FAA
Aviation Safety

SPECIAL AIRWORTHINESS INFORMATION BULLETIN

SUBJ: Landing Gear, Nose: Zenair CH2000 Nose Landing Gear Weld Cracking

SAIB: CE-11-58
Date: September 27, 2011

This is information only. Recommendations aren't mandatory.

Introduction

This Special Airworthiness Information Bulletin is issued to inform owners and maintainers of **Zenair CH2000 series aircraft** of a potential unsafe condition regarding the cracking of the nose landing gear (NLG) weld.

At this time, this airworthiness concern has not been determined to be an unsafe condition that would warrant airworthiness directive (AD) action under Title 14 of the Code of Federal Regulations (14 CFR) part 39.

Background

The Federal Aviation Administration (FAA) was notified of a NLG weld failure and crack findings of another NLG weld of a Zenair Ch2000 aircraft.

The incident report states that the first landing by a flight instructor and student was smooth and uneventful. While the second landing was also smooth, when the nose gear touched down, the instructor noticed that the nose gear fork exited on the left side of the aircraft. The remaining nose gear leg contacted the runway surface and supported the nose but the reduced clearance allowed the propeller blades to contact the runway.

Inspection of the aircraft showed that the plate welded onto the bottom of the nose gear leg (photo 1) failed, which caused the nose gear fork to separate from the nose gear leg.

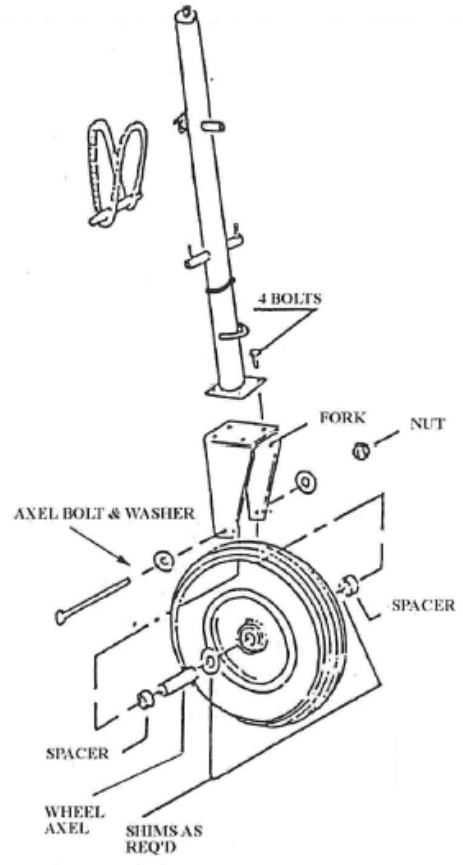

Photo 1: Nose Landing Gear Assembly

Additionally the operator found cracks developing in the weld of another CH2000 aircraft NLG (photo 2.)



Photo 2: Cracking on the NLG leg and plate weld

A review of service difficulty reports did not find additional occurrences. An investigation by Zenair did not reveal the root cause. Zenair believes that the weld cracking is due to “excessive” hard NLG landing, exceeding the design limits. The nose wheel fork may flex and bend the square steel plate welded to the structure resulting in possible metal fatigue and eventual cracking.

The design approval holder, Zenair Ltd., has investigated the issue and has published a service bulletin in February 2011 that details preventative measures and initiates a visible and/or fluorescent liquid penetrant inspection of the nose landing gear weld. These measures are also incorporated in the Zenair Ltd. service manual

Recommendations

The FAA recommends all affected owners and operators pay close attention to the NLG weld area, both during scheduled maintenance activity and following every hard landing per Zenair Ltd. service manual instructions.

For Further Information Contact

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