

Shuttles forever? NASA reckons without its host (China).

The budget cuts will reduce the power of the bureaucrats and boost new players. Moreover, the Chinese competitor will soon break the quietness.

An interview with Michael Martin-Smith

D. 1) NASA deleted the X-33 project, and plans now to use the shuttles fleet for next 20 years. What do you think about such news? Does it mean that in the next 20 years we will not have the 1-10 reduction of the cost to orbit?

R. Not necessarily; firstly NASA awarded four contracts last year to private companies to develop small supply vehicles for the ISS- including Kistler Aerospace. Secondly NASA is still planning to begin a 4.5 billion dollars subcontracting programme to look for advanced designs for a decision in 2005- unless this has been shipwrecked as well!

D. 2) Is this a victory of the space bureaucrats, that in this way assure their wage for other 20 years by public money?

R. I am not so sure- I think it might even have been an attempt by President Bush to PREVENT NASA bureaucrats consuming too much money chasing dead ends.

D. 3) Was X33 such a bad project?

R. Yes and no -_ it has shown that linear aerospike engines can work and did some good work on thermal protection systems and avionics -- but the composite fuel tank was geometrically very difficult and difficult to prepare industrially; quite simply more small scale lab bench work would probably have helped; it may be that they were too ambitious and should have done something smaller and cheaper to develop the new materials. ESA for instance plans some much smaller and less ambitious demonstrator vehicles for about 4-5 years; these will take longer but will hopefully make clear the technologies and risks before big money is spent.

D. 4) Should we resign ourself to follow ISS-shuttles path for next 15 years?

R. I would think more like 10; remember there is scope for evolution even with the shuttle -- more automated servicing liquid fuelled boosters lighter weight components and so on.

D. 5) What else could really be an alternative? Does some private enterprise have any chance to really compete on this ground?

R. Yes, if NASA can really give guaranteed work to the smaller contractors for ISS supply as I mentioned earlier; gradual evolution now looks more likely than a quantum leap.

D. The article says that X33 "...relied on too many untested technologies, opponents argued, when a more practical but less glamorous design would do the job". Such fact starts speculations about reasons and future:

R. ESA is going that way I believe.

D. 6) is such "SF" strategy true?

R. Many of the private rocketeers believe that if the money given to X33 had been shared between even six of the private entrepreneurs there would be 2-3 working solutions to the problem within a couple of years.

D. 7) If yes, why did NASA adopted it, or never corrected it?

R. Too bureaucratic and also Lockheed Martin, the designers of Venturestar/X-33, are a leading player in expendable launch vehicles and do not want to cut their own throats too quickly. Maybe they want people to believe that cheaper systems are more difficult and so postpone the changeover...

D. 8) Was NASA never really aimed to cut the cost to orbit in short time?

R. They are a government agency and some of their top brass would not want space to be open to all -- they would lose control. The military also would not want open access.

D. 9) And, now, will they try with a more practical approach?

R. I think they might; if they are faced with a President who is really prepared to cut budgets even if it risks NASA going out of business, then the NASA bureaucrats would have a choice between cheap access to space or no access to Space (hence no jobs!) because of budget cuts; after all, the public may withdraw support altogether if there is no prospect of becoming astronauts. Finally I think two events could change this and lead to a new policy before your 15 years pass:

One) the presence of Chinese in Space in a Space station, and

Two) the growing interest in generating solar power and electricity from Space; this is potentially clean, renewable, and avoids dependence on Middle Eastern States. Small demonstration solar power generation and beaming of electricity as microwaves to Earth or another space asset could be underway from the ISS in 6-8 years, if some proponents get their way. Growing worries about global warming could make this an attractive option.

SPS would start small and grow incrementally over 20-30 years -- but this would stimulate a large development of space capacities and so transport.

[MMS - TDF 2/2001 - 28/04/2001]