

GAO Highlights

Highlights of [GAO-19-716T](#), a testimony before the Subcommittee on Space and Aeronautics, Committee on Science, Space, and Technology, House of Representatives

Why GAO Did This Study

NASA is undertaking a trio of closely related programs to continue human space exploration beyond low-Earth orbit. These three programs include a launch vehicle, a crew capsule, and the associated ground systems at Kennedy Space Center. All three programs are working towards a launch readiness date of June 2020 for the first mission. NASA then plans for these systems to support future human space exploration goals, which include seeking to land two astronauts on the lunar surface. GAO has a body of work highlighting concerns over NASA's management and oversight of these programs.

This statement discusses (1) the cost and schedule status of NASA's human spaceflight programs and (2) lessons that NASA can apply to improve its management of its human spaceflight programs. This statement is based on eight reports issued from 2014 to 2019 and selected updates as of September 2019. For the updates, GAO analyzed recent program status reports on program progress.

What GAO Recommends

GAO has made 19 recommendations in these eight prior reports to strengthen NASA's acquisition management of SLS, Orion, and EGS. NASA generally agreed with GAO's recommendations, and has implemented seven recommendations. Further action is needed to fully implement the remaining recommendations.

View [GAO-19-716T](#). For more information, contact Cristina T. Chaplain at (202) 512-4841 or chaplainc@gao.gov.

NASA

Actions Needed to Improve the Management of Human Spaceflight Programs

What GAO Found

The National Aeronautics and Space Administration's (NASA) three related human spaceflight programs are in the integration and test phase of development, a phase of the acquisition process that often reveals unforeseen challenges leading to cost growth and schedule delays. Since GAO last reported on the status of these programs in June 2019, each program has made progress. For example, the Orion program conducted a key test to demonstrate the ability to abort a mission should a life-threatening failure occur during launch. As GAO found in June 2019, however, the programs continue to face significant schedule delays. In November 2018, within one year of announcing an up to 19-month delay for the three programs—the Space Launch System (SLS) vehicle, the Orion crew spacecraft, and Exploration Ground Systems (EGS)—NASA senior leaders acknowledged the revised launch date of June 2020 is unlikely. In addition, any issues uncovered during integration and testing may push the date as late as June 2021. Moreover, GAO found that NASA's calculations of cost growth for the SLS program is understated by more than 750 million dollars.

Artist Rendering of Space Launch System



Source: National Aeronautics and Space Administration. | [GAO-19-716T](#)

GAO's past work has identified a number of lessons that NASA can apply to improve its management of its human spaceflight programs. For example, NASA should enhance contract management and oversight to improve program outcomes. NASA's past approach in this area has left it ill-positioned to identify early warning signs of impending schedule delays and cost growth or reap the benefits of competition. In addition, NASA's approach to incentivizing contractors through contract award fees did not result in desired outcomes for the SLS and Orion programs. Further, NASA should minimize risky programmatic decisions to better position programs for successful execution. This includes providing sufficient cost and schedule reserves to, among other things, address unforeseen risk. Finally, realistic cost estimates and assessments of technical risk are particularly important at the start of an acquisition program. But NASA has historically provided little insight into the future cost of these human spaceflight programs, limiting the information useful to decision makers.