AIRWORTHINESS ALERT

LAA/AWA/19/08
4th March 2019

CZAW SportCruiser
Nose Undercarriage
Spindle Inspection

Fig 1. This picture shows the corrosion damage that has occurred unseen in a CZAW SportCruiser noseleg spindle after five years in service. Corrosion like this is extremely dangerous because surface corrosion pitting in high-strength steel is a common cause of cracking and component failure.

LAA Engineering have recently published an Airworthiness Information Leaflet (AIL) (MOD/338/019 Issue 1) which introduces a requirement to physically remove the spindle from its housing for inspection and servicing at each annual inspection. It is strongly suggested that this spindle removal/inspection be completed alongside other annually required checks of the nose undercarriage assembly.

The reason for this new requirement is that there have been a number of field reports suggesting problems with corrosion on the mating face of the spindle, normally having been found during annual maintenance. The spindle is a highly stressed component which is manufactured from extremely strong steel. This type of steel is known to be seriously weakened by local corrosion pits or stress corrosion cracking and to avoid this, during initial assembly, a jointing compound (JC5a or equivalent) is used. It has become clear that, over time, the protection afforded by the jointing compound diminishes and the corrosion process begins.

A copy of LAA/MOD/338/019 Issue 1 can be downloaded HERE.

A copy of Sprite Aviation Service Letter detailing the complete assembly instructions can be downloaded HERE.

Fig 2. To act as a barrier between the mating surfaces a jointing compound is applied before assembly. When 'wet assembled', this has the added benefit of filling any voids which may allow water ingress into the assembly.

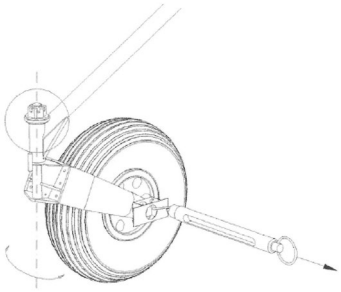

Fig 3. As a by-product of their design, most noselegs can suffer from shimmy if not set up correctly. Important factors in the prevention of shimmy include ensuring that the correct friction is maintained between the spindle block and, naturally, correctly inflated tyres.