

# **NATIONAL TRANSPORTATION SAFETY BOARD**

Office of Research and Engineering

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## **REAR SPAR DAMAGE MARKERMEER, NETHERLANDS AND ANTELOPE ISLAND, UT 14 PHOTOGRAPHS PART 1**

by John Clark

### **A. ACCIDENTS**

Location: Markermeer (near Hoorn), Netherlands

Date: September 14, 2008

Aircraft: Czech Aircraft Works Zodiac 601XL

NTSB#: n/a

Dutch Incident Number: 2008107

Location: Antelope Island, UT

Date: March 3, 2009

Aircraft: Experimental Zodiac 601XL

NTSB#: WPR09FA141

### **B. DISCUSSION**

The airplanes are Zodiac 601XLs. Each airplane sustained an in-flight structural failure of one or both wings. Where photographs are available, it is noted that the rear spar of both wings sustained similar damage. This report is added to the docket of the accident that occurred at Polk City, Florida.

Location: Polk City, Florida

Date: April 7, 2008

Aircraft: Czech Aircraft Works Zodiac 601XL

NTSB#: NYC08FA158

## REAR SPAR DAMAGE OF SIX ZODIAC AIRPLANES (PART 1, DUTCH AND ANTELOPE ISLAND)

A number of Zodiac 601XL light sport airplanes sustained inflight failures of a wing. Photographs of six were sufficient to allow examination of the rear spars in the area of the flap/aileron junction. The upper and lower caps of the rear spars exhibited compression buckling.

It is important to note that typically one wing would fail and wrap around the fuselage while the other wing would remain relatively straight. Regardless of the difference in the overall damage to each wing, compression buckling of the upper and lower caps of the rear spars was observed.

The Dutch Safety Board provided photographs of the Dutch accident. The CIAAIC provided photographs of the Spanish accident.

Typically, the compression buckling of the lower spar cap was at the lower edge of the hole that allowed the aileron push rod to pass through the rear spar web. The compression buckling of the upper spar cap was several inches inboard of the flap/aileron junction.

In some cases, only photographs of the external surfaces were available.

The Dutch accident: the right wing wrapped around the fuselage, the left wing was relatively straight.



Left wing, upper buckle



Left wing, upper buckle



Left wing, lower buckle



Left wing, lower buckle



Left wing, lower buckle





Right wing, upper buckle



Right wing, upper and lower buckles



cyclic scratching

The Antelope Island, UT accident: the left wing wrapped around the fuselage, the right wing was relatively straight.



Right wing, lower surface



Right wing, lower buckles



Right wing, upper and lower buckles





Right wing, upper and lower buckles



Left wing, lower buckle





Left wing, lower buckle

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