Docket No. SA-522

Exhibit No. 7-JJ

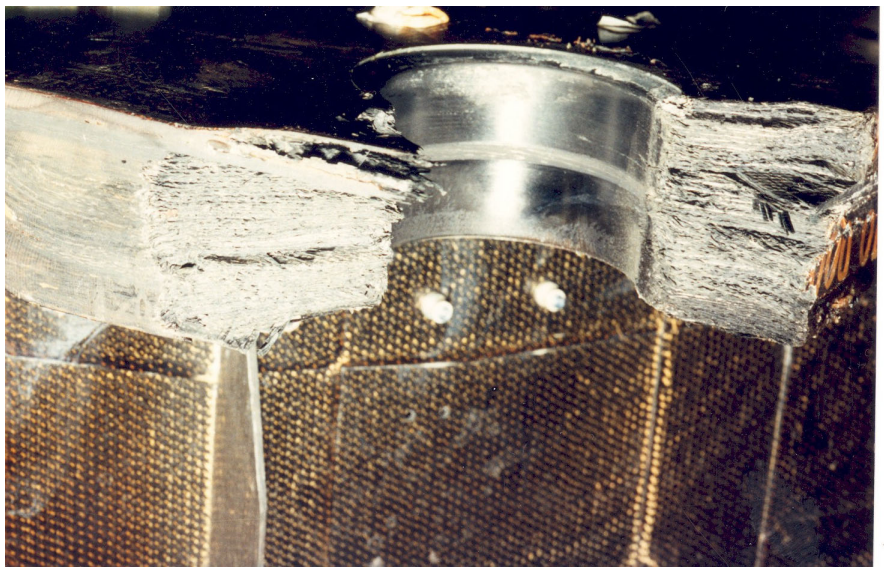
NATIONAL TRANSPORTATION SAFETY BOARD

Washington, D.C.

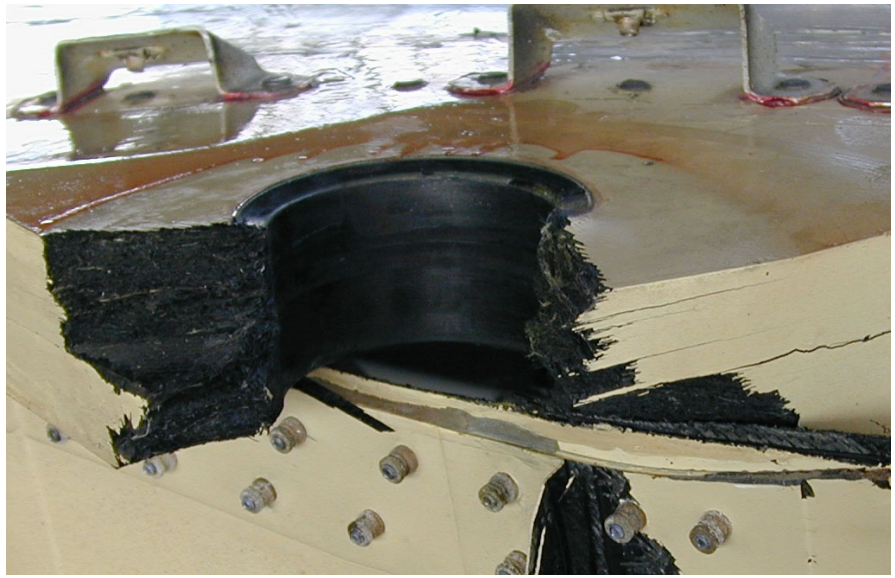
NASA Local Lug Analysis

(8 Pages)

Right Rear Lug Failure



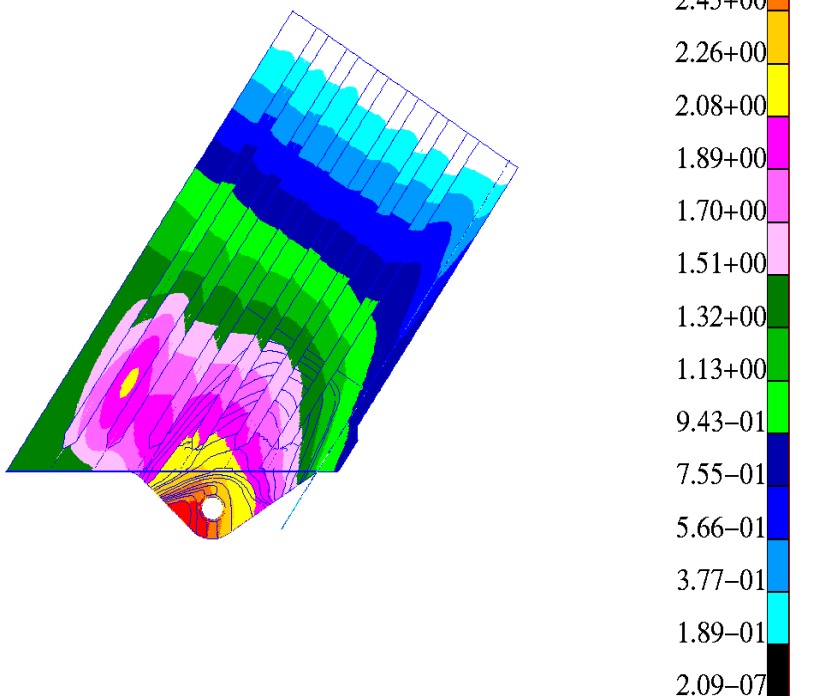
Full-Scale Certification Test



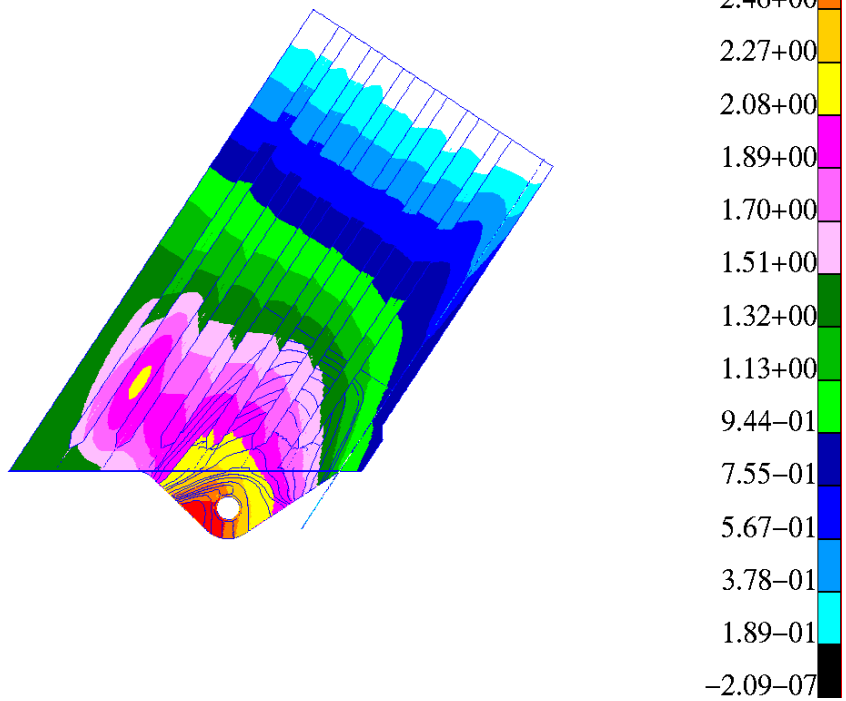
AA 587

Airbus 3-D Model of Right Rear Lug - Displacements

Load Case 12: N373 Issue 7
Rudder deflection –9.4º



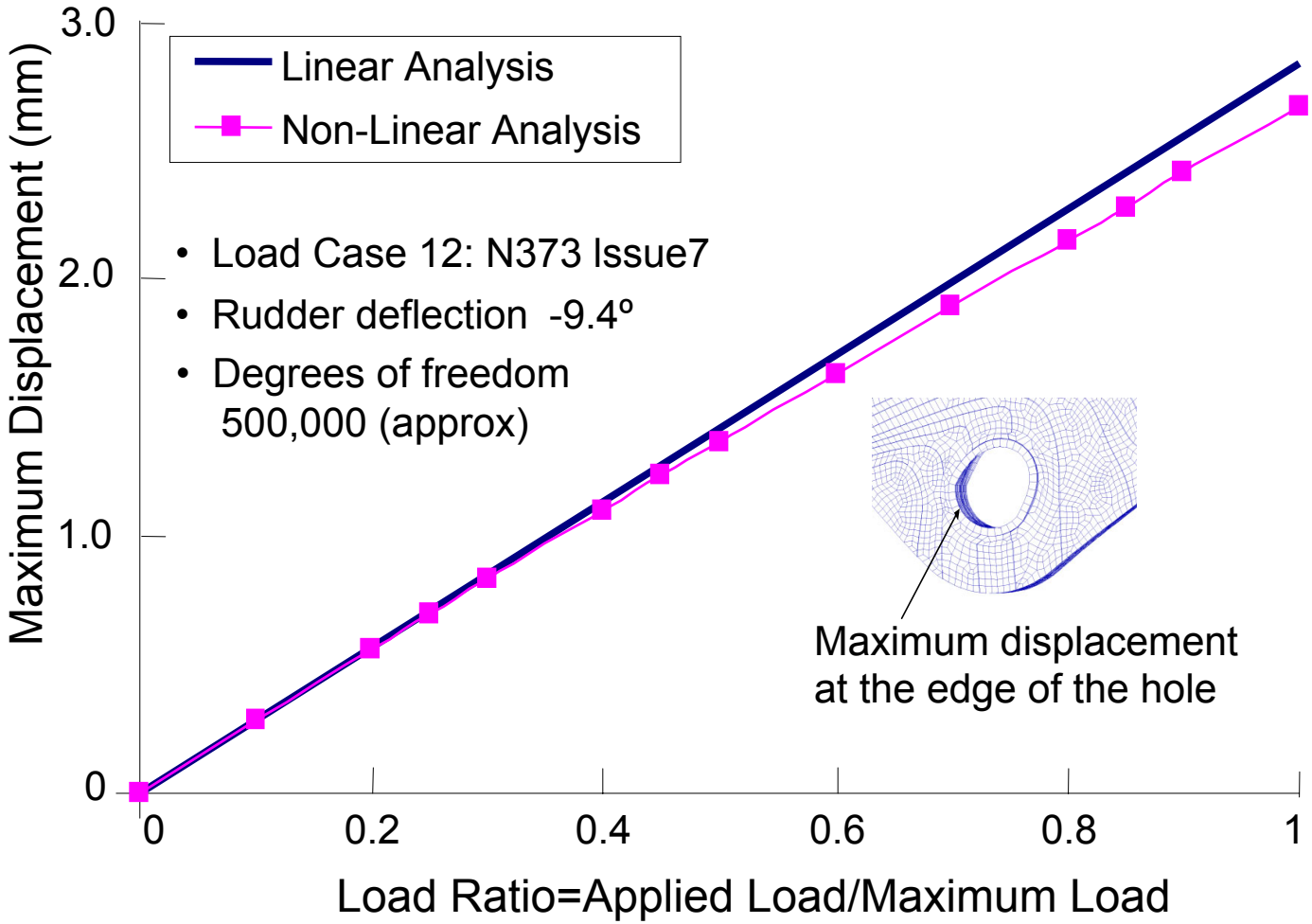
Airbus Analysis



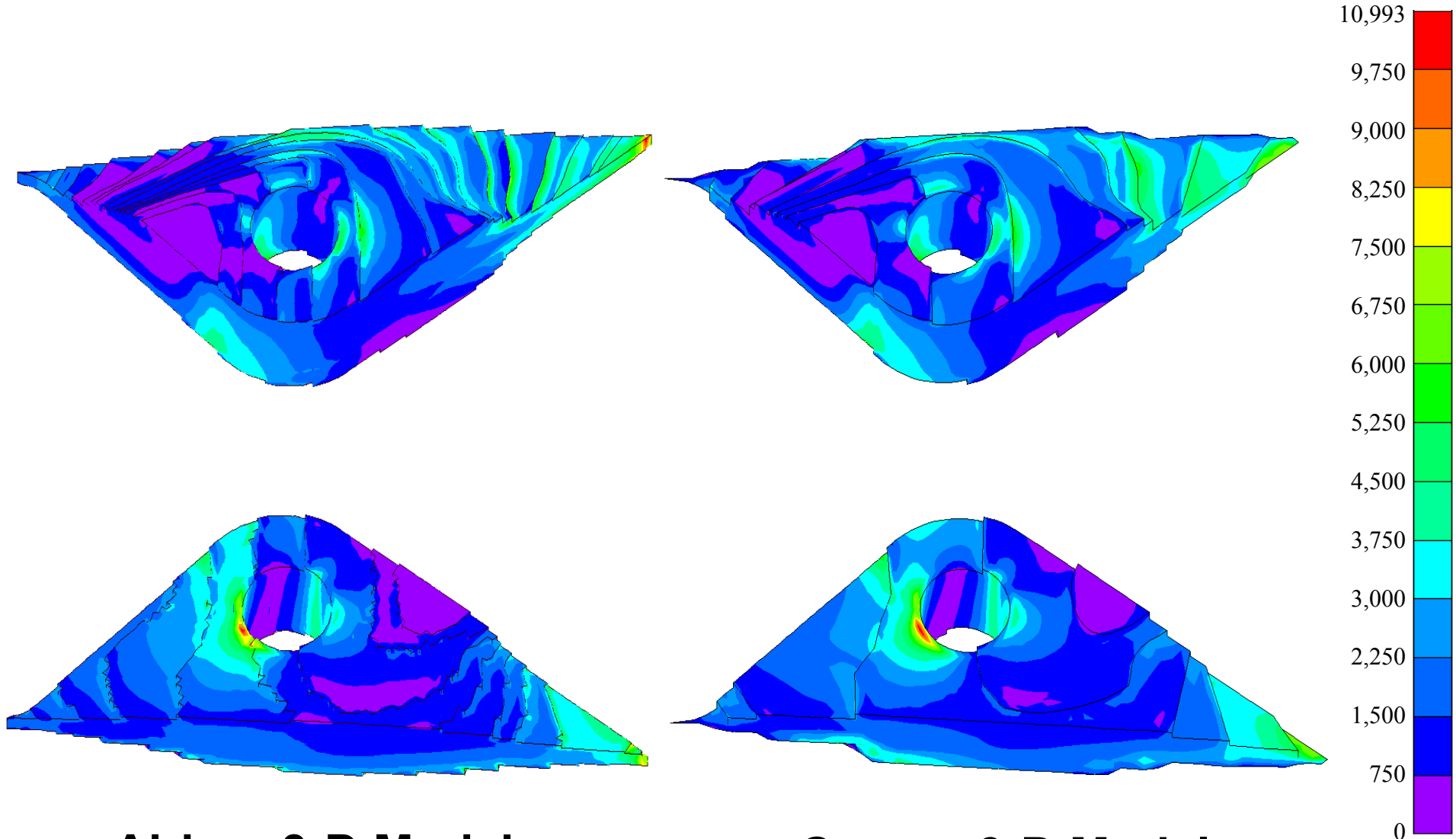
NASA Langley Analysis

Active degrees of freedom 500,000 (approx)

Airbus 3-D Model of Right Rear Lug - Displacements (concl.)



Maximum Principal Strain, $10^6 \varepsilon_1$

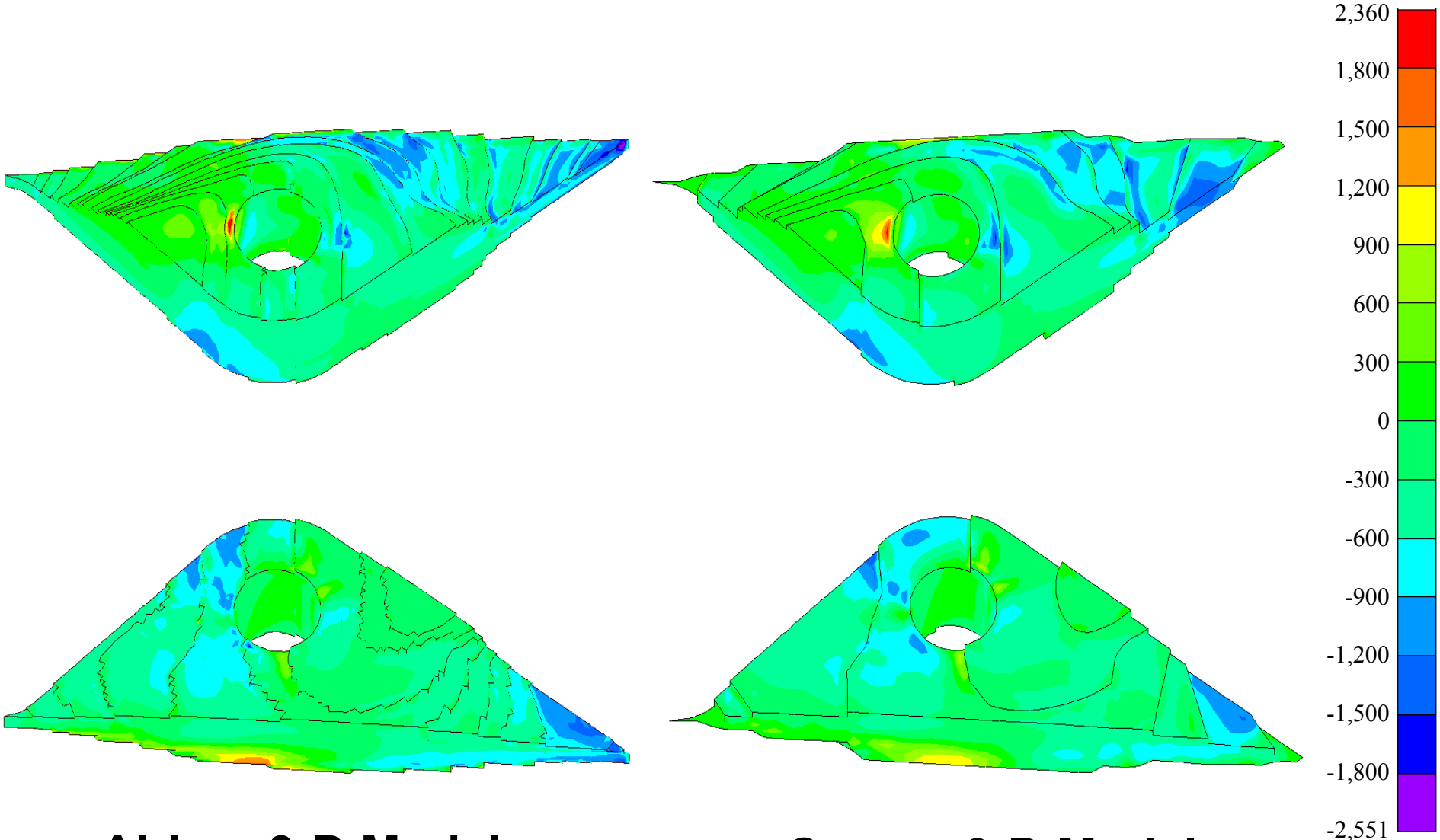


Airbus 3-D Model

Coarse 3-D Model

Preliminary, 9/25/02

Intermediate Principal Strain, $10^6 \varepsilon_2$

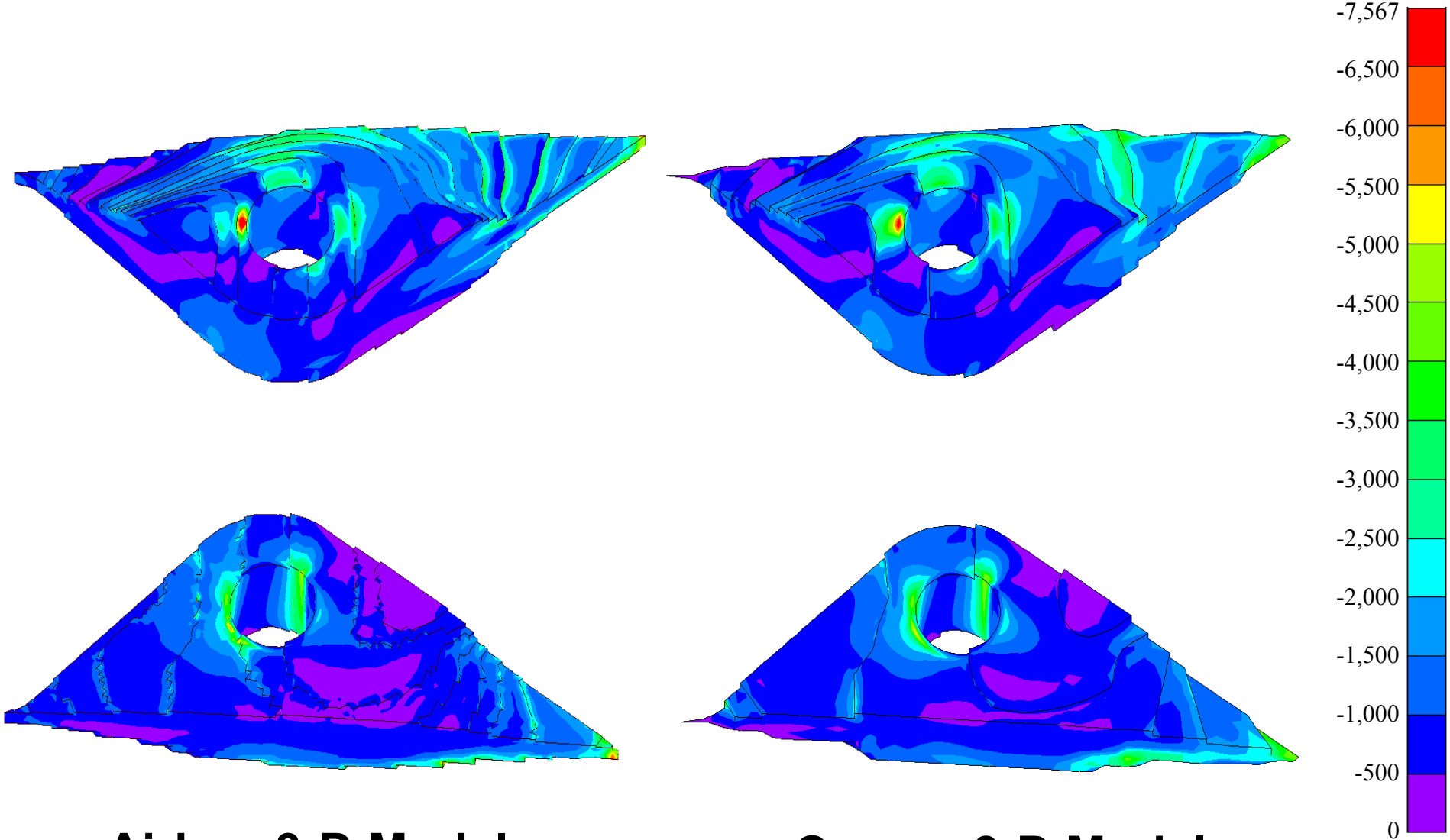


Airbus 3-D Model

Coarse 3-D Model

Preliminary, 9/25/02

Minimum Principal Strain, $10^6 \varepsilon_3$

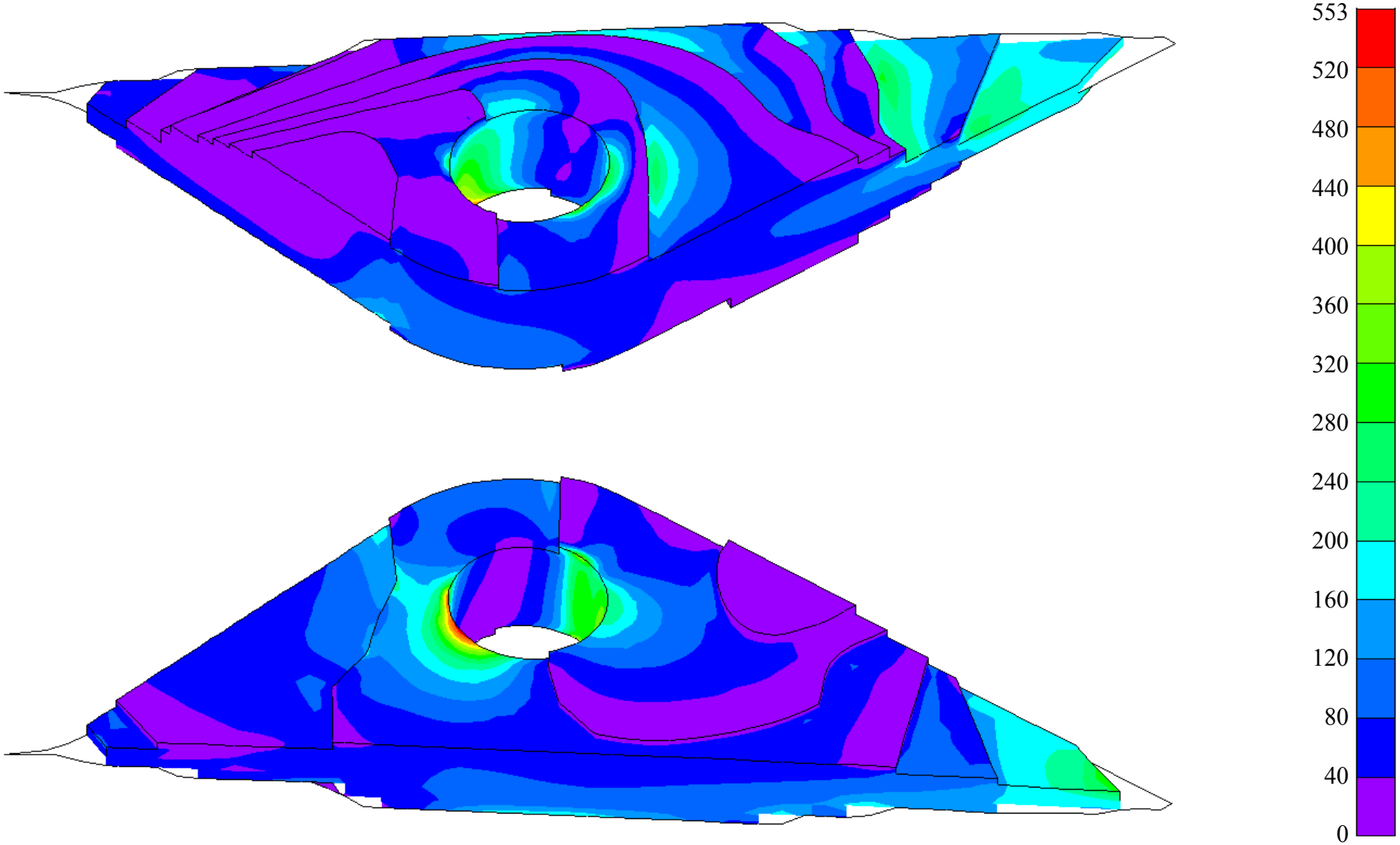


Airbus 3-D Model

Coarse 3-D Model

Preliminary, 9/25/02

Maximum Principal Stress, N/mm^2



Coarse 3-D Model

Preliminary, 9/25/02