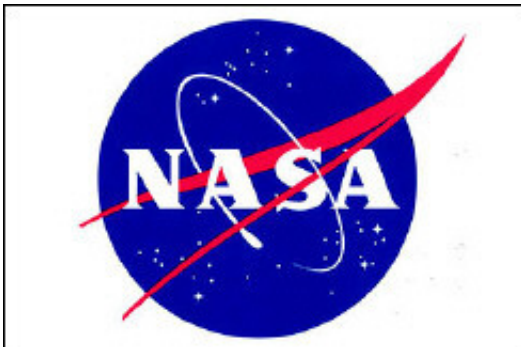


Analysis: NASA flails as forces pull on it from all directions

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NASA's human spaceflight program, once a symbol of America's technical supremacy, is flailing - beset by many of the same forces that once unified behind the agency to put a man on the moon.

With the [space shuttle](#) set to retire this year, and no successor imminent, today's [NASA](#) is being pulled apart by burdensome congressional demands, shrinking federal budgets, greedy contractors, a hidebound bureaucracy and an ambitious new [commercial space industry](#) that wants to shake up the status quo.

"Our civil space agency has decayed from Kennedy's and Reagan's visions of opening a new frontier to the point where it's just a jobs program in a death spiral of addiction and denial, with thousands of

honest innovators trapped inside like flies in bureaucratic amber," said space-policy consultant James Muncy.

Efforts to get the agency back on track are in trouble. Already, a new plan for NASA signed into law by President [Barack Obama](#) in October - to replace the Constellation program, which spent \$12 billion without producing a [rocket](#) - appears to be unraveling.

In a letter to Congress last week, NASA all but threw up its hands - telling lawmakers that it could not build the "heavy-lift" rocket and capsule Congress wants on the budget and schedule it demands. Congress had specified that NASA use solid-rocket motors designed for Constellation's Ares I rocket, as well as parts from the space shuttle, to speed construction of a new rocket.

But the agency has told the Orlando Sentinel that the new rocket could cost as much as \$20 billion - about \$9 billion more than the initial budget Congress has set - and take up to two years longer than the six-year deadline set by lawmakers.

Two key NASA backers in the Senate - Florida Democrat Bill Nelson and Texas Republican Kay Bailey Hutchison - responded with a simple message: Try harder.

But trying is unlikely to be enough given the agency's history of busting budgets, experts say. In 2004 and again in 2008, the Congressional Budget Office said that after studying 72 past NASA projects, it found that cost overruns of as much as 50 percent are routine for the agency.

And though Congress wants NASA to cut costs, it also wants the agency to continue using NASA's expensive work force and existing cost-plus contracts - meaning it will be very difficult to slash overhead costs.

But extending those contracts, as Nelson and Hutchison are demanding, might not be so easy.

In recent weeks, key aerospace companies have demanded that NASA open the new rocket project to competition or face the prospect of lawsuits.

One, aerospace giant Aerojet, told NASA in a letter Dec. 1, that "we do intend to compete" for the solid-rocket boosters and engines that Congress wants put on the new rocket.

Aerojet makes solid rockets as well as liquid-rocket engines. The company has long been unhappy that NASA awarded a no-bid contract for the first stage of the Ares I rocket to rival solid-rocket manufacturer ATK, in part on the erroneous grounds that it was the country's only producer of large solid-fuel rockets.

With a new project in the offing, Aerojet wants the chance to win the business back.

"Aerojet believes that the only affordable and sustainable path ... is achieved through competition," the letter said.

But a new competition - combined with the inevitable protests and legal challenges that would follow it - runs the risk of further slowing any effort to quickly convert pieces of the shuttle and Constellation into a new spacecraft system by Dec. 31, 2016, as the new law demands.

Senate staffers who helped craft the new law say that NASA has no choice but to extend the contracts. However, several contracting lawyers disagree, saying that a new rocket is a significant-enough change in the scope of the project as to require NASA to rebid the contracts or face potentially lengthy legal action.

Aerojet officials would not comment on the letter, and NASA would only say that it is still considering its options.

Nelson and Hutchison were not amused.

"The law directs NASA to build on past investments in human spaceflight by leveraging existing knowledge from the space shuttle and Constellation programs," they said in a letter to NASA Administrator Charlie Bolden. "We expect NASA to work with Congress to identify ... how existing contracts and technologies will be utilized," reminding Bolden that this was not optional. "It is the law."

Bolden, for his part, has been conspicuous by his absence, almost invisible to the public and refraining from any public comments on the agency's new direction.

NASA spokesman Michael Braukus said the agency "is committed to finding the necessary efficiencies to drive costs down and develop this system as soon as possible." He promised "cultural changes (that will) drive down development and operational costs through innovation, improved practices, right-sized infrastructure and reducing other fixed costs."

Some observers are sympathetic to the agency's plight.

"It's a really tough spot to be in. And all indications are that's going to get tougher because of the fiscal situation," said Howard McCurdy, a space expert at American University. He said a major problem is that NASA is still rooted in the big-budget, big-project approach of the Apollo program of the 1960s.

"The brute-force method of spaceflight is in control (of NASA), and it's very susceptible to spending cuts," he said, adding that the new law was

"another case of Congress trying to repeal the law of physics."

As the turmoil grows, new aerospace entrepreneurs, led by Elon Musk of SpaceX, are pressing NASA privately for an opportunity to show that, given the chance, they could build NASA's new rocket at a fraction of the cost. Musk, whose company recently launched a capsule into orbit and returned it, has told friends that he thinks SpaceX could build a rocket able to fly to the moon for around \$3 billion.

But members of Congress are skeptical and reluctant to allow upstarts such as Musk to muscle in on what they regard as a unique government franchise. And traditional aerospace companies such as Lockheed Martin are furiously lobbying against the idea, not least because Musk is a threat to their bottom lines.

Perhaps the biggest loser in all this is Kennedy Space Center, whose primary role is preparing NASA spacecraft for launch.

The facility is set to lose 6,000 space-shuttle jobs when the orbiters are retired later this year and now faces the prospect of having no new rocket to launch for much of this decade.

"A prolonged delay to the shuttle's replacement is catastrophic to KSC," said Dale Ketcham, director of the University of Central Florida's Spaceport Research & Technology Institute.

"The new heavy-lift rocket called for by Congress was not bringing lots of jobs here soon, but it was a part of our future recovery," he said.

"With this new Congress and the new rocket in limbo, and with the future of commercial space unclear, without a miracle, Brevard will but watch as the rest of the country recovers."

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