

Eileen Collins' Witness Statement

Hearing on "The Space Leadership Preservation Act and the Need for Stability at NASA"

U.S. House of Representatives

Committee on Science, Space, and Technology

Feb 25, 2016

Chairman Smith, Ranking Member Johnson, and Committee Members: it's a pleasure to be here today, with an opportunity to speak about the future of our great country, and to share my perspective as a former space shuttle commander. I have a passion for exploration, and am firmly committed to the success of our country's space adventures.

A few words about my background: I am a former Air Force pilot, a graduate of the Air Force Test Pilot School, and a veteran of four space flights. I served five years on the NASA Advisory Council, from 2007-2011, and currently serve on the National Academy of Sciences' Aerospace Science and Engineering Board. Although I serve on this and several other advisory boards, I am here today representing myself only and not any organization.

In my opening comments, I have three general points:

First, I thank you for asking the opinion of the "operators" of our space systems (or "the guys in the trenches", so to speak). I hope I can give you an operational perspective from the astronaut's point of view.

Second, I cannot emphasize enough, the love Americans have for their space program. As a speaker and advisor, I routinely meet people all around the United States. They are inspired by human spaceflight and excited about scientific discoveries. They see the space program as a bright future, where we can imagine possibilities both human and technical.

Frankly, the "brand" of NASA is easy to love.

For example, my story began in 4<sup>th</sup> grade, where I read a magazine article about the Gemini astronauts. Since then I have wanted to fly in space and be part of this great adventure. It led me to the study of mathematics and a flying career. Today, I see people of all ages "light up" when the subject of space travel is discussed. In my opinion, the history of American exploration is right up there with baseball, apple pie, and the fourth of July.

My Third point concerns the purpose and stability in the human spaceflight program. Obviously, the success of any decades-long program is related to the long term commitment from the top. First, the mission is defined. Next, the strategy is set. Then, the operational plan is written;

which includes a test plan. A test plan includes a “build up” approach. As we run a test program, occasionally technical changes will need to be made because we learn as we go. Sometimes we make mistakes when we do things for the first time. But necessary technical changes will not affect the originally defined mission. That must stay stable so the team members can stay focused on the outcome.

My idea of a successful program is: cut the fat, integrity always, get the smartest people, and remind them every day that leadership is committed to supporting the mission. There’s more, but that’s the meat of it.

I understand the long range vision for the US human spaceflight program is landing a human on Mars. I support that mission. I hope that first person is an American. We can do it. And frankly, we can afford it. Those who say we can’t are just putting their priorities elsewhere.

When asked about how best to prepare for a successful Mars mission, as a crewmember, I certainly would like to see the hardware tested on the moon’s surface first. This is part of a test plan’s “build up approach”. Policy leaders are asking astronauts to risk their lives on space journeys, and it is our experience that testing in similar environments will minimize risk.

When the Constellation Program was cancelled in 2010, some people said: “Why go back to the Moon? We’ve already been there!” Imagine the year 1806, when Meriwether Lewis and William Clark returned from their 2 ½ year journey of exploring the western continent. They and their team are declared national heroes. But then no one else goes back because “we had already been there”. This is almost inconceivable.... It would diminish the entire reason for going in the first place!

I was a member of the NASA Advisory Council when Constellation was cancelled. I was shocked as were my colleagues, first because it was SO unexpected, and second because of the timing so close to the end of the shuttle program, which left NASA with no options. The legislation we are discussing today: “The Space Leadership Preservation Act and The Need for Stability at NASA” has ideas that will certainly address this problem. I am not wedded to any specific proposal but this problem needs to be addressed, especially given the billions of dollars wasted as a result and the lost time and motivations of engineers and astronauts.

I believe program cancellation decisions that are made by bureaucracies, behind closed doors, and without input by the people, are divisive, damaging, cowardly, and many times more expensive in the long run. As a shuttle commander, I would never make a huge decision without input from all the experts, even the ones I do not agree with. So what will keep us from having surprises like this that set us back years? Answer: A continuity of purpose over many years, over political administrations, and over normal changes in leadership throughout the chain of command. I know there must be ways to do this through policy, organizational structure, and strong leadership.

Strategic stability will give the team efficiencies and a focus that we saw in the Apollo program. Apollo happened by “the end of the decade” because people knew exactly what the mission was and when it should happen. They believed in it. And of course it was properly funded. There was not much division over what the mission was: and NASA was given the responsibility to figure out how to do it. The result was dedication, passion, and success. I know we can do this again.