Re: Polythene tanks?

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From: Rüdiger Klaehn (*klaehn_at_gamemakers.de*)
Date: 02/04/05

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To: sci−space−tech@moderators.isc.org
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Peter Fairbrother schrieb:
> Henry Spencer wrote:
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> Why?

You still have not answered why wings and wheels are the only safe technology for landing. Even if we accept the very unrealistic assumption that a space transport must be safe as commercial airliners, there is no technical reason that you can not get very high safety with rocket powered landing.

The key to high safety is redundancy. A capsule with many small rocket engines for landing can be very reliable. For maximum reliability you would run all rocket engines on idle during the landing and then throttle up some of them to decelerate and land. If you have 12 rocket engines and need only 4 of them to land, the chances of a failure are extremely low. You just have to make sure that the engines do not have a catastrophic failure mode.

You might argue that relying on complex active systems for a safe landing is unacceptable, but then a starting airplane would be unacceptable too. When a starting airplane were to lose all engines during takeoff, it would certainly crash. But the chances of this are extremely small with multi−engine airplanes. And (especially pressure−fed) rocket engines are much less complex and less dependent on the environment than aircraft turbofan engines. At least you don't have to worry about birdstrike :−)