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Transfer of a Space Vehicle: Issues for Congress

P.L. 119-21, the FY2025 reconciliation act signed into law on July 4, 2025, provides for the transfer of a space vehicle designated by the National Aeronautics and Space Administration (NASA) Administrator to a NASA facility involved in the administration of the Commercial Crew Program and subsequently to a designated entity within the same metropolitan statistical area as the NASA facility for public display. Section 20306(b) of P.L. 119-21 specifies that the space vehicle to be transferred must have flown into space, have carried astronauts, and be selected with the concurrence of an unspecified entity designated by NASA. Congress required that NASA obligate \$85 million for the transfer of the vehicle and construction of a display building; the NASA Administrator shall designate a qualifying space vehicle within 30 days of enactment of P.L. 119-21 (i.e., by August 3, 2025), and the space vehicle must be transferred within 18 months of enactment (by January 4, 2027).

Various media outlets have reported that the transfer of the space shuttle orbiter *Discovery* from the Smithsonian Institution's National Air and Space Museum Steven F. Udvar-Hazy Center in Chantilly, Virginia, to Space Center Houston in Texas, a science museum that serves as the official visitor center for NASA's Johnson Space Center, would comport with this language. Similar legislation was introduced in the House and Senate during the 119th Congress. On April 10, 2025, Senator John Cornyn introduced S. 1403, which was referred to the Senate Committee on Rules and Administration. On June 20, 2025, Representative Randy Weber introduced H.R. 4065, which was referred to the Committee on Science, Space, and Technology and the Committee on House Administration. The two bills, entitled the Bring the Space Shuttle Home Act, are identical in language and would require the Smithsonian and NASA to develop a plan to transfer *Discovery* to the Johnson Space Center, including a timeline and budget. Within a year after the date of transfer, the Smithsonian would be required to transfer the title of *Discovery* to NASA. NASA would be required subsequently to transfer *Discovery* to a nonprofit entity designated by the NASA Administrator that would maintain the vehicle and provide for public display. No further action has been taken on S. 1403 or H.R. 4065 as of the time of this writing. Further discussion of current legislation related to the Smithsonian is available in CRS In Focus IF12987, *Smithsonian Institution: Selected Legislation, 119th Congress*.

Which Space Vehicles Might Be Eligible for Transfer?

The criteria that the vehicle must have flown in space and carried astronauts describes numerous space vehicles.

In addition to *Discovery*, two other retired space shuttle orbiters fit these criteria: *Atlantis*, which is on display at NASA's Kennedy Space Center in Florida, and *Endeavour*, which is on display at the California Science Center in Los Angeles.

Other space vehicles on display in various public and private entities appear to fit these criteria as well. These include 15 Apollo Command Modules deployed in support of NASA's Apollo and Skylab programs; 10 capsules used in NASA's Gemini program; and two hypersonic aircraft used in the X-15 program, a joint effort between NASA and the U.S. Air Force. Most of these vehicles are in the custody of the Smithsonian Institution as the curator of space objects in the National Collection; one X-15 aircraft is on display at the Air Force Museum in Dayton, OH. Also, P.L. 119-21 does not specify that the qualifying vehicle must be inactive. Further, the provision does not explicitly exclude space vehicles owned by non-U.S. government entities.

The provision does not define or reference existing statutory definitions of the term *astronauts*. The term may be used broadly to describe individuals who have traveled to space; under such definitions, space vehicles that transported private citizens or citizens of other countries may qualify. For instance, *SpaceShipOne*—the first private vehicle to carry humans to space—may qualify. For information on possible definitions of the term *astronaut*, see CRS Insight IN12555, *Who Is an Astronaut? Safety Implications for Commercial Human Spaceflight*.

Potential Implementation Issues

NASA Administrator's Authority

The ability of the NASA Administrator to direct transfer of objects owned by non-NASA entities—including the Smithsonian and private organizations—is unclear and may be subject to question. This may, in turn, limit the range of space vehicles that may be eligible for transfer under this provision.

P.L. 119-21 specifies that the designated space vehicle be transferred to a NASA center "involved in the administration of the Commercial Crew Program" but does not define what activities may qualify. This may provide the Administrator with additional discretion regarding the final location of the space vehicle. NASA has listed its Kennedy and Johnson Space Centers as "lead centers" for the Commercial Crew Program. Other NASA centers may also be involved in various aspects of the program.

Space Shuttle Orbiter Transfers

The ownership of the qualifying space vehicles may affect the implementation of P.L. 119-21. When the Space Shuttle program concluded in 2011, Congress authorized NASA to dispose as surplus property the surviving orbiters and related equipment in Section 603 of P.L. 111-267, NASA Authorization Act of 2010. General principles of transfer of surplus federal property shift custody and ownership from the government to another entity, which may reduce the government's costs to maintain obsolete or unused property.

The three orbiters that had traveled to space—referred to as “flown orbiters”—were to be made available for display through a competitive process. The NASA Authorization Act of 2008 (P.L. 110-422, §613) directed NASA to submit a plan to Congress describing how NASA intended to evaluate potential recipients of the space shuttle orbiters. Congress formally ratified this plan in the NASA Authorization Act of 2010 (§603). This act directed the agency to give “priority consideration” to applicants whose locations have “best potential value to the public,” have a historical relationship with the Space Shuttle program, or made significant contributions to human spaceflight.

In 2011, after a competitive selection process, NASA announced the final locations of the retired space shuttle orbiters. Some Members of Congress disagreed with NASA's decision, and the NASA Office of Inspector General (OIG) investigated the agency's selection process. The NASA OIG report said that NASA, in keeping with property disposal principles, would transfer title of the orbiters to the receiving entities. Those entities would thereafter own the orbiters in perpetuity and be financially responsible for the costs associated with maintaining and displaying the orbiters.

Agreements between NASA and the recipients of the space shuttle orbiters may describe ownership of the vehicles. For example, the 2012 agreements between NASA and the Smithsonian memorializing the transfer of *Discovery* state that upon receiving the orbiter, the Smithsonian took ownership of *Discovery*. The documents also provide a mutual agreement between NASA and the Smithsonian that if the latter chooses to deaccession *Discovery* from its collection, NASA would have the first opportunity to reacquire the orbiter before Smithsonian took any other potential efforts to remove it from the collection. The transfer documents are silent about any authority of NASA to reacquire *Discovery* outside of such instances.

The ability of NASA to designate space vehicles displayed or owned by non-NASA entities for transfer is unknown. It is unclear whether the authority granted to the NASA Administrator in this provision extends beyond NASA to other entities, whether they are private, like the California Science Museum, or public-private, like the Smithsonian. Governmental but organizationally separate and distinct from the legislative, executive, or judicial branches of the federal government, the Smithsonian is overseen by a board composed of representatives of each branch (see CRS In Focus IF12718, *Smithsonian Institution: Background, Entities, and Leadership*). If the NASA Administrator's

authority to designate a space vehicle is limited to those owned by the agency, space vehicles previously transferred to other entities may be outside of this authority.

Congress might investigate these matters through oversight processes or consider enactment of legislative language clarifying its expectations of NASA and the status of surplus NASA equipment in the custody of other entities.

Costs and Logistical Considerations

P.L. 119-21 required NASA to obligate \$85 million, of which not less than \$5 million is to be used to transport a space vehicle, with the remainder designated to build a display facility. This funding does not allow for the costs of acquisition. The costs associated with these activities would likely depend on the vehicle chosen. As examples, vehicles such as the Apollo Command Modules and Gemini capsules are relatively small and light, which may translate to relatively lower transportation and storage costs compared to larger space vehicles. These spacecrafts have been relocated several times when the Smithsonian has loaned them to other institutions, including NASA.

Relocating a space shuttle orbiter could pose other challenges and costs. During the Space Shuttle program, the orbiters were transported using the Shuttle Carrier Aircraft, two extensively modified Boeing 747 airliners that have since been decommissioned. Without these aircraft, a different transport method would likely need to be used.

Cost estimates to relocate a space shuttle orbiter vary widely based on what the estimate includes, such as preparation, potential disassembly, support facilities, or physical transportation. In 2012, NASA estimated that using the Shuttle Carrier Aircraft to transport the retired orbiters from a NASA center to an airport close to the destination would cost \$8.3 million. This amount did not include costs for transporting the vehicle from the airport to the final location, preparing the vehicle for transfer, or housing facilities upon transfer. The Smithsonian reportedly estimates that transporting *Discovery* from the Udvar-Hazy Center to Houston would cost about \$50-\$55 million and that the costs to prepare the museum for moving the orbiter and planning a new exhibit, and to construct a permanent display facility elsewhere, would be about \$325 million. A private company with experience in moving large vehicles offered a preliminary estimate of \$8 million to transport *Discovery* by ground and barge. Any of these costs might change as the details of the move are clarified. Congress may request analysis of the estimated costs based on the chosen vehicle or consider providing further appropriations to NASA, if needed, to fully fund a transfer.

Liability associated with the process of transfer may be an area of congressional interest. The costs for liability insurance for transport of a unique space vehicle may be high and potentially pose a barrier. Among the issues that are unknown are the point at which liability would transfer between involved entities (potentially including transportation companies), how the potential costs of liability coverage might be assessed, and who would assume those costs.

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