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Send materials to Craig Byl, AIAA, 1801

Alexander Bell Drive, Suite 500, Reston, VA

20191-4344. Changes of address should be

sent to Customer Service at the same address,

by e-mail at custserv@aiaa.org, or by fax at

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Send Letters to the Editor to Elaine Camhi

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Editorial

Space, safety—and risk

The FY11 NASA budget request represents a sea change for the agency—not just in terms of missions but, at least for human space operations, in the way it will bring those missions to fruition. It would bring the curtain down on the Constellation program, the agency's dominant program over the last five years.

The new budget supports extending the lifetime of the international space station beyond its current 2016 expiry out to at least 2020, funding programs to increase station capabilities and enhance ground support. It also commits funds to complete the space shuttle's current manifest, even if it must be stretched into another year.

But the mission to return humans to the Moon and then travel onward to Mars would be cancelled, replaced by robotic precursor missions to varied destinations in the solar system, followed by human exploration.

Gone as well are Ares I and Ares V, meant to launch crew and cargo, respectively, as well as the Orion crew vehicle. But what is more telling is what is meant to take their place. Building upon the "successful progress in the development of commercial cargo capabilities," the budget authorizes the investment of \$6 billion over five years to "spur development of American commercial human spaceflight vehicles."

The passage of the president's budget request is by no means certain, and portions of the Constellation program such as the Orion, which has made considerable progress, might be redirected and survive in some guise, but the nation's future in space may well reside in the hands of commercial enterprise. Though they have often been partners with NASA, this new budget places the reins in their hands.

Many have argued since the decision was first reached to retire the space shuttle that human-rating the Atlas and Delta EELVs, which have excellent safety records, was a viable, lower cost alternative to reinventing the rocket yet again. It also would fall in line with the Augustine commission recommendations for a "flexible path" to space—albeit with lower funding.

But determining exactly what the criteria are for human-rating a launch vehicle is no easy task. Some argue that the directives laid down by the Columbia Accident Investigation Board are so rigorous that building a new vehicle under those strictures would be next to impossible.

Throughout the history of aviation in the U.S. there has always been the drive for the next generation—trying new vehicle shapes, new engines, even new fuels. Each new drawing, each new prototype was an effort to get us where we want to go more safely, more quickly, and as inexpensively as possible. Those criteria drove the development of a gamut of aircraft from the X-1 to the X-51, from the flying boat to the 787.

The pilots who sat in the cockpit of many of those experiments understood the risks they were taking—but were buoyed by the knowledge that some of the best minds in the nation were behind those aircraft. And so it went, and we did fly faster and further with each new effort. And though many were met with failure, and some with tragedy, we learned lessons from each and continued forward.

And so it should be now, with whatever the next launch vehicle turns out to be, that we put safety first, but not so much so that it keeps us Earthbound. The brave men and women who are the pioneers of this new century deserve nothing less—and, I believe, expect nothing more.

Elaine Camhi
Editor-in-Chief