



January 2020

AVIATION CONSUMER PROTECTION

Few U.S. Aircraft Have Lavatories Designed to Accommodate Passengers with Reduced Mobility

GAO Highlights

Highlights of [GAO-20-258](#), a report to congressional committees

Why GAO Did This Study

Flying can pose significant challenges for persons who rely on wheelchairs, including the lack of wheelchair accessible lavatories on most flights. In 1990, DOT required wheelchair accessible lavatories on twin-aisle aircraft used mainly for long flights. It did not require them for single-aisle aircraft, although DOT continued to study the issue. Since 1990, technological advances have enabled single-aisle aircraft to fly longer distances, and these aircraft now make 99 percent of domestic flights. In 2016, a DOT advisory committee recommended that DOT require accessible lavatories in certain single-aisle aircraft in the future.

The Federal Aviation Administration (FAA) Reauthorization Act of 2018 included a provision that GAO examine the availability and designs of lavatories on commercial aircraft and the ability of passengers with disabilities to access them. This report describes (1) what is known about lavatory designs and accessibility for persons with reduced mobility and (2) the challenges wheelchair-bound passengers and others face while traveling on single-aisle aircraft without accessible or functional lavatories.

GAO reviewed DOT's guidance and rulemaking and analyzed DOT's aircraft complaint data and fleet data for the eight largest U.S. air carriers. GAO interviewed officials from the eight largest mainline carriers and reviewed their fleet and lavatory data. GAO also interviewed officials from Airbus and Boeing and subsidiary lavatory manufacturers, as well as representatives from cabin crew labor associations and consumer groups representing persons with disabilities.

View [GAO-20-258](#). For more information, contact Andrew Von Ah at (202) 512-2834 or vonaha@gao.gov

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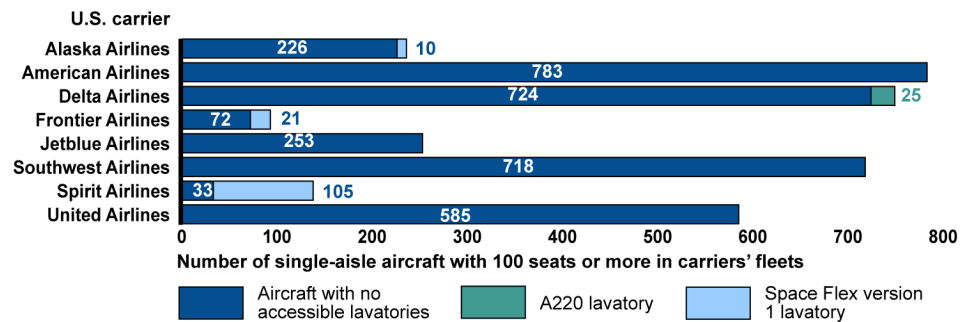
AVIATION CONSUMER PROTECTION

Few U.S. Aircraft Have Lavatories Designed to Accommodate Passengers with Reduced Mobility

What GAO Found

Aircraft manufacturers offer lavatories that carriers can provide and that are designed to accommodate users of onboard wheelchairs, but carriers do not choose to acquire this option for their single-aisle aircraft. We found designs for lavatories that enable a passenger in an onboard wheelchair to use them, to varying degrees. In recent years, both Airbus and Boeing—makers of single-aisle aircraft—began offering similarly designed lavatories to provide greater access for these passengers. For example, one design consists of two adjacent lavatories located in the rear galley area with a connecting retractable wall to allow for a wheelchair-bound passenger to enter one lavatory and transfer or be transferred to the toilet in the other lavatory. Another design is a single lavatory large enough to accommodate a passenger using an onboard wheelchair. Four of the eight U.S. carriers—and only one of the four with the largest fleets—GAO interviewed have Airbus aircraft with an adjacent lavatory design (Space Flex version 1) or the single lavatory design found on the A220 aircraft, constituting about 4.5 percent of the carriers' combined single-aisle fleet (see figure). None of the eight U.S. carriers have purchased a similar lavatory for their Boeing's single-aisle aircraft. Carrier officials told GAO that they consider many factors when ordering lavatories, including financial and service tradeoffs such as the potential to lose seating spaces, or reduced food and beverage service for passengers.

Lavatories Designed for Persons with Reduced Mobility on Selected U.S. Carriers' Single-Aisle Aircraft, as of November 2019



Source: GAO analysis of aircraft fleet and lavatory data provided by Airbus, Boeing, and selected U.S. carriers. | GAO-20-258

While the Department of Transportation (DOT) receives few complaints on lavatory inaccessibility, consumer groups told GAO that the lack of an accessible lavatory on single-aisle aircraft presents challenges for persons with reduced mobility. For example, some passengers take precautionary measures to avoid the need to use the aircraft lavatory and others avoid flying altogether. Additionally, although some aircraft have wheelchair-accommodating lavatories, they are not well advertised to passengers, making it difficult for passengers to know whether their flight may have such a lavatory. To address such challenges and the findings of its 2016 advisory committee, DOT issued, on December 16, 2019, a notice of proposed rulemaking to require carriers to install accessibility features without changing the size of the lavatories. DOT also expressed intent to study the costs and benefits of enlarging single-aisle aircraft lavatories to enable use by passengers using the onboard wheelchair.

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Abbreviations

ACAA	Air Carrier Access Act
ACCESS Advisory Committee	Advisory Committee on Accessible Air Transportation
ANPRM	advance notice of proposed rulemaking
BTS	Bureau of Transportation Statistics
DOT	Department of Transportation
FAA	Federal Aviation Administration
NPRM	notice of proposed rulemaking

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January 7, 2020

The Honorable Roger Wicker
Chairman
The Honorable Maria Cantwell
Ranking Member
Committee on Commerce, Science, and Transportation
United States Senate

The Honorable Peter DeFazio
Chairman
The Honorable Sam Graves
Ranking Member
Committee on Transportation and Infrastructure
House of Representatives

For persons with reduced mobility, flying can pose significant challenges. Embarking and disembarking the aircraft can be a lengthy process and require assistance from airline personnel. After boarding, passengers with reduced mobility may need to access aircraft lavatories and those passengers unable to walk to the lavatory on their own likely would need to rely on an onboard wheelchair designed to fit down narrow aircraft aisles.¹ However, most lavatories on single-aisle aircraft are inaccessible to these passengers unless they are able to stand and pivot from the onboard wheelchair into the lavatory.

In 1990, in response to the Air Carrier Access Act (ACAA) of 1986,² the Department of Transportation (DOT) implemented regulations that included requirements for twin-aisle aircraft that historically have been used for coast-to-coast and international flights to have at least one

¹DOT requires air carriers to provide onboard wheelchairs on most aircraft with more than 60 passenger seats that have an accessible lavatory and when requested by a passenger with a disability even if the aircraft does not have an accessible lavatory. 14 C.F.R. § 382.65.

²Pub. L. No. 99-435, 100 Stat. 1080 (codified as amended at 49 U.S. C. § 41705). The ACAA prohibits discrimination on the basis of disability in air travel, whereas the Americans with Disabilities Act of 1990, as amended, among other things, prohibits discrimination and ensures equal opportunity and access for persons with disabilities in public accommodations, commercial facilities and transportation by bus, rail, or any other conveyance, other than by aircraft.

lavatory accessible by the aircraft's onboard wheelchair.³ DOT's accessible lavatory regulation does not apply to single-aisle aircraft, which at the time of the rule's promulgation were used primarily for shorter flights. However, due to technological advancements, single-aisle aircraft can now be used for longer flights, including longer coast-to-coast and some international flights. Because of a lavatory's size and configuration, aircraft lavatories can also be challenging for other passengers needing extra room, such as to accommodate their size or to change a baby's diaper.

Section 426 of the FAA Reauthorization Act of 2018 includes a provision for us to review the availability and design of lavatories on commercial aircraft, and the ability of passengers with disabilities to use accessible aircraft lavatories.⁴ Since twin-aisle aircraft are subject to the DOT requirement to have at least one accessible lavatory this report focuses on lavatories on single-aisle aircraft. In this report we: (1) describe the lavatory designs for single-aisle commercial aircraft and the availability of lavatories designed to provide access for persons with reduced mobility on those aircraft and (2) discuss the challenges wheelchair-bound passengers and others face traveling on single-aisle aircraft without accessible or functional lavatories and efforts DOT has under way to address these challenges.

To describe the lavatory designs for single-aisle aircraft and the availability of lavatories designed to provide access for persons with

³55 Fed. Reg. 8008 (Mar. 6, 1990) (codified as amended at 14 C.F.R. § 382.63). Among other things, the 1990 regulations required new (ordered by the U.S. carrier after April 5, 1990, or delivered to the carrier more than 2 years after April 5, 1990) wide-body aircraft with more than one aisle in which lavatories are provided to have lavatories that meet certain specified accessibility criteria for passengers with mobility disabilities. Per DOT's current regulation, an "accessible lavatory" with respect to twin-aisle aircraft must permit a qualified individual with a disability to enter, maneuver within as necessary to use all lavatory facilities, and leave, by means of the aircraft's on-board wheelchair; must afford privacy to persons using the on-board wheelchair equivalent to that afforded ambulatory users; and must provide door locks, accessible call buttons, grab bars, faucets and other controls, and dispensers usable by qualified individuals with a disability, including wheelchair users and persons with manual impairments. There are no federal regulations requiring commercial passenger aircraft to have lavatories in the cabin. However, if there is a lavatory on-board, DOT and FAA can and do have regulations over certain components. For example, aircraft lavatories in passenger-carrying aircraft are required to be equipped with a smoke detector system or equivalent and ashtrays.

⁴Pub. L. No. 115-254, § 426, 132 Stat. 3186, 3339-40. Accessible lavatories may benefit other persons with reduced mobility and other passengers (such as larger sized passengers and those traveling with small children) as well.

reduced mobility on selected air carriers' single aisle aircraft , we reviewed DOT's regulations, guidance, and rulemakings pertaining to lavatories on commercial passenger aircraft. We also conducted a literature search of government, trade, and academic publications for studies and articles pertaining to aircraft lavatory accessibility, functionality, and size. Specifically, we searched for articles published between January 2009 and February 2019 in Scopus, EBSCO, ProQuest, Dialog, West, and Aviation Week Information Network. We interviewed officials from DOT, including the Federal Aviation Administration (FAA), on federal requirements for aircraft lavatories. We analyzed commercial-passenger aviation statistics from DOT's Bureau of Transportation Statistics (BTS) and we selected the top eight U.S. mainline carriers based on 2018 passenger trips to include in our review. We interviewed the eight carriers about their fleets and type of lavatories—including lavatories designed to provide increased access for persons with reduced mobility.⁵ We reviewed and analyzed the carriers' most recent corporate reports and websites for additional information on their fleets and lavatory types. These carriers' fleets of single-aisle aircraft largely consist of aircraft manufactured by Airbus (A220, A319, A320, and A321 aircraft) or various versions of Boeing's 737 or 757 aircraft. We interviewed officials from Airbus and Boeing and four manufacturers that make lavatories for Airbus and Boeing aircraft about lavatory designs and their accessibility to persons who rely on the aircraft's on-board wheelchair. To obtain the perspectives of cabin crew and passengers on the accessibility of aircraft lavatories, we interviewed representatives of cabin-crew labor associations and consumer groups (i.e., stakeholder groups), including those representing persons with disabilities. Because there is no federal requirement for or definition of what constitutes an accessible lavatory on single-aisle aircraft, we focused on whether existing lavatories on those

⁵We interviewed eight of the U.S. largest mainline carriers based on their 2018 passenger trips: Alaska, American, Delta, Frontier, JetBlue, Southwest, Spirit, and United Airlines. We did not include SkyWest and Republic Airlines because they are considered to be regional carriers and typically do business for other airlines. Of the eight carriers we selected, Alaska, Frontier, JetBlue, Southwest, and Spirit have only single-aisle aircraft in their fleet. Southwest is the only carrier whose fleet consists of only Boeing 737 aircraft, while Frontier and Spirit fly only Airbus single-aisle aircraft. JetBlue flies Airbus and Embraer single-aisle aircraft. American, Delta, and United have predominantly a mixture of Airbus and Boeing single-aisle aircraft in their fleets. Delta also has a few McDonnell-Douglas model aircraft in its fleet. We did not include aircraft that are generally considered as regional aircraft in our analysis because they are neither within the scope of current DOT accessible lavatory regulatory requirement nor within the scope of the wheelchair accessibility related requirements of a November 2016 advisory committee proposal to be used as the basis of an upcoming DOT rulemaking.

aircraft were designed to accommodate passengers with reduced mobility, including those who rely on the onboard wheelchair to enter an aircraft lavatory with an assistant's aid in order to use the facilities.

To describe the challenges passengers with reduced mobility, including those who require the use of the onboard wheelchair, may face related to accessing aircraft lavatories, we obtained passenger complaint data from DOT and the selected air carriers. We obtained data for passenger complaints related to accessibility, inadequate facilities, and flight delays for calendar years 2014 through 2018 from DOT's Aviation Consumer Protection Division's consumer complaint database. We analyzed the data to identify complaints related to lavatory function, size, and accessibility. To assess the reliability of the complaint data, we interviewed DOT officials about how the data were collected and used. Because our interviews with DOT officials indicated that no changes had been made to the processes used to collect and maintain the complaint data, we also relied on the past data's reliability assessment from our recently issued airline consumer-protection report, an assessment that found that the data were sufficiently reliable for our purposes.⁶ We also requested passenger complaint data for calendar year 2018 related to lavatories from the eight selected U.S. carriers and obtained from data from four carriers for this time period. We interviewed officials from the eight selected U.S. carriers and obtained and reviewed their policies on and the frequency of flights with non-functioning lavatories for calendar year 2018. To understand the types of challenges wheelchair-bound passengers face regarding lavatory accessibility, we interviewed representatives of cabin-crew labor associations and consumer groups, especially those representing persons with disabilities. We also interviewed DOT officials and members of DOT's Advisory Committee on Accessible Air Transportation (ACCESS Advisory Committee), which studied issues involved in requiring accessible lavatories on single aisle aircraft in anticipation of possible rulemaking.⁷

We conducted this performance audit from December 2018 to December 2019 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for

⁶See GAO, *Airline Consumer Protections: Additional Actions Could Enhance DOT's Compliance and Education Efforts*, GAO-19-76 (Washington D.C.: Nov. 20, 2018).

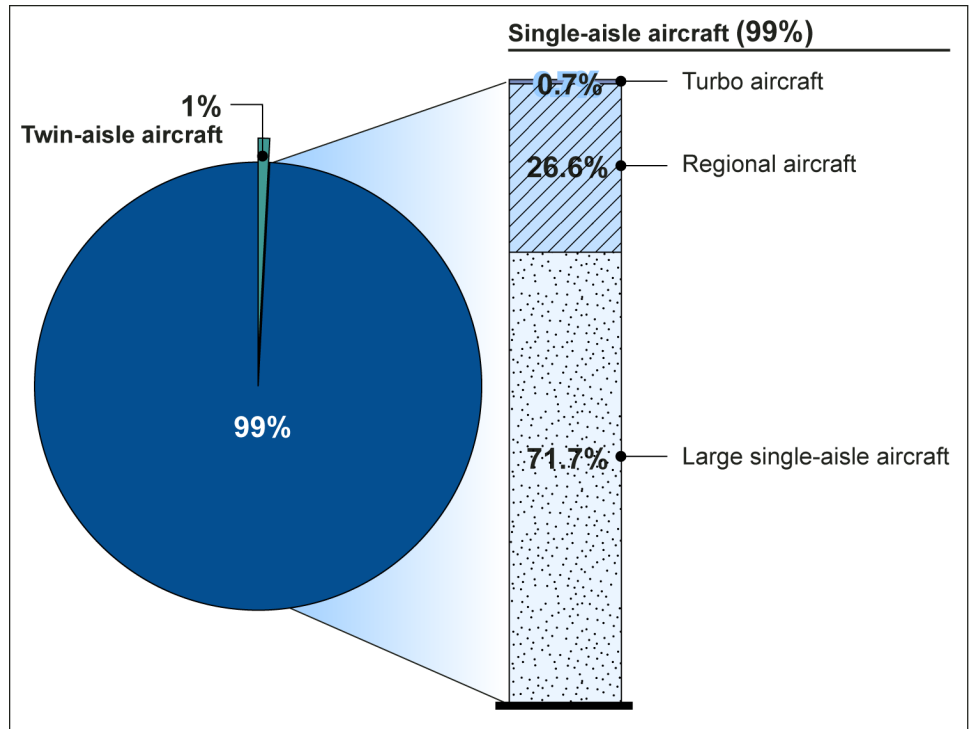
⁷<https://www.transportation.gov/access-advisory-committee>.

our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

When DOT issued regulations requiring accessible lavatories on twin-aisle aircraft in 1990, single-aisle aircraft were used primarily for shorter distances. However, technological advancements—such as the use of lighter, stronger composite materials—have enabled aircraft to fly longer distances with greater fuel efficiency. As a result, both Airbus and Boeing now offer single-aisle aircraft designs that can routinely fly 3,000 to almost 4,000 nautical miles—or easily from coast to coast in the continental U.S. as well as some overseas routes to and from the U.S. Of the eight U.S. carriers we interviewed for this review, five of them operate only single-aisle aircraft and the remaining three fly a mixture of single- and twin-aisle aircraft. As shown in figure 1, twin-aisle aircraft are rarely used for domestic flights by U.S. carriers. In 2018, 99 percent of U.S. aircraft departures for domestic flights occurred on single-aisle aircraft: 71.7 percent on the larger single-aisle aircraft; 26.61 percent on smaller, regional aircraft; and 0.68 percent on turbo jets.

Figure 1: U.S. Aircraft Departures for Domestic Flights by Aircraft Type in 2018



Source: GAO analysis of 2018 U.S. Bureau of Transportation Statistics Aviation data. | GAO-20-258

According to the 2010 U.S. Census, 57 million Americans (roughly 1 in 5) have a disability, of whom half have mobility issues that may require accommodations when flying.⁸ Furthermore, older Americans are representing a greater share of the U.S. population. By 2020, 16.5 percent of the nation's population will be over age 65, and by 2030, 20 percent of the population will be over age 65, and the likelihood of this group' needing assistance to access lavatories may increase as they age. As an indication of the number of people with reduced mobility flying, DOT's monthly aviation travel data indicate that for the first 6 months of

⁸For more information, see GAO, *Passengers with Disabilities: Air Carriers' Disability-Training Programs and the Department of Transportation's Oversight*, [GAO-17-541R](#) (Washington, D.C.: May 31, 2017).

2019, aviation passengers checked a total of 294,216 wheelchairs and scooters.⁹

Over the past 30 years, some efforts have been made to address the issue of ensuring non-discriminatory treatment of aircraft passengers, including access to aircraft lavatories. The enactment of the ACAA, which prohibits discrimination by airlines on the basis of disability, charged DOT with promulgating implementing regulations. DOT promulgated a final rule in 1990, in which it required aircraft with more than one aisle (twin-aisle aircraft) in which lavatories are provided to have at least one wheelchair accessible lavatory. DOT, however, deferred setting regulations for single-aisle aircraft, noting cost and feasibility concerns for carriers. Since that initial regulation, DOT has taken several steps to study the issue of accessible lavatories for single-aisle aircraft, but as of December 2019, none of these actions has resulted in a regulation for accessible lavatories in single-aisle aircraft. These steps include:

- DOT issued an advance notice of proposed rulemaking (ANPRM) to study, among other things, the issue of accessible lavatories on single-aisle aircraft that was issued in conjunction with its final rule mandating that twin-aisle aircraft must have a lavatory that is accessible to passengers who use wheelchairs.¹⁰
- DOT created an advisory committee in 1992 to provide guidance to DOT concerning access to lavatories on single-aisle aircraft for persons with disabilities, including persons who rely on the aircraft's onboard wheelchairs.¹¹ In 1996, the committee reported to DOT that it would be feasible to provide accessible lavatories on single-aisle aircraft but acknowledged that there could be a cost to doing so.
- As part of a final rule that DOT issued in 2008 to amend the ACAA regulations to include foreign carriers that fly to the U.S., DOT acknowledged that requiring accessible lavatories on single-aisle

⁹U.S. airlines with at least 0.5 percent of total domestic scheduled-service passenger revenues are required to report data on wheelchairs, scooters, and mishandled baggage to DOT. Although DOT issued a final rule on the reporting of these data, it did not start collecting monthly data for wheelchair and scooter enplanement and mishandling until the FAA Reauthorization Act of 2018 (Pub. L. No. 114-254, §441, 132) mandated that the compliance date for this rule be not later than 60 days after the enactment of the act, which was signed on October 5, 2018.

¹⁰See 55 Fed. Reg. 8078 (Mar. 6, 1990).

¹¹See 57 Fed. Reg. 424 (Jan. 6, 1992).

aircraft was an ongoing issue.¹² While the department noted that accessible lavatories on single-aisle aircraft would benefit passengers with disabilities, it also expressed concerns that revenue loss and other cost impacts could be too great for the carriers. The department said that it would continue to study the issue and review ongoing developments.

- DOT published a notice of intent in December 2015 to explore the feasibility of conducting a negotiated rulemaking concerning, among other things, accessible lavatories on single-aisle aircraft for travelers with disabilities.¹³
- As a result of the 2015 notice of intent, DOT established the ACCESS Advisory Committee in 2016—composed of representatives from air carriers, aircraft manufacturers, disability groups, and other aviation stakeholders. Its charge was to negotiate and develop a proposed amendment to DOT regulations for DOT’s consideration concerning accommodations for air travelers with disabilities that would address whether to require accessible lavatories on new single-aisle aircraft, among other issues. The committee noted that the issue of requiring accessible lavatories on single-aisle aircraft merited exploration because of two developments: (1) the increased use of single-aisle aircraft on long flights, and (2) the availability of new accessible-lavatory designs for single-aisle aircraft. In late 2016, the ACCESS Advisory Committee agreed on proposed amendments that included short-term and long-term solutions to address the challenges persons with mobility impairments face when traveling on single-aisle aircraft. The committee, taking into account costs to industry, recommended accessible lavatories on new aircraft, did not recommend requiring the retrofit of existing aircraft, and proposed a multi-tiered approach to meet this goal.¹⁴

¹²73 Fed. Reg. 27614, 27625 (May 13, 2008).

¹³80 Fed. Reg. 75953 (Dec. 7, 2015).

¹⁴According to the committee’s proposal, all new aircraft delivered 3 years after the effective date of the final rule should meet certain accessible features such as toilet seat height, assist handles, lavatory controls, and call buttons. Aircraft ordered 18 years after and delivered 20 or more years after the effective date of the final rule as well as any new type design aircraft for which an application is filed with the FAA more than 1 year after the effective date of the rule would be required to install at least one lavatory large enough to permit a passenger with disabilities to perform both a seated independent and dependent transfer from the onboard wheelchair with or without an assistant, in addition to the accessible features. Under the committee’s proposal, the accessible lavatory must enable a person ranging in sizes from the fifth percentile female to the 95th percentile male to enter and use the facility.

-
- In 2019, DOT publicized its intent to issue notices of proposed rulemaking regarding accessible lavatories to address the ACCESS Advisory Committee’s final resolution, which we discuss in more detail below.
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Manufacturers of Single-Aisle Aircraft Offer Lavatories Designed to Better Accommodate Persons with Reduced Mobility, but Selected Carriers Rarely Choose to Acquire Them

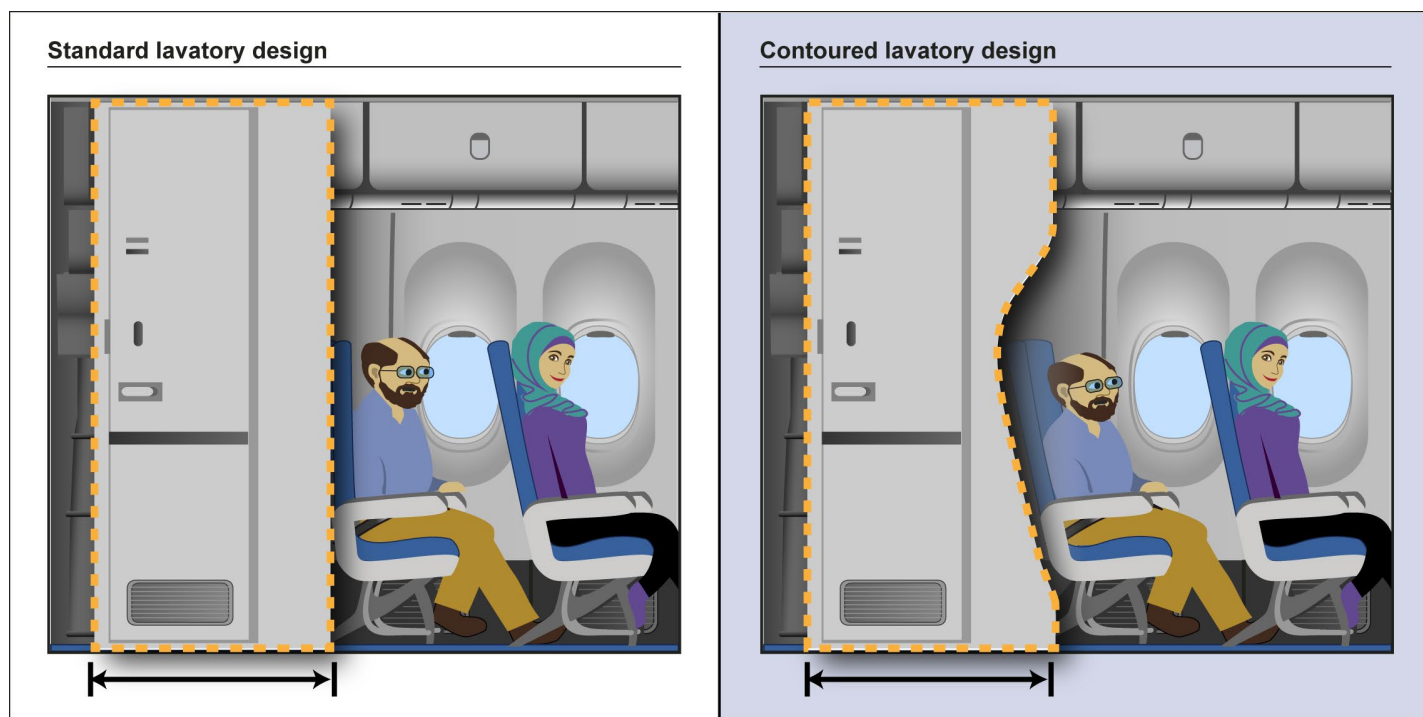
Aircraft Manufacturers Offer a Range of Lavatory Designs for Single-Aisle Aircraft, Including Designs to Accommodate Onboard Wheelchairs

Both Airbus and Boeing offer their customers a range of standard lavatory designs.¹⁵ For example, both Airbus and Boeing offer a lavatory with a contoured design (see fig. 2). This design offers a smaller sink and different dimensions than previous lavatories and has a contoured or angled wall on the exterior allowing seats in the last row to recline into the bottom portion of the contour. Air carriers can also choose to move the last row of seats back into the contour and then add an extra row of seats after making other changes to the configuration of seating rows. Airbus and Boeing also offer flat-wall lavatory designs that are similar to the standard flat-wall lavatories that had previously been available on single-aisle aircraft for years but have slightly different interior dimensions. Compared to the contoured lavatory design, this current flat-wall lavatory design could offer a larger sink or more countertop space. According to measurements and diagrams the aircraft and lavatory manufacturers provided for these lavatory styles, some interior lavatory dimensions have

¹⁵Larger single aisle aircraft in the fleets of the eight selected carriers we included typically have multiple lavatories; for example, one in the front and two in the rear. Some larger single-aisle aircraft may also have an additional lavatory in the middle of the aircraft.

decreased while other dimensions have increased. For example, changes in these two lavatory styles have resulted in increased interior space in some areas, such as the sitting knee space and diagonal shoulder width, and decreased space in other areas, such as the entry width and door height.¹⁶ These changes were to provide carriers options to help them meet their business strategies.

Figure 2: Comparison of Standard and Contoured Lavatory Designs Manufacturers Offer for Single-Aisle Aircraft



Source: GAO review of Airbus and Boeing information. | GAO-20-258

In addition to making changes to the standard lavatories, since 2015, both Airbus and Boeing offered lavatory configurations for their single-aisle aircraft designed to provide greater access for passengers who rely on the use of onboard wheelchairs.¹⁷ According to officials for Airbus and

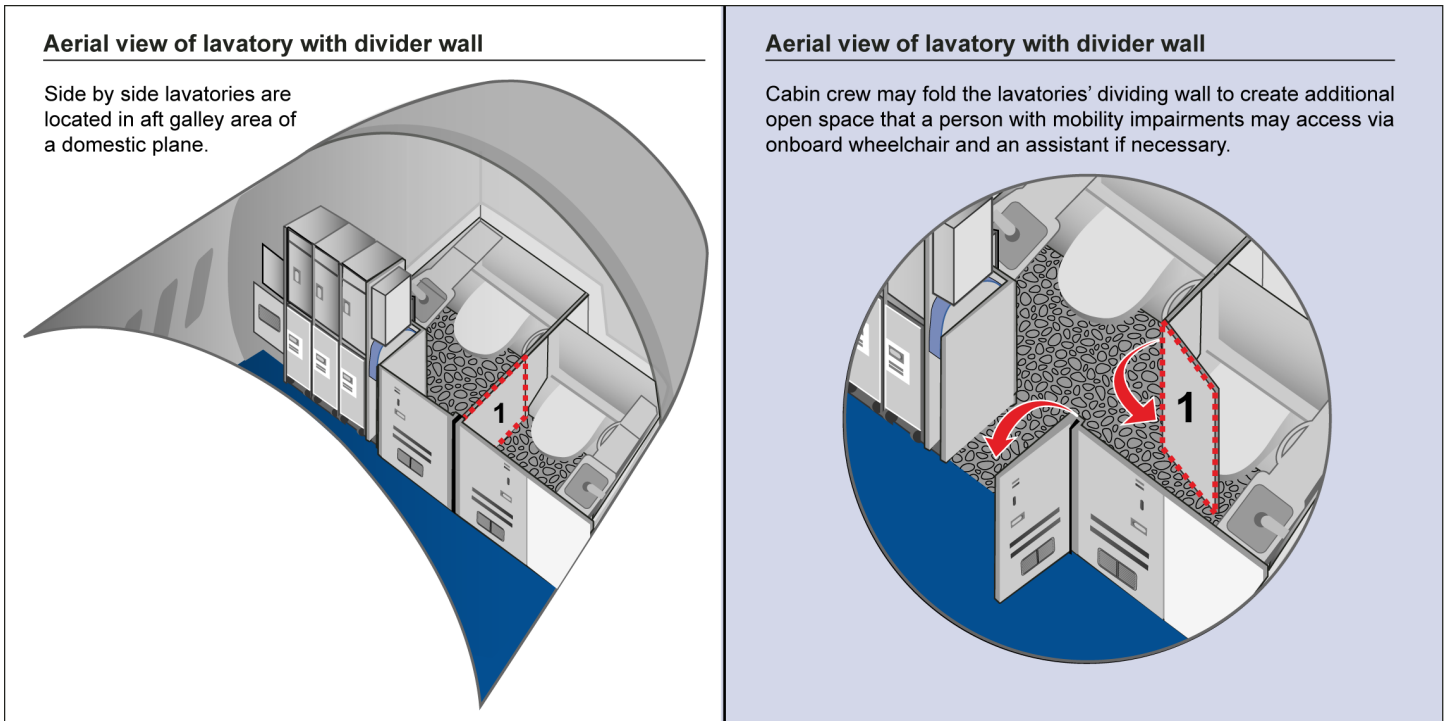
¹⁶The changes in the lavatory dimensions generally are no more than a few inches. Depending on the passenger, these differences could affect the passenger's sense of space within the lavatory.

¹⁷In general, U.S. commercial aircraft with more than 60 passenger seats and that have an accessible lavatory are required to have available onboard wheelchairs that are specially designed to be wheeled down narrow aircraft aisles. 14 C.F.R. § 382.65.

Boeing, both manufacturers use a design that connects two adjacent lavatories with a retractable wall or partition. As shown in figure 3, when the folding partition is open, this configuration is designed to enable the person who relies on the aircraft-onboard-wheelchair to enter in one of the lavatories and then transfer or be transferred to the toilet in the other lavatory. While there are differences between the Boeing and Airbus models, they operate similarly. Both the Airbus and Boeing designs are for the rear of the aircraft and take up space in the area normally used for the galley where food and drink carts are located for flight attendants' access.¹⁸ According to officials we interviewed from two carriers that have purchased aircraft with this design, a reduced galley area is less of a concern because their flights provide limited food and beverage service and do not need a full galley. They said that the space where the traditional lavatories were located could be used for other purposes, such as more seats.

¹⁸According to a selected aviation stakeholder, there also needs to be space outside of the lavatory to accommodate the onboard wheelchair and its ability to maneuver into a lavatory.

Figure 3: Example of a Single-Aisle Aircraft Lavatory Designed to Accommodate an Onboard Wheelchair



Source: GAO review of Airbus and Boeing information. | GAO-20-258

According to the manufacturers, the lavatory models that are designed for greater accessibility accommodate the onboard wheelchair to varying degrees.

- Airbus offers two designs to accommodate a passenger with an onboard wheelchair. The Space Flex version 1 design consists of two adjacent lavatories with a connecting retractable partition.¹⁹ This retractable partition can open to allow for a passenger who relies on the aircraft onboard-wheelchair to enter the lavatory with or without

¹⁹The Space Flex lavatories are designed to provide greater access for the Airbus 320 aircraft family, which consists of the A319, 320, and 321 aircraft models.

the help of an assistant.²⁰ A representative from a disability organization was generally positive about the Space Flex version 1 and said it was a good design for both carriers and travelers with disabilities. Airbus also offers another lavatory design specifically for its A220 single-aisle aircraft model.²¹ Airbus officials told us that it is a single lavatory that is designed to accommodate a wheelchair but cannot accommodate both a passenger in an onboard wheelchair and an assistant.²²

- Boeing offers one lavatory designed to accommodate a passenger using an onboard wheelchair for single-aisle aircraft for its 737 aircraft family. This design, known as the Pax Plus, consists of two adjacent lavatories with a removable partition designed to enable a wheelchair and assistant to enter.

In addition, officials from the eight selected air carriers told us that their crews are trained to assist passengers with reduced mobility to use lavatories. These officials from the eight air carriers stated that they provide their cabin crew with initial and, in some cases, recurrent training about how to assist passengers with reduced mobility, pursuant to DOT regulations.²³ DOT regulations further stipulate that if there is an on-board wheelchair, the carrier must provide assistance to enable the passenger

²⁰According to Airbus officials, there is a Space Flex version 2 lavatory design also consisting of two adjacent lavatories. However, the version 2 lavatories are narrower, do not have a retractable wall, and are not designed to accommodate an onboard wheelchair and assistant. Rather, it can be designed with an optional transfer seat and grab bar inside the lavatory that, depending on the extent of a person's disability, a person can use to switch from an onboard wheelchair, which remains outside the lavatory, to the toilet seat.

²¹This lavatory was originally designed for the Bombardier C Series aircraft. Now produced in a partnership with Airbus, this aircraft was renamed the A220.

²²Airbus also offers a Dual Aft Lavatory Complex that is the A220 version of the two adjoining Space Flex Lavatories for its A220 aircraft.

²³Under 14 C.F.R. § 382.141(a)(1)(i), for example, carriers operating aircraft with 19 or more passenger seats are required to provide training to personnel who deal with the traveling public concerning, among other things, federal regulations affecting the provision of air travel to passengers with a disability. In addition, such carriers are required to provide training on their procedures concerning the provision of air travel to such passengers including the proper and safe operation of any equipment used to accommodate passengers with a disability. 14 C.F.R. § 382.141(a)(1)(ii). In other words, the onboard wheelchair and the lavatory retractable partition would be considered as equipment used to accommodate a passenger with disabilities.

to move to and from the lavatory if, in general, such assistance is requested by or on behalf of a passenger with a disability.²⁴

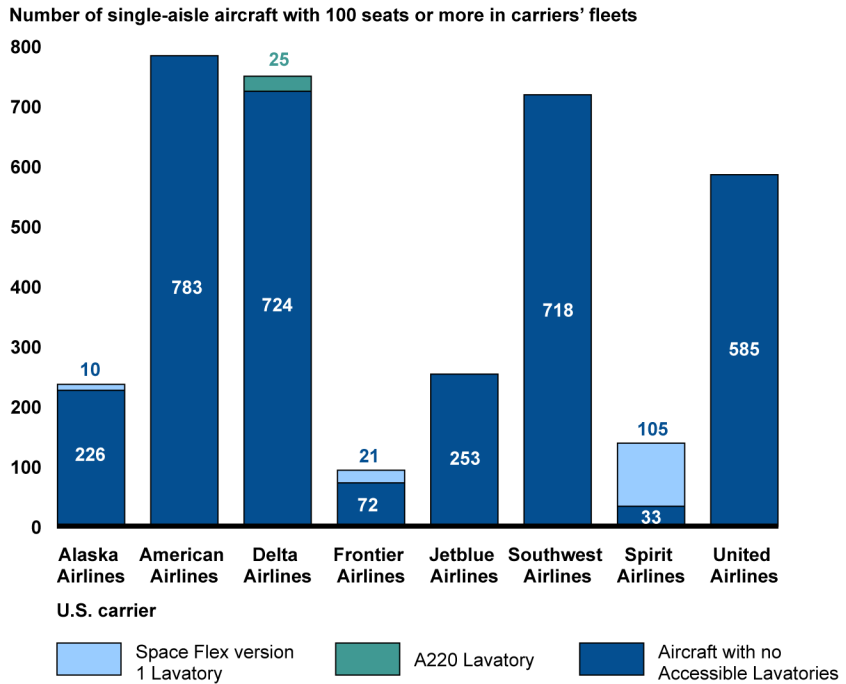
Onboard Wheelchair-Accommodating Lavatories Are Not a Common Feature on Selected U.S. Carriers' Aircraft

While aircraft manufacturers offer lavatories designed to accommodate passengers with mobility impairments, carriers do not often choose to acquire them. Of the eight U.S. carriers we interviewed, we found that four have some aircraft—all of which are Airbus aircraft—with lavatories that are designed to accommodate passengers with mobility impairments to some extent. Only one of these carriers is among the four with the largest number of aircraft in their fleet. Specifically, these four carriers have either the Space Flex version 1 or the Airbus A220 lavatory. Despite Boeing's offering of the Pax Plus lavatories since 2017, Boeing officials told us that as of November 2019 no U.S. carriers have ordered these lavatories for their current or future single-aisle Boeing aircraft. Overall, about 4.5 percent of the combined single-aisle fleet of the eight selected carriers have lavatories designed to provide some measure of greater access to passengers with reduced mobility, including those who require the use of the onboard wheelchair (see fig.4).²⁵

²⁴14 C.F.R. § 382.111. However, according to DOT regulations, carriers are not required to lift or carry a passenger with a disability in moving to and from the lavatory or provide assistance within the lavatory. 14 C.F.R. §§ 382.111, 382.113.

²⁵Specifically, only three airlines have the Space Flex version 1 lavatory (10 for Alaska Airlines; 21 for Frontier; and 105 for Spirit Airlines). Delta has 25 A220 aircraft with the lavatory that can accommodate the onboard wheelchair but not with an assistant. According to officials of Alaska Airlines, the 10 Airbus aircraft were originally Virgin America aircraft, which Alaska acquired in 2016.

Figure 4: Number of Lavatories Designed for Persons with Reduced Mobility on Selected U.S. Carriers' Single-Aisle Aircraft, as of November 2019



Source: GAO analysis of aircraft fleet and lavatory data provided by Airbus, Boeing, and selected U.S. Carriers. | GAO-20-258

According to the carriers we interviewed, they consider the configuration of the aircraft among other factors, including their business strategy, when ordering lavatories for new aircraft. Providing a lavatory designed to accommodate onboard wheelchairs on single aisle aircraft may require financial tradeoffs for carriers, such as reducing the number of revenue generating seats in the aircraft cabin. According to airline officials, this reduction can result in higher costs for carriers that subsequently might be passed onto consumers through higher fares. Officials from all eight selected carriers, however, stated that all of their aircraft lavatories have features designed to increase access to certain lavatory functions, such as assist handles or grab bars, accessible call buttons, door locks, and faucets that passengers with disabilities can use.

Carrier officials also stated that they need to make trade-offs between competing priorities; for example, taking into account how onboard wheelchair-accommodating lavatory designs may affect food service. According to officials from two carriers, an onboard wheelchair-

accommodating lavatory can result in less galley space, and a full galley at the back of the aircraft is needed for the type of services they wish to provide to their customers without compromising customer seating capacity. Conversely, officials from two other carriers told us that trading galley space for onboard wheelchair-accommodating lavatories did not affect their food service, as they do not provide full meal service. For example, they said that because they did not need the full galley space, the Space Flex lavatory enabled them to add not only a lavatory that accommodates onboard wheelchairs but also an additional row of passenger seats.

Lack of Onboard Wheelchair-Accommodating Lavatories Can Make Flying Difficult for Persons with Reduced Mobility, and DOT Is Considering Rulemaking for Accessible Lavatories on Single-Aisle Aircraft

While Complaint Data Are Limited, Groups Advocating for Persons with Reduced Mobility Stated That the Lack of Accessible Lavatories Makes Flying Difficult

Representatives from stakeholder groups we interviewed told us that the lack of accessible lavatories makes flying challenging for persons with reduced mobility. They described how some passengers with reduced mobility take precautionary measures to avoid the need to use an aircraft lavatory, such as severely limiting food and fluid intake in advance of the flight, risking dehydration; using a catheter; or wearing a protective undergarment. Some passengers with reduced mobility reportedly may avoid long flights altogether by purchasing flights with connections or layovers. However, according to one stakeholder group, these precautionary measures may not alleviate the fear and anxiety that passengers who rely on the onboard wheelchair to get to the lavatory

may face during air travel as there is always the possibility of having to deal with circumstances beyond their control. For example, unforeseen events such as increased flight time or delays in getting to the gate can increase the time a passenger has to postpone attending to normal bodily functions. Finally, stakeholder groups report that passengers may choose not to travel at all, or to drive rather than fly, choices that may increase the cost and time of travel, particularly if it involves an overnight stay.

Even when an aircraft has a lavatory that can accommodate an onboard wheelchair, which exists on about 4.5 percent of the combined fleet of single-aisle aircraft for the 8 airlines included in our review, passengers may have difficulty determining whether or not their flight has such a lavatory.²⁶ According to officials of air carriers, passengers may call the carriers' customer service department for this information, although not all phone representatives may have this information readily available. In addition, our review of selected carriers' websites revealed that most do not have information about which flights or aircraft may have such a lavatory, although we found that two carriers include descriptions of aircraft amenities or diagrams denoting onboard wheelchair-accommodating lavatories. However, even if this information were made available, it may not guarantee that a passenger with a mobility impairment will be able to fly on an aircraft with this type of lavatory because air carriers sometimes switch aircraft at the last minute without notice, such as when, for example, an aircraft has a mechanical problem.

While stakeholders described challenges, neither air carriers nor DOT receive a large number of complaints regarding the lack of lavatories designed to accommodate passengers who use onboard wheelchairs or lavatories in general. As we have previously reported, DOT receives and processes complaints from passengers and uses complaint data to help identify which carriers to inspect for consumer protection violations.²⁷

²⁶Under 14 C.F.R. § 259.5, carriers operating to, from, or within the United States, with a least one aircraft having a designed seating capacity of 30 or more seats are to adopt a customer service plan that, among other things, addresses the provision of information on lavatory availability on the selling carrier's website, and upon request, from the selling carrier's telephone reservations staff.

²⁷See GAO, *Airline Consumer Protections: Additional Actions Could Enhance DOT's Compliance and Education Efforts*, [GAO-19-76](#) (Washington, D.C.: November 2018). Most of DOT's airline passenger complaints fall into only a few complaint categories. In 2018, DOT reported that the top four complaint categories accounted for about 70 percent of all complaints it receives about airlines. These complaints were about flight problems, baggage issues, reservations/ticketing/boarding, and customer service.

From 2014 through 2018, DOT received 59,846 complaints about U.S. carriers. Of these, we reviewed 1,263 complaints related to accessibility, inadequate facilities, and flight delays and identified 69 complaints about lavatories in general and 5 about the accessibility of lavatories. Of the 69 lavatory complaints identified:

- 64 related to non-functioning lavatories (e.g., non-operational or unclean lavatories, sinks lacking running water, etc.);
- 5 related to lavatories being inaccessible by persons with disabilities (e.g., lavatory grab bars at an improper height, passenger using onboard wheelchair unable to enter lavatory);²⁸ and
- 2 related to lavatory size (e.g., lavatory size has been reduced).

We also discussed lavatory-related complaints with the eight selected air carriers, three of which reported that these complaints made up about 1 percent or less of the total passenger complaints they received in 2018.²⁹ Four air carriers reported that lavatory complaints related to accessibility made up an even smaller portion—around 0.05 percent or less of their total passenger complaints in 2018.

However, the small number of complaints related to lavatory accessibility does not necessarily indicate that individuals who use onboard wheelchairs are not affected by inaccessible aircraft lavatories, as some may choose not to fly,³⁰ and others may take precautionary measures as described above to avoid having to use the aircraft lavatory. Furthermore, because accessible lavatories are not required on single-aisle aircraft and there is no expectation that the lavatory would be accessible, passengers may not see grounds to complain or may not take the time to submit a complaint. As we have previously reported, complaint data are inherently limited because, according to academic literature, a substantial portion of dissatisfied individuals never complain and are therefore not represented

²⁸The sum of individual complaint categories exceeds total complaints as two complaint records contained complaints about size and inaccessibility.

²⁹Three or four of the air carriers—depending on the nature of the complaint—provided comparable data. The other four carriers included in our review either did not provide complaint data or the data they provided were not from a comparable 2018 time period. In the case of the latter, the levels of aircraft lavatory complaints reported were also very low.

³⁰In a 2016 rulemaking effort to require U.S. carriers to report monthly the number of mishandled wheelchairs, DOT acknowledged that some persons with disabilities may be reluctant to fly, indicating that there may be barriers to travel. See 81 Fed. Reg. 76300, 76304 (Nov. 2, 2016).

in the complaint data. Finally, when they do complain, their complaints may not be representative of other individuals.³¹

We also found that there were very few complaints about non-functioning lavatories. As noted above, DOT received 64 passenger complaints on non-functioning lavatories. Carrier officials also told us that they have received few complaints about non-functioning lavatories. According to the air carrier officials we interviewed, depending on the flight, some flights may operate with one or more lavatories not functioning. However, most carrier officials reported that according to data they collect, this occurred on less than 2 percent of flights. In such instances, some carrier officials stated they would notify passengers of nonoperational lavatories to give them the opportunity to use the airport lavatories prior to boarding. These officials also stated that if all lavatories are inoperable it is the responsibility of the pilot—in consultation with flight dispatchers—to decide if the aircraft will take off or, if lavatories become inoperable during a flight, to divert to an airport other than the destination. Carriers further noted that flights with no operational lavatories are extremely rare.

DOT Has Introduced Rulemaking and Has Other Efforts Under Way to Help Address Difficulties Faced by Air Travelers with Disabilities

As previously noted, in late 2016, the ACCESS Advisory Committee reached a consensus on proposed amendments that would require accessible lavatories on single-aisle aircraft. DOT announced in 2019 that it would address the issue in rulemaking.³² On December 16, 2019, DOT issued a notice of proposed rulemaking to solicit comments on short-term accessibility improvements on single-aisle aircraft through the installation of accessibility features within the lavatory, such as assist handles, call buttons, and lavatory controls, without changing the size of lavatories.³³ In addition, DOT has announced its intention to issue an advanced notice of proposed rulemaking to address long-term accessibility improvements, also addressed by the Advisory Committee, and to solicit comments and gather information on the costs and benefits of requiring carriers to

³¹GAO-19-76.

³²In late 2018, the Paralyzed Veterans of America, et al., petitioned the United States Court of Appeals for the Tenth Circuit (No. 18-1465) to require DOT to issue a proposed rule governing single-aisle aircraft lavatory accessibility. DOT asserted that such relief was inappropriate where the Secretary is poised to issue a proposed rule. In May 2019, the court abated (suspended) the matter pending further order of the court, and ordered DOT to file a status report every 45 days regarding their progress on issuing the notice of proposed rulemaking.

³³85 Fed. Reg. 27 (Jan. 2, 2020).

increase the size of the single-aisle lavatory on new aircraft models to enable passengers using an onboard wheelchair to enter and use the lavatory with an assistant, if necessary.

In addition to the two rulemakings, DOT has recently established another advisory committee. The ACAA Advisory Committee was created in response to a requirement in the FAA Reauthorization Act of 2018, has a 2-year charter, and is required to report its findings to both DOT and Congress on current DOT regulations on barriers to persons with disabilities who want to travel by air. The ACAA Advisory Committee is also required to determine the extent to which DOT is addressing those barriers, recommend improvements to implement the ACAA, and improve the flying experience for travelers with disabilities. The committee—comprised of members representing aircraft manufacturers, national disability organizations, air carriers, and airports—plans to hold its first meeting in early 2020. According to DOT officials, although it is within the purview of this committee to consider issues regarding accessible lavatories, it does not plan to do so at the present time given that the two proposed rulemakings are proceeding and that there is a Congressional mandate for the committee to report on other issues within 6 months of the first meeting.³⁴

Agency Comments

We provided a draft of this report to DOT for review and comment. DOT provided technical comments, which we incorporated as appropriate.

³⁴Section 438(b) of the FAA Reauthorization Act of 2018 mandated that the ACAA Advisory Committee report on ticketing, pre-flight seat assignment, access to bulkhead seating, and stowage of assistive devices within 6 months of the committee's first meeting.

We are sending copies of this report to the appropriate congressional committees, DOT, and other interested parties. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have questions concerning this report, please contact me at (202) 512-2834, or vonaha@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix I.



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Appendix I: GAO Contact & Acknowledgements

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In addition to the individual named above, other key contributors to this report were Ed Laughlin, Assistant Director; Martha Chow, Analyst-in-Charge; James Geibel; Geoffrey Hamilton; Elke Kolodinski; Gail Marnik; Malika Rice; Amy Rosewarne; Travis Schwartz; Pamela Snedden; and Elizabeth Wood.

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