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Statement of  
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Chairman  
National Aeronautics and Space Administration's  
Aerospace Safety Advisory Panel

before the

Committee on Science and Technology  
U.S. House of Representatives

Chairman Gordon, Ranking Member Hall and distinguished Members, thank you for the opportunity to appear before you today. As requested, I would like to present the perspective of the NASA Aerospace Safety Advisory Panel with regard to the Options and Issues for NASA's Human Space Flight Program.

The Aerospace Safety Advisory Panel (ASAP) was originally established under Section 6 of the NASA Authorization Act, 1968 (42 U.S.C. § 2477). In 2005, the ASAP authority was modified under Section 106 of the NASA Authorization Act of 2005 (P.L. 109-155).

The ASAP's charge is, among other things, to advise the NASA Administrator and the Congress with respect to the hazards of proposed or existing facilities and proposed operations with respect to the adequacy of proposed or existing safety standards, and with respect to management and culture related to safety.

My goal this afternoon is to share with the Committee much of the same information I shared with the Review of U.S. Human Space Flight Plans

Committee on 14 July of this year. I shall restrict my remarks to safety and safety-related opportunities and issues.

In general, the ASAP is both respectful and appreciative of the summary report released by the Review of U.S. Human Space Flight Plans Committee. They quickly conducted a broad and far reaching review of current plans and potential alternatives. The ASAP does believe the tempo and time available prevented the thorough consideration of risks and safety challenges that we would have liked to have seen.

We note that the Review of U.S. Human Space Flight Plans Committee summary report compares current plans for the Constellation program with a number of conceptual alternatives. Here, we offer a word of caution -- PowerPoint presentations addressing future programs will always out shine current programs of record. Why is that the case? It is because current programs have garnered the professional peer and public review during the accomplishment of real work. Technical challenges will have been discovered, cost stress will have been revealed, and the reality of conducting high risk business in an unforgiving environment will have been highlighted and publicized. Future concepts do not yet have the benefit of this reality testing. This experience led to one of the ASAP's prime recommendations presented to the Review of U.S. Human Space Flight Plans Committee. Specifically, the ASAP believes that if Constellation is not the optimum answer, then any other new design must be substantially superior to justify starting over.

“Starting over” would surely and substantially extend the gap in the Nation’s ability to transport humans into space. As it is directly related, I want to share the ASAP’s strongly held position regarding the Shuttle: ASAP does not support extending the shuttle beyond the current manifest. The substantiation of this recommendation is addressed in the Aerospace Safety Advisory Panel 2008 Annual Report which I respectfully request be included in the hearing record.

The ASAP’s 2008 Annual Report also addresses the NASA Commercial Orbital Transportation Services (COTS) Project. The Panel noted NASA needs to take a more aggressive role articulating human rating requirements for the COTS Project. COTS vehicles currently are not subject to the Human-Rating Requirements (HRR) standards and are not proven to be appropriate to transport NASA personnel. There is no evidence that the

COTS vehicles will be completed in time to minimize the gap between Shuttle and the follow-on program. Additionally, we note that NASA, and at least one of the COTS funded partners, hold widely divergent views as to what is required for human-rating.

An area where the ASAP and the Review of U.S. Human Space Flight Plans Committee are in strongest possible agreement is with regard to budget. The ASAP has noted the need for NASA and the Congress to address an imperative to achieve better harmony among requirements, resources and acquisition strategy. The inevitable pressure to shortcut good process in the face of a budget shortfall is THE most damaging infliction upon a proper safety culture and the conduct of good design.

Making better use of robots is another area where the Review of U.S. Human Space Flight Plans Committee and the ASAP have made similar recommendations. The ASAP believes unmanned systems – both stand alone and integrated with astronauts – offer potential to reach farther and to improve safety. The ASAP has highlighted the role of unmanned systems in support of human exploration in the next decade requires clarification by NASA. Historically, NASA robots have been embraced mostly by the scientific community and to a much lesser extent by human space flight programs. NASA will be well served to better develop the process by which manned and unmanned systems are integrated. Undertakings as diverse as construction and mining demand coordinated manned and unmanned systems design.

Given good direction, consistency of purpose, and sufficient resources, Constellation, or an alternative program, offers a one-time opportunity for safety to be better hardwired into overall NASA processes. Experience shows one of the best ways for a large organization to advance the state of art of its processes is to institutionalize procedures developed by a major new program that is highly motivated and staffed with the best and brightest. We would have liked for the Review of U.S. Human Space Flight Plans Committee to have more strongly highlighted this point as well.

Lastly, the ASAP would like to champion a broader discussion of risk. Lives will be lost in future human exploration of space. We are lucky to have brave men and women willing to undertake exploration in support of mankind even in the face of these risks. We believe there is need for greater dialogue about risk and that NASA, the White House and the Congress must

all shoulder the burden of risk and the necessity of being more transparent with the citizens of our country regarding that risk.

Chairman Gordon, Ranking Member Hall, and distinguished Members, in closing I would like to note that the new NASA Administrator, Charlie Bolden, has been a member of the ASAP for the last several years. We know him very well and take strong comfort in his ability to lead the Agency during these challenging times. I thank you again for the opportunity to appear today.