

Kunovice September 30, 2010

OPINION Aircraft Industries, a.s. on the means to restore airworthiness of GLIDERS L 13 and L 13 A

With regard to the accident glider L 13 sn 175117 (in Austria 12 June 2010), where the initial findings first led investigators to suspect the fatigue cracks associated with fracture of the left wing flange where it joins the hinge leaf; and also identified a significant strain due to high overall acrobatic flight frequency of about 8% of the last 400 hours of operation (with the previous roughly 2000 hours of operation not having any records at all) - to the attention of operators and certification agencies concerned with the problem of fatigue life of the glider and criteria for its certification.

Investigation of the accident is still not officially closed.

Aircraft Industries, as manufacturer, stresses that the service life of L 13 gliders and other related types is based on the concept of safe life, which was established based on fatigue tests of the glider and fatigue tests of samples. Tests consisted of applied cyclic loading derived from the published average operating conditions in the glider's operational documentation. In the event that actual operating conditions of the glider deviate towards greater burden on the glider (the frequency of improper acrobatics, etc.), safe life of the glider drops significantly below the standard service life.

Following the issue of Mandatory Bulletin L13/109a and EASA AD 2010-0119-E, it was revealed that many gliders L 13 have missing or incomplete records of actual operating conditions. This situation precludes the ability to assess what proportion of fatigue life has been exhausted and what part remains available, which is contrary to the concept of safe fatigue life.

In this situation, taking into account the finding that visual inspection of the critical binding site required by Bulletin L13/109a is unable to ensure reliable identification of all cracks, Aircraft Industries a.s. considers that the appropriate way to restore the airworthiness of gliders L 13 and L 13A is the development, certification and deployment of NDT methods that can reliably identify any incipient cracks in critical areas, together with the determination of periodic tests and analysis of the speed of crack propagation at critical locations to determine residual structural strength in critical areas.

Aircraft Industries a.s., in cooperation with the Research and Testing Institute in Prague is preparing a system of checks using the "eddy current" technique. Given that the critical point is hidden below the two layers of sheet metal and flat head rivets, the development of the means of processing the data is more time consuming.

Aircraft Industries a.s. expects to restore the airworthiness of gliders with proper operational records, by implementation of approved NDT methods with satisfactory results. Furthermore, we assume that the method will be verified and approved in early 2011.

Gliders with non-existent or incomplete operational records will probably be subject to periodic checks. We expect that this will be approved at the end of the first quarter of 2011.

The proposed way to restore the airworthiness of gliders is subject to approval by EASA.