



Outer Space Lessons for Earthside Safety



or

IT ISN'T 'ROCKET SCIENCE'



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The Great Galactic Ghoul



Artistic impressions of a hungry, evil demon lurking out near Mars to feed on passing spacecraft -- amusing, until used as a 'real excuse'



Preliminary Debris Transport Assessment of Debris Impacting Orbiter Lower Surface in STS-107 Mission

January 21, 2003

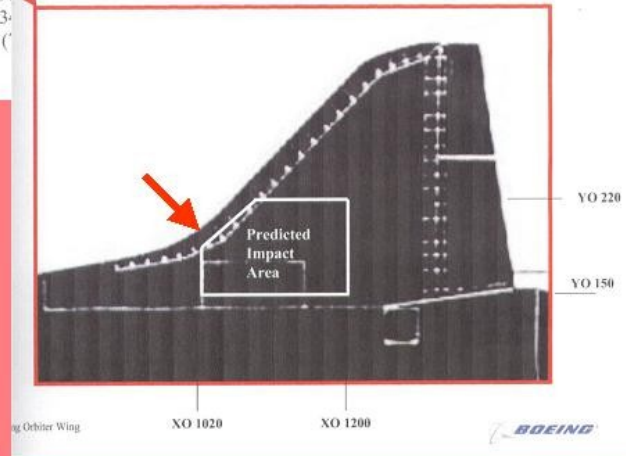
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PDRD SC004

STS-107 Debris Impacting Orbiter Wing

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Where Did It Hit?

Impact Area Derived from Film Observations and Trajectory Analysis



Assessment of hazard by engineering team (above) advised that threat was not very high, based on some assumptions and on use of earlier impact test data.

Location map (rt) also missed actual impact (red arrow) just at boundary of new material

‘RCC’ Had Never Been Impact-Tested - photos of hole

Only safety concern for RCC was high-speed meteorite hit, not for ‘slow’ insulation impact

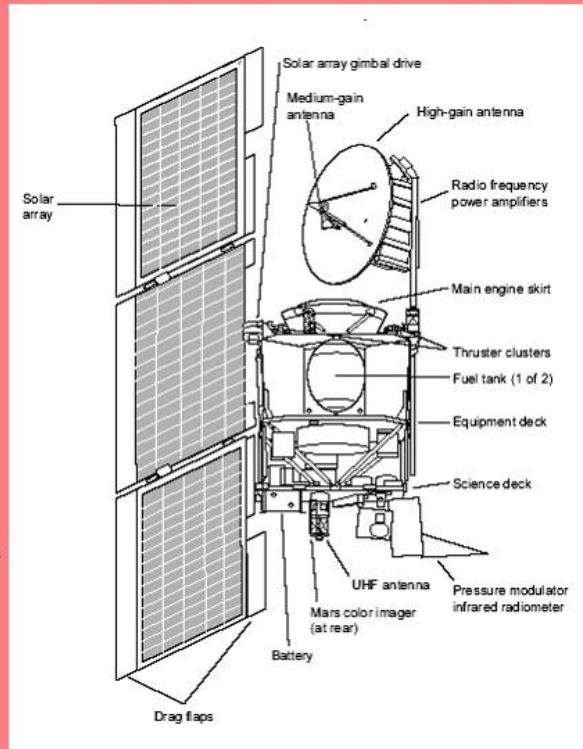


July 7, 2003 --
test knocks
head-sized hole
in front edge.



Official excuse: units mixup (English/metric)

Probe had one solar panel that resulted in gentle torque from 'solar wind', requiring small jet thrusters to fire every few days. Thrusters also pushed probe slightly off course. This was expected, but size of push was delivered in wrong units (so was about 5 times too small).



Safety awareness decays...

- From lulling of anxiety through success
- From self-hypnosis based on superstitious statistical myths and 'momentum'
- From loss of respect (fear) for past experience and near-misses
- From elevation of other measures of goodness higher than safety

Feb 23, 1997 -- Mir Station: Fire nearly kills 6 crewmen



Very smoky fire (MORE than in this private artwork) chokes crew, injures men closest to it.

