

# Senate compromise may be setting up NASA for another failure

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Months of debate about NASA's future effectively ended Thursday when a key U.S. Senate panel unanimously approved a compromise plan with the White House that kills the Constellation moon-rocket program and sets NASA on an uncertain path toward building a new rocket.

But even as members of the Senate Appropriations Committee congratulated one another, top [NASA](#) officials and space analysts warned that the government [rocket](#) created by the compromise eventually could end up in NASA's scrap heap alongside other abandoned replacements for the space shuttle.

The plan orders NASA to build a heavy-lift rocket and capsule capable of reaching the [International Space Station](#) by 2016. But it budgets less money for the new spacecraft -- about \$11 billion during three years, with \$3 billion next year -- than what the troubled Constellation program would have received. That -- plus the short deadline -- has set off alarms.

Days before the compromise was announced, [NASA Administrator](#) Charlie Bolden and Deputy Administrator Lori Garver told its two champions -- U.S. Sens. Bill Nelson, D-Fla., and Kay Bailey Hutchison, R-Texas -- that NASA could not finish the proposed new rocket before 2020, according to three sources present at the meetings.

When asked about the conversation, Nelson spokesman Dan McLaughlin said the NASA officials were responding to lower dollar figures than what Congress ultimately approved. NASA spokesman Michael Cabbage

said it "would not be appropriate to discuss private conversations between NASA and members of Congress."

But requiring the rapid construction of a new spacecraft was critical in securing widespread political support -- even if the bill's supporters knew it would be an uphill climb for an agency with a reputation for busting budgets and deadlines.

"Getting to this point required so much hard work and many trade-offs," said Hutchison when the compromise was unveiled last week. The new launch system, she added, would "challenge the best minds at NASA to develop a system on an aggressive schedule."

Under the compromise, NASA must build a rocket that could lift payloads of at least 70 tons, including astronauts, to the station, which orbits about 200 miles above Earth. It also must be designed so it could evolve into a bigger rocket with a lifting capacity of 130 tons or more that could eventually attempt missions beyond low Earth orbit, such as trips to nearby asteroids.

As an added requirement, NASA engineers must do all they can to incorporate pieces of both the shuttle, due to retire next year, and the now-defunct Constellation program. And in a nod to Utah legislators -- who represent the solid rocket motor company ATK -- the bill all but requires NASA to continue testing solid rocket motors, even if they are not guaranteed a place in the spacecraft's final design.

With so many conditions, experts have raised doubts about the project's viability.

"I am afraid that when they start to design it, the design will run into trouble and the next administration down the road will say, 'This doesn't make sense; let's put a hold on it,' and it will be (another) failure ... and

that would be terrible," said John Grunsfeld, a former NASA chief scientist and a five-time astronaut who served on three missions to service the Hubble Space Telescope. He also warned that using an expendable heavy-lift rocket to get to the space station would be "very costly to operate."

"You can't do any of this on the cheap. You can't rush it," added Cristina Chaplain, a veteran space analyst for the Government Accountability Office. "There are challenges in completing any large projects on time and on budget for a variety of reasons."

Since 1990, the GAO has designated NASA as "high risk" because of "persistent cost growth and schedule slippage in the majority of its major projects," according to the agency's most recent report on the topic.

The area of human spaceflight has been especially problematic. The most recent casualty is Constellation, which cost at least \$9 billion during five years and was canceled because a presidential space panel concluded that it had no chance of meeting its goal of a moon landing by 2020.

Constellation joins a growing list of dead-end NASA projects, including the X-33, a single-stage spacecraft canceled in 2001 after five years and \$1.3 billion, and the Space Launch Initiative, an effort to develop a shuttle replacement that was also abandoned earlier this decade.

Chaplain blamed NASA's long history of "overpromising" capability and "underestimating" cost, but other experts said Congress shares in the fault. Overhanging both explanations is the simple fact that rocket science is hard and needs the appropriate time and funding to work.

"Even if you spend 90 percent (of what's necessary) to build a rocket, you end up with nothing," said space historian Howard McCurdy of

American University. "You can do that (to make it work) politically, but the rocket is going to end up in the ocean."

Like many federal programs, he said, NASA is bedeviled by lawmakers looking for jobs in their home states and companies looking after their bottom line.

"I think NASA gets nibbled to death by lots of people," McCurdy said.

Besides money for the new rocket, the compromise also spends about \$1.5 billion during three years to help commercial companies build their own [spacecraft](#) to reach the station -- as President Barack Obama has advocated -- and adds a third shuttle flight in mid-2011 to the two remaining flights now scheduled. It would also include about \$1.3 billion during three years for "modernization" of Kennedy Space Center and the Cape Canaveral Air Force Base launch facilities.

As it stands, the path for the NASA compromise to become law runs through must-pass spending bills that likely will come up for votes later this year. There remains an outside chance that it could be scuttled by dissenters in the House, but the combined support of the White House and Senate means compromise backers have the heavy advantage when dealing with House leaders.

Still, the long odds didn't prevent members of the House Science and Technology committee from pushing their own vision for NASA on Thursday.

The House plan -- which supporters said could come up for a floor vote next week -- essentially tries to revive Constellation while slashing funding for commercial-rocket development. It budgets more than \$4.1 billion for a restructured Constellation program in 2011.

"(In the past) we haven't given NASA the resources they need to do the missions we ask them to do. That's why I think our bill is the better bill," said U.S. Rep. Pete Olson, R-Texas. "You have to make tough choices."

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