

Re: Station, satellite get image of Frances as NASA prepares for Storm

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In article <4138d863.178690627@news.eircom.net>, wallacethinmintr@eircom.net (Russell Wallace) wrote:

> *On Wed, 1 Sep 2004 15:55:38 -0400, "Jeff Findley"*
> *<jeff.findley@ugs.nojunk.com> wrote:*
>
> *>Like this:*
> *> The Orbiter Processing Facility is constructed of concrete and*
> *> steel and was designed to withstand winds of 105 mph. The Vehicle*
> *> Assembly Building is constructed of concrete and steel and was*
> *> designed to withstand winds of 125 mph.*
>
> *I'm surprised it can't handle more; aren't there hurricanes with winds*
> *up to something like 140 mph?*

A Category 4 has sustained winds of up to 145 mph or so; there is also a Category 5 on the scale.

> *I thought the VAB was something like the*
> *size of the Great Pyramid – would it really fall over in a 130 mph*
> *wind? How much safety margin is there on the 125 mph figure?*

Given the age of the structure, its location of metal alloys and its location on the coast, probably not as much as it once had. But in any event, having once walked some distance in mere 55 mph winds during a blizzard, I wouldn't want to be out in anything much higher. The formula for calculating dynamic pressure is:

$$Pd = 1/2 * \rho * v^2$$

Where rho = density and v = velocity. Watch your units when you do the calculations.

In any event, you can easily see that as wind speed goes from, say, 75 mph to 150 mph, the dynamic pressure quadruples, it doesn't just double. Furthermore, unlike a pyramid, the VAB has four sides which are

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essentially giant slabs – these have tremendous drag and are just about the most vulnerable shape there is with regard to winds. I'm frankly amazed the structure is rated as highly as it is.

> **wishing everyone in the affected area luck and hoping the damage
> isn't too bad**

Me too. Latest reports say it's now down to a Category 2 storm.

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Herb Schaltegger, B.S., J.D.

"Never underestimate the power of human stupidity."

~ Robert A. Heinlein

<<http://www.angryherb.net>>