



DESCRIPTION:

Ultravia Aero International Inc. embarked into a type certification program for the Pelican 2-100 to obtain certification under Transport Canada Chapter 523 – Very Light Aircraft (VLA) and FAA (FAR23-VLA). The Pelican 2-100 is a two seat, single engine, high wing airplane of conventional design, consisting of a semi-monocoque composite fuselage, metallic wings and metallic empennage.

To assist in this certification process, Martec Limited analyzed the structural components of the Pelican 2-100 using classical methods and/or Finite Element Analysis (FEA) as required. The FEA models for the engine mount, main landing gear, horizontal stabilizer, vertical stabilizer, wing, and fuselage were created using Altair's "HyperMesh" pre-and post-processor. Combinations of static linear, buckling and fatigue analyses were conducted using MSC/Nastran. Martec Ltd conducted an extensive material test program to determine the A- and B-basis material properties required for the FE analysis. Using the results obtained from the FE analyses, classical analyses were performed to evaluate the margins of safety of the aircraft major structural joints.

Martec Ltd. documented the results of these analyses and material qualification tests in a format suitable for submission to Transport Canada to support the type certification requirements.
