



Highlights of [GAO-12-587T](#), a testimony before the Committee on Science, Space, and Technology, House of Representatives

NASA

Significant Challenges Remain for Access, Use, and Sustainment of the International Space Station

Why GAO Did This Study

Construction of the International Space Station (ISS) required dedication and effort on the part of many nations to be successful. Further, the funding necessary to accomplish this task was significant, with the United States alone directly investing nearly \$50 billion in its development. As construction of the on-orbit laboratory is complete, now is the time for the United States and its partners to make use of this investment and recently, Congress took steps to extend the life of the ISS until at least 2020.

GAO has cautioned for years that NASA should ensure it has a capability to access and utilize the space station following retirement of the space shuttle in 2011. We have highlighted the challenges associated with transporting cargo and crew to and from the ISS, as well as the difficulties NASA faces in ensuring the ISS supports its purpose of scientific research and in safely operating the station. Some risks have been realized. For example, commercial vehicles are significantly behind schedule—with the first launch to the space station planned for 2012.

GAO's statement today will focus on the progress NASA has made and the challenges the agency faces in accessing, ensuring full utilization of, and sustaining the ISS. To prepare this statement, GAO relied on prior relevant work on the ISS and NASA's commercial cargo and crew efforts and conducted a limited amount of additional work to update planned flight information.

View [GAO-12-587T](#). For more information, contact Cristina Chaplain at (202) 512-4841 or chaplainc@gao.gov.

What GAO Found

NASA plans to use international partner and new domestic commercial launch vehicles to access, utilize, and sustain the International Space Station from 2012 through 2020. However, the agency faces challenges in transporting cargo and crew to the ISS as well as ensuring the station is fully utilized. NASA's decision to rely on the new commercial vehicles to transport cargo starting in 2012 and to transport crew starting in 2017 is inherently risky because the vehicles are not yet proven and are experiencing delays in development. Further, NASA does not have agreements in place for international partners to provide cargo services to the ISS beyond 2016. The agency will also face a decision regarding the need to purchase additional seats on the Russian Soyuz vehicle beyond 2016, likely before commercial vehicles have made significant progress in development, given the three-year lead time necessary for acquiring a seat. This decision is further complicated because restrictions prohibit NASA from making certain payments to Russia in connection with the ISS unless the President makes a determination. Further, NASA currently expects to transport all cargo needed by the ISS in 51 flights through 2020, but if international partner agreements and commercial service contracts do not materialize as the agency plans for the years beyond 2016, the situation could lead to a potential cargo shortfall.

If NASA can access the station, it will next be challenged with fully utilizing the ISS national laboratory for its intended purpose—scientific research. To take steps to meet this challenge and consistent with a 2009 GAO recommendation, in 2011 NASA selected an organization to centrally oversee ISS national laboratory research decision-making. It is too soon, however, to determine whether this organization is ensuring full scientific utilization of the ISS. Regardless of the efforts of the management body, as GAO noted in a 2009 report, constraints on crew time for conducting science could also impact full utilization.

If NASA can overcome its challenges related to accessing the station, it has reasonable approaches in place for estimating spare parts and assessing the structural health of the space station. These approaches provide NASA with increased assurance that the agency will have sufficient spares and will put mitigations in place to effectively and safely utilize the space station.

International Space Station



Source: NASA.