

# NASA may delay 2020 moon launch

April 22 2009, By Robert Block and Mark K. Matthews

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NASA's plans to return astronauts to the moon are quietly being revised and are in danger of slipping past 2020.

In meetings over the last few weeks at Kennedy Space Center, agency managers have told employees and contractors that they are delaying the first lunar launch of the Ares V rocket -- a cargo hauler slated to be the most powerful rocket ever built -- by two years. NASA's internal plans had called for Ares V to go to the moon in 2018, though the agency had announced a public goal of 2020. Internal deadlines are used by [NASA](#) to keep programs on track and to provide a margin of error for developmental problems.

But because of growing budget woes, the agency is resetting its internal date to 2020. And privately, engineers say that means the public 2020 date to send humans back to the moon is in deepening trouble.

The news is another major blow to KSC; the facility had hoped to get the moon-rocket program up and running as quickly as possible to offset thousands of job losses from the space shuttle's retirement next year.

One contractor sent a BlackBerry message this week to The Orlando Sentinel following a meeting with KSC officials who told his group about the decision to delay Ares V.

"It was not received with enthusiasm," the contractor wrote. "(We) understand what that means for the work force."

In a speech last week, former NASA administrator Mike Griffin blamed the White House -- especially the Bush administration. He said that money available for Ares V and other moon projects had dropped from roughly \$4 billion through 2015 to just \$500 million.

"This was to be allocated to early work on the Ares V heavy-lifter, and the Altair lunar lander," he told the National Space Club annual Goddard Memorial Dinner. "With only a half-billion dollars now available, this work cannot be done."

NASA officials would not comment.

"We cannot discuss any changes to Ares V until after the budget is officially released at the beginning of May," spokesman Grey Hautaluoma said. "Nothing definitive can be said about Ares V development cost at this point in time."

But the slip of the Ares V flight is significant.

The 2020 lunar launch date is a policy objective set by President George W. Bush in 2004 and recently reaffirmed in President Barack Obama's 2010 budget proposal. It's part of what the Obama team in February called a new chapter of "robust human and robotic space exploration."

Ares V is supposed to be a cargo rocket that will deliver "large-scale hardware" to space -- including the Altair lunar lander and all the materials necessary to establish a manned [moon](#) base. The rocket will be 381 feet tall and weigh 7.4 million pounds at liftoff, making it the most powerful ever built.

Engineers say the reason for the Ares V delay is that its sister ship, the Ares I, is taking longer and costing more to develop than originally planned. Unlike the Apollo-era Saturn V and the [space shuttle](#), which

launched crew and cargo on the same rocket, NASA's Constellation program plans to use the Ares I for crew and the Ares V for cargo.

Ares I, topped by an Orion capsule designed to carry six astronauts, is supposed to replace the space shuttle and make its first flight to the international space station by 2015. NASA's internal schedule had originally called for a 2013 liftoff, but design and cost issues forced NASA to delay that date too.

Now NASA is struggling to make the 2015 date. Hopes to speed up the rocket's development are evaporating fast.

An internal NASA study last year of how Ares I could be built faster portrays a program that is financially strapped and technically challenged. To speed up development would require at least \$3.8 billion more over the next few years.

The "Constellation Acceleration Study" -- obtained by The Orlando Sentinel through a Freedom of Information Act request -- said that half that amount was needed just to cover \$1.9 billion in cost overruns resulting from design changes to the Ares I and the Orion crew capsule.

Among the costly changes: a decision to land Orion in the ocean, rather than on hard ground, and a plan to install dampers on Ares I to counteract violent shaking caused by its solid-rocket first stage.

"These costs must be addressed irrespective of acceleration," the study said.

And even getting more money -- considered extremely unlikely -- is no guarantee, as the program continues to fall behind.

The study said "a few key decisions" should have been made before

April 1, including preparing Marshall Space Flight Center in Huntsville, Ala., to start building parts of the rocket while the designers work to speed up the development process.

Without more money, the study said, meeting a 2015 launch date would require NASA to implement "all no-cost and cost-avoidance strategies as soon as possible." Among the changes it recommends are simplifying the design of the rocket and capsule, streamlining tests intended to double-check how different systems work, and scrapping plans to use sophisticated new computer programs to help fly the spaceship.

Some safety engineers fear those are moves that could mean cutting corners as well as costs.

According to agency officials, NASA engineers have already started to scrap some tests and software programs. But NASA insists that the program would never sacrifice safety for schedule and says that it has no plans to abandon its current rocket designs.

To save weight and cost, NASA is even considering reducing the size of the crew that can fly on the Orion capsule from six to four. Orion was originally designed for up to six astronauts so it could carry a full crew to and from the space station.

"NASA is not cutting corners," Hautaluoma said. "Any reduction in content driven by cost that might affect our overall risk would be done with the greatest care so as to not compromise our success."

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