

## A Review of NASA's Space Launch System

*Witness*

**Charles F. Bolden, Jr.**

Administrator of the National Aeronautics and Space Administration

### *Committee Members Present*

Ralph Hall, Chair (R-TX)

Eddie Bernice Johnson, Ranking Member (D-TX)

Roscoe Bartlett (R-MD)

Steven Palazzo (R-MS)

Chip Cravaack (R-MN)

Dana Rohrabacher (R-CA)

Sandy Adams (R-FL)

Randy Hultgren (R-IL)

Larry Bucshon (R-IN)

Mo Brooks (R-AL)

Chuck Fleischmann (R-TN)

Andy Harris (R-MD)

David Wu (D-OR)

Zoe Lofgren (D-CA)

Marcia Fudge (D-OH)

Terri Sewell (D-AL)

Frederica Wilson (D-FL)

Jerry McNerney (D-CA)

Donna Edwards (D-MD)

John Sarbanes (D-MD)

Hansen Clarke (D-MI)

### *Non-committee Members Present*

Sheila Jackson Lee (D-TX)

The House Committee on Science, Space, and Technology received testimony from National Aeronautics and Space Administration (NASA) Administrator Charles F. Bolden on July 12, 2011. The original intent of the hearing was to discuss details on NASA's plan for a heavy-lift launch system for deep-space exploration. However, on July 7, 2011 NASA officials announced that the plan would not be ready until late summer. Under the NASA Authorization Act of 2010 (P.L. 111-267), it was to be completed by mid-January 2011.

Committee Chairman Ralph Hall (R-TX) began the hearing with an opening statement criticizing NASA and the Obama administration. The six-month delay in presenting the plan, he said, "represents almost an insult to this committee and this Congress," adding that it "reflects poorly on the administration and its space program." Hall noted that NASA has struggled with an insufficient budget since the 1990's, with the major decreases in government spending occurring under the Clinton administration. Committee Ranking Member Eddie Bernice Johnson explained in her opening statement that three successive authorization acts over the past six years have called for a program for human exploration beyond low-Earth orbit yet NASA still has not presented a plan for such activity.

NASA Administrator Charles Bolden began his testimony by emphasizing that he is the person to blame for the delays, not the Obama administration. He explained that NASA is making decisions in challenging fiscal times and that it would be irresponsible to present the plan to Congress without firm cost estimates, which they do not yet have. He concluded that the plan will ideally be ready by the end of this summer but may take even longer. However, he confidently assured, "American leadership in space will

continue for at least the next half-century.” Bolden added that NASA aims to reach an asteroid by 2025 and eventually Mars and its moons.

Much of the question and answer period focused on NASA's budget with committee members from both parties recognizing NASA's fiscal constraints. Chip Cravaack (R-MN) asked what poses the biggest threat to American space exploration and Bolden responded without hesitation “the economy.” Donna Edwards (D-MD), Mo Brooks (R-AL), and Hansen Clarke (D-MI) all expressed concern over the House Appropriations Committee's July 6 budget proposal which would eliminate the James Webb Space Telescope, the successor of the Hubble Telescope. This would be part of a 1.6 billion dollar decrease in NASA's fiscal year (FY) 2012 budget from the FY 2011 budget. Clarke explained that 8,000 scientists would lose their jobs as a result.

Jerry McNerney (D-CA) asked Bolden about the benefit of manned versus non-manned space exploration. Bolden responded that the first astronauts to reach the moon were highly trained in geology and they collected rocks that had never been seen before, which they had not been instructed to bring back. He explained that a robot would not be able to do this. Bolden concluded that this is just one example of the importance of manned space flight.

Johnson, Chuck Fleischmann (R-TN), and Andy Harris (R-MD) asked Bolden about the future of NASA's low-Earth orbit activities. Johnson asked particularly about the future of the International Space Station. Bolden explained that NASA has budgeted to visit the station until 2020, emphasizing that “we are not abandoning human space flight.” He added that low-Earth orbit space flight will become a commercial activity under the President's plan. Harris asked if the U.S. would rely on Russia for space flight for the next four years until NASA's new space program begins. Bolden responded that the U.S. will depend on both international partners and commercial entities. Fleischmann asked if NASA plans to have another trip to the moon in the near future. Bolden responded that there will probably need to be another lunar trip before travelling to an asteroid or Mars. He said that there will probably also need to be a trip to geosynchronous orbit for satellite repair.

Dana Rohrabacher (R-CA) criticized the focus on deep-space exploration rather than low-Earth orbit activities. “We're chasing something for the distant future rather than doing what we could do today,” he said. He emphasized that focusing on exploring deep-space with humans wastes billions of dollars that could be spent on more fiscally efficient activities such as maintaining telescopes and cleaning up space debris. Steven Palazzo (R-MS), chairman of the Subcommittee on Space and Aeronautics, questioned why NASA's first long-term goal is to reach an asteroid. Bolden responded that the most important reason is that the prospect of an asteroid coming close, or even hitting, Earth in the near future is not outlandish. By studying asteroids, he explained, humans will improve understanding of how to protect the planet from such an event.

Johnson and Roscoe Bartlett (R-MD) both discussed NASA's important role in encouraging students to pursue careers in science, technology, engineering, and mathematics (STEM). Bartlett recalled the impact of humans reaching the moon by inspiring students to pursue careers in STEM disciplines in the 1970s. “No one is capturing the imagination of our young people,” he said, adding that China has seven times as many graduates in STEM disciplines than the U.S. each year. Johnson further expressed concern over the message that consistent decreases in NASA's budget sends to the next generation of scientists. Bolden agreed that the U.S. is failing to inspire students to pursue math and science careers, but added that the lack of interest in STEM disciplines is a problem all over the world. He explained that NASA employees visit schools all over the country to encourage STEM education.

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