

Re: How Rockets Differ From Jets

Source: <http://sci.tech--archive.net/Archive/sci.space.shuttle/2005-10/msg00458.html>

- *From:* Fred J. McCall <fmccall@xxxxxxxxxxxxxx>
 - *Date:* Tue, 25 Oct 2005 14:58:58 GMT
-

"tomcat" <jlavine@xxxxxxxxxxxxxx> wrote:

:

:Fred J. McCall wrote:

:> :Nothing magical about a SSME. Rocketdyne makes them. They work. They

:> :produce 450,000 pounds of thrust each at sea level, 500,000 pounds of

:> :thrust each in Space.

:>

:> I don't see any spaceplanes using 11 of them flying to Venus today.

:> Perhaps you do?

:

:Such a spaceplane is getting discussed here precisely because it hasn't

:been built yet. It is the future of Space Engineering.

:

:A spaceplane with 11 SSME's would have 5.5 million pounds of thrust at

:full throttle in space. That is a lot of thrust. Combined with a very

:light dry weight it just about could work 'magic'.

<snicker>

:> :A good spaceplane would be a combination of extremely light materials,

:> :like carbon nanotube fabric, and . . . vacuum. It just might float.

:>

:> In which case it is not acting as a spaceplane and will be in pieces

:> from forces hitting it from the wrong directions.

:>

:> Engineering ain't magic, Tomcat.

:

:We are not talking about 'bailing wire and bubble gum' here.

Well, when you start looking at the magnitude of forces exerted by Venus' atmosphere, yeah, you are.

:Both basalt fabric and nanotube fabric have enormous toughness and

:strength. Nanotube fabric -- recently developed at the University of

:Texas -- is not only 600 times stronger than steel for a given amount

:of weight, but can take many thousands of degrees of heat.

Which is still irrelevant. Strength per weight is a lousy measure of

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your vehicle being 'stronger' unless you're looking at using something close to comparable weights as you would steel.

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"Some people get lost in thought because it's such unfamiliar territory."

--G. Behn

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- **References:**

- ◆ **Re: How Rockets Differ From Jets**
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- ◆ **Re: How Rockets Differ From Jets**
◇ From: Glenn Shaw
- ◆ **Re: How Rockets Differ From Jets**
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