Drawings:

None.

#### 2. Documents:

#### **Latest issues - as applicable for the individual aircraft - of:**

- [1] Flight- and Maintenance Manual CTSW 2006

### **1.12. Superseded Documents**

- none -

### **1.13. Contact Details**

For further information on conduct of this SA, or to report any Safety of Flight or Service Difficulty issues contact your Distributor responsible for your country. Your Distributor can be located via the Flight Design website: [www.flightdesign.com](http://www.flightdesign.com) under "Dealer Location".

In cases where the local distributor is not known or available contact Flight Design GmbH directly: [airworthiness@flightdesign.com](mailto:airworthiness@flightdesign.com).

## **2 Resources**

Not applicable

## **3 Instructions**

### **3.1 Airspeed Limitation**

Until further information is available resulting from the analysis of the new ground vibration test, the never-exceed speed of the affected aircraft is reduced to  $v_{ne} = 180$  km/h.

This new limitation must be displayed in the cockpit and in the aircraft operating relevant manuals.

It is the duty of the operator of the aircraft to ensure that all pilots flying the aircraft are made aware of this limitation.

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### **3.2 Install Placard to the Instrument Panel**

Print the following placard in color.



Install placard to the instrument panel, in direct vicinity to the airspeed indicator. When the aircraft is indicated with an EFIS, install close to the EFIS in a location, where the pilot must notice it when operating the aircraft.

### **3.3 Amend Aircraft Flight- and Maintenance Manual**

Print amendment page as provided by the Appendix three (3) times.

Add one amendment page each to the following chapters of the Flight- and Maintenance manual, in front of the page where the regular  $v_{ne}$  limitation is displayed:

- Chapter 2 – Performance Limitations (section Airspeeds)
- Chapter 5 – Capacities (section Airspeeds)
- Chapter 7 – System Description and Functions (section List of Indications, Markings)

### **3.4 Documentation**

Conduct of this SA must be logged in the aircraft log book with date and signature of the responsible Person conducting the SA. National regulations have to be considered.

## **4 Appendix**

### **4.1 Changes to Previous Revision**

Original Issue – no changes

### **4.2 Feedback Template Flight Design**

No specific feedback required

### **4.3 Amendment Page to Flight and Maintenance Manual**

Amendment page see following page.

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## Amendment to Flight- and Maintenance Manual CTSW 2006

Until further notice, the Never Exceed Speed (maximum permissible speed)  $v_{ne}$  of the aircraft is limited to:

$$v_{ne} = 180 \text{ km/h}$$

This limitation is mandated by Flight Design SA-LTUL-CTSW-04.

A placard must be displayed on the instrument panel of the aircraft in the close vicinity to the airspeed indicator or EFIS stating:

Max. Permissible Airspeed limited to  
 **$v_{ne} = 180 \text{ km/h}$**   
 Limitation is mandatory as by Flight Design  
 SA-LTUL-CTSW-04, until explicit revocation.  
**Markings on Instruments stating different values are invalid.**

This page must be inserted to all positions in the Flight and Maintenance Manual where the Never Exceed Speed  $v_{ne}$  is defined or quoted.