

Re: Future Retro Space Station Designs.

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"Michael Gallagher" <mikejoe7g@xxxxxxxxxx> wrote in message
news:jbp2t39apn09umvceb2a3jbcak9eso2vt0@xxxxxxxxxxx

I was wondering what kind of space station would be built to succeed ISS, given that the orbiters would be retired and replaced by Orion by then.

It's not at all obvious that there would be funding for a LEO station to replace ISS. At least, not one that's mostly US built and operated. NASA's direction seems to be back to the moon, with everything else be damned.

Obviously, segments would have to dock automatically, as the Russian did with Mir, without an orbiter to assemble it, but what to start with?

Not true. It's entirely possible to use a small "tug" to retrieve and dock (or berth) modules to a station. One of the COTS proposals for ISS resupply takes this approach. In the long run, this would seem to be cheaper since your station modules/supplies don't need to have the ability to independantly rendezvous and dock.

With Orion making Apollo cool again, I wondered about the possiblity of resurrecting Skylab's dry workshop, using Ares V's EDS stage; the solids and the first stage would orbit it.

I thought I'd read somewhere (NASA Spaceflight.com forums) that Ares V can't put much of anything into orbit without an upper stage.

Nodes could be put at either end for other modules to dock to. However, I read some web pages on space station design and the idea of using spent rocket stages fell out of favor to purpose-built modules years ago. And

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AFAIK, the Soviets didn't use spent stages in their stations either. So Ares V could launch purpose built modules that dock automatically, sort of an "uber Mir," instead of a reconverted EDS stage.

Don't forget inflatables. NASA may have dropped the Transhab concept due to lack of funds for ISS, but Bigelow Aerospace is actively pursuing this technology.

Which would be better from a practical standpoint, given our experience with ISS --- a "dry workshop" using the EDS stage, a purpose-built blocks?

Purpose built blocks. Remember how Skylab's deployable micrometeorite/thermal shielding ripped off during launch? Perhaps there are better approaches to this problem today, but I think it's far easier to stick your station modules under an aerodynamic fairing (e.g. like the ones used for satellite launches) rather than try to make them bear the burden of their outer shell being designed for both aerodynamic launch forces and micrometeorite/thermal shielding.

Jeff

A clever person solves a problem.
A wise person avoids it. --- Einstein

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