

Re: How big would an SSTO be?

Source: <http://sci.tech--archive.net/Archive/sci.space.policy/2007-07/msg00399.html>

- *From:* BradGuth <bradguth@xxxxxxxxxx>
 - *Date:* Sat, 14 Jul 2007 00:42:50 -0000
-

On Jul 13, 5:04 pm, Sylvia Else <syl...@xxxxxxxxxxxxxxxxxxxxxxxx> wrote:

BradGuth wrote:

On Jul 12, 8:39 pm, Sylvia Else <syl...@xxxxxxxxxxxxxxxxxxxxxxxx> wrote:

Ian Parker wrote:

There is one other vital fact. Suppose we accept that a hypersonic SSTO orbiter is possible. There is still one other important parameter. Will it be able to perform 1000 flights maintainance free – only fuel and LOX, or will it like the Shuttle have to virtually be rebuilt after every flight? You cannot tell simply be looking at the Skylon design.

Skylon appears to be designed for a life of 200 launches. I doubt they expect the engine to last that long, but one would hope that the engine didn't need to be stripped down after each flight.

It appears from my what I've read over the last few days that a very significant factor in the life and reliability of rocket engines is the chamber pressure, and one reason the SSME requires so much maintenance is that it runs at a very high pressure.

Re: How big would an SSTO be?

I haven't been able to find any indications of what kind of pressures RE's SABRE engine will use.

Sylvia.

So what's the difference, because your precious Skylon simply has too much inert mass instead of payload and fuel to deal with. It'll be damn lucky getting 6 tonnes into LEO. Sorry about all that.

At this point, I'd buy 3 tonnes of LEO deployment, as doable. Prove or best demonstrate otherwise.

–

I think I'll opt for 100 tonnes to LEO using a 150 tonne MTOW vehicle. I mean, if we're just pulling numbers out of the air, why not pull some nice ones?

Sylvia.– Hide quoted text –

– Show quoted text –

Are we going a little postal, or what?

Those ratios that I pulled were mostly out of a NASA and ESA hat, are those of what a least inert rocket can manage to get the most of whatever into LEO.

BTW, rockets typically don't have those nifty wings, multiple landing gears, a reusable monohull configuration, nor are they accommodating a crew and/or a few passengers, or that of a good dozen other hefty sorts of related items which your SSTO Skylon can't possibly avoid unless it's almost entirely made out of spendy and technically complex CNT plus a few super alloys.

–

Brad Guth

.

Re: How big would an SSTO be?