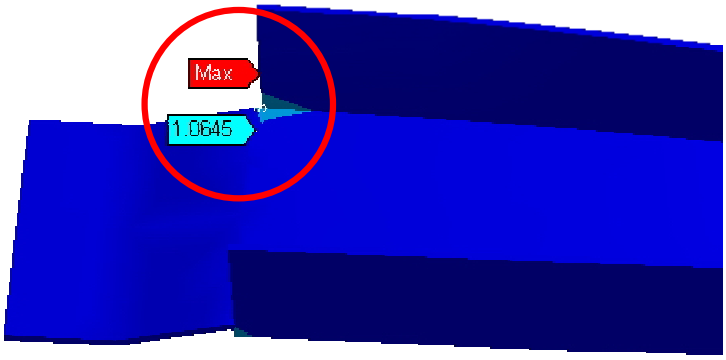
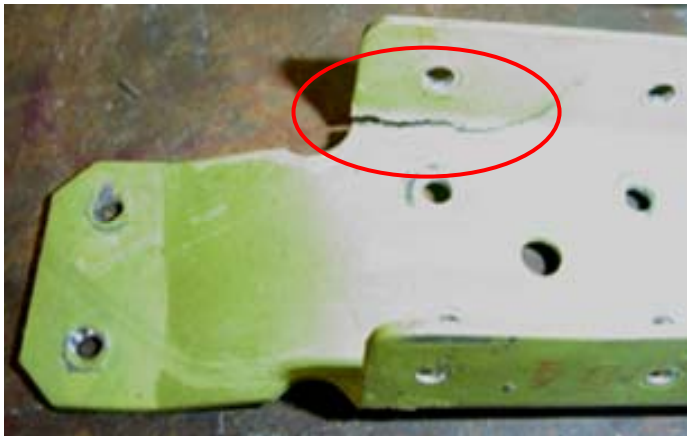


(a) Simulation by FEM



(b) Real structure

Figure: Show the maximum Von Mises Stress on the rib at front hinge assy.

STRENGTH DESIGN AND ANALYSIS OF A NOSE LANDING GEAR DOOR FOR L-39 JET TRAINER AIRCRAFT RIB FRONT HINGE ASSEMBLY

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A study on the rib in U-profile at front hinge assy. of L39ZA\ART by using the Finite Element Method reveals that the maximum Von Mises stress situates at the bent between Upper flange and Web. This is the critical point which is the same point occurred on the real rib. The value of this stress equals 1.0645 MPa as shown in the figure (a). The crack is opened by the tensile force acting the Upper flange, as show in figure (b). Naturally, the maximum stress is found at the out bound of the bent. This tells that the rib structure must be reinforced at this critical point. Practically, the technician fixes this problem by selecting the thicker size to augment the life cycle.