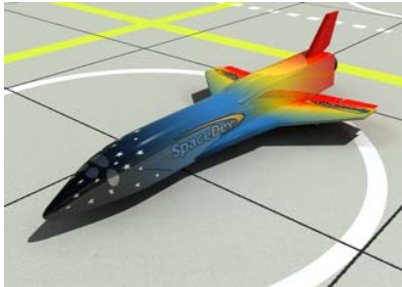


Aerospace Case Study (SpaceDev, Inc. – SpaceShipOne)



SpaceDev, Inc. (www.spacedev.com) designed and integrated critical technology for the safe hybrid rocket motors for Paul Allen's crewed SpaceShipOne. The company helped win the \$10 million Ansari X Prize on October 4, 2004.

The SpaceShipOne motor bulkhead (left) is a common bulkhead between the N_2O tank and the motor. The design condition is when the motor is not running with the N_2O at 700 psi trying to invert or buckle the bulkhead. The design factor of safety is 2.5 resulting in the bulkhead having to pass a qualification test at 1775 psi.

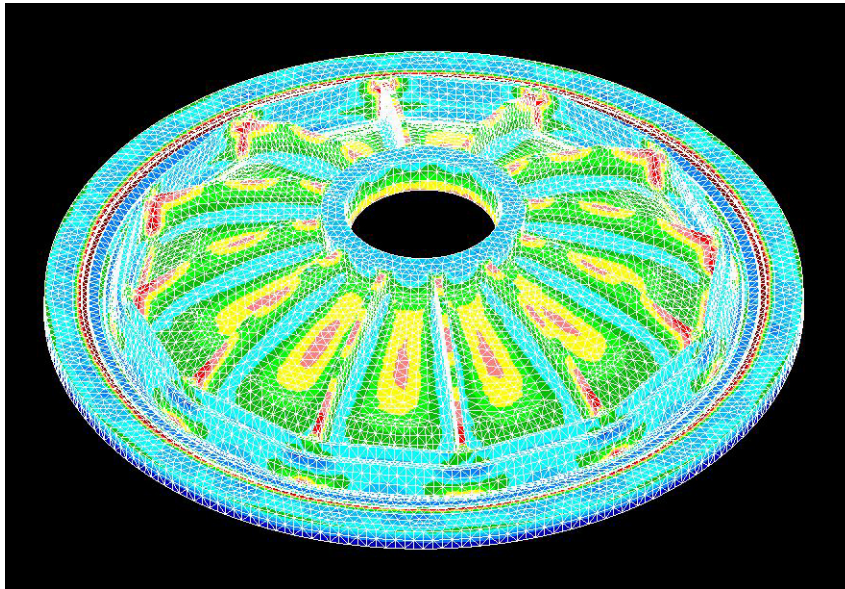
NEi Nastran software was used to perform both a static analysis at the qualification pressure and a nonlinear buckling analysis to verify that the bulkhead would not invert. The results showed the bulkhead would not yield and would not invert (buckle).

The NEi Nastran package was chosen for a number of reasons:

First, it can handle the complex analyses we require.

Secondly, their technical support is very reliable.

Finally, NEi Nastran is priced affordably compared to the other analysis packages we considered.



NEi Software, Inc. is aggressively focused on commitment to the customer. Detailed documentation, customized on-site training, and comprehensive technical support ensures that you will see immediate return on your investment.

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NEi Nastran *for Windows*
From NEi Software, Inc.