

Re: SpaceX Aims For 2009 Re-usability Demo

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- *From:* Pat Flannery <flanner@xxxxxxxxxx>
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Jochem Huhmann wrote:

This would be a good point to finally try active cooling. Let the fuel tank heat up and design in pressure-controlled valves that vent residual (vaporized) fuel over the skin of the stage, cooling it and protecting it from the plasma. I have always thought that this is the best way to get anything mainly consisting of large and nearly empty fuel tanks intact through reentry.

But you are going to have to keep it stable as far as orientation goes during reentry, and that's probably going to mean spinning it up so a nose-mounted heatshield/active cooling system stays pointy-end first as it comes in...given it's shape that may not be easy.

Since the only expensive things on it are the guidance electronics and engine, it might be smarter to mount the electronics back at the tail end of the stage near the engine, and just have that section come down via parachute while the propellant tankage is allowed to burn up. That would certainly save a lot of weight on the parachute system.

Pat

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