

Re: fun with expendable SSTOs (was Re: The 100/10/1 Rule.)

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- *From:* Peter Stickney <p-stickney@xxxxxxxxxxxx>
 - *Date:* Sat, 17 Mar 2007 21:06:19 -0400
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Greg D. Moore (Strider) wrote:

"Rand Simberg" <simberg.interglobal@xxxxxxxx> wrote in message
news:467893d0.867901416@xxxxxxxxxxxxxxxxxxxxxxxxxxxx

On Thu, 15 Mar 2007 17:09:34 GMT, in a place far, far away,
henry@xxxxxxxxxxxx (Henry Spencer) made the phosphor on my monitor
glow in such a way as to indicate that:

In article
<45f94239\$0\$8352\$5a62ac22@xx>,
Neil Gerace <geracen@xxxxxxxxxxxx> wrote:

...and because cold metal is
stronger than warm
metal and hence can take
higher pressures.

Cold tin is definitely weaker than warm tin,
though of course it's a bit
weird as metals go and there's none involved
here so it doesn't count
:-) (I think cold 'grey' tin has the
tetrahedral-covalent diamond
structure but
nothing like the bond strength, while warm
'white' tin is more like a
true
metal.)

I forget the exact story on tin, but yes, phase changes can
mean that
you're not dealing with quite the same metal :-) at different
temperatures.

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The other joker in the deck is that some metals — notably ordinary carbon steel — become brittle when cold.

IIRC, this was a factor in the loss of the Titanic. Though only one of many. And I don't always recall correctly...

Ayup, brittle fractures. The big surprise when they started to look at the actual wreck was that it wasn't a single huge gash like they thought but lots of small.

As I understand it, the problem wasn't so much the hull plates, but the rivets that held them together. The shock of the collision sheared a lot of rivets, and thus seams were started in areas not directly at the site of the iceberg strike.

—

Pete Stickney

Without data, all you have is an opinion

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