

# Coast Guard: Enforcement of Egress Requirements for Historic Wood Sailing Vessels

GAO-24-106644

Q&amp;A Report to Congressional Committees

January 30, 2024

Accessible Version

## Why This Matters

The U.S. Coast Guard is the primary federal agency responsible for marine safety and security. Since 2010, the Coast Guard has investigated over 50,000 maritime accidents. In 2019, a vessel named *Conception* caught fire off the coast of California, resulting in the deaths of 34 people, in part due to exits that all led to the same area in which the fire was located. This accident prompted an investigation by the National Transportation Safety Board (NTSB) that resulted in recommendations to the Coast Guard to revise fire safety requirements for small passenger vessels.

Coast Guard requirements related to exits on small passenger vessels vary depending on the age of the vessel. However, in response to statute, the Coast Guard issued an interim rule in 2021 requiring all small passenger vessels with overnight accommodations for passengers to comply with the same egress requirements by December 27, 2023. The James M. Inhofe National Defense Authorization Act for Fiscal Year 2023 (FY23 NDAA) includes a provision for us to review the effect of these egress requirements on historic wood sailing vessels (e.g., constructed before 1986), including the feasibility of compliance and associated risk and costs.<sup>1</sup> This report addresses the safety of historic wood sailing vessels, changes to egress requirements, and the feasibility of vessels complying with the 2021 interim rule.

## Key Takeaways

- There are no vessels in operation that meet all of the elements of a “historic wood sailing vessel” as defined in the FY23 NDAA. However, we identified 27 vessels—that we refer to as wood sailing vessels—that meet most of the elements of a historic wood sailing vessel. Our review of Coast Guard marine casualty reports found that from January 2013 through July 2023, some of these vessels were involved in incidents, none of which resulted in significant damage or fatalities.
- Older small passenger vessels were allowed to comply with less stringent egress requirements until the Coast Guard’s 2021 interim rule. The rule required all small passenger vessels with overnight accommodations for passengers, regardless of build date, to comply with newer, more stringent requirements by December 27, 2023. The 27 wood sailing vessels we identified account for a small portion of the total number of vessels (308) that are required to comply with the new egress requirements. Coast Guard officials stated they plan to issue a final rule in November 2024.
- Owners of wood sailing vessels may need to make modifications to comply with the new egress requirements. According to vessel owners and

operators, such modifications may require significant time and resources due to the construction and operational nature of wood sailing vessels.

### What is a historic wood sailing vessel?

The FY23 NDAA defines a historic wood sailing vessel as a small passenger vessel that

- has overnight passenger accommodations;
- is a wood sailing vessel;
- has a hull constructed of wood;
- is principally equipped for propulsion by sail, even if the vessel has an auxiliary means of production;
- has no fewer than three masts; and
- was constructed before 1986.<sup>2</sup>

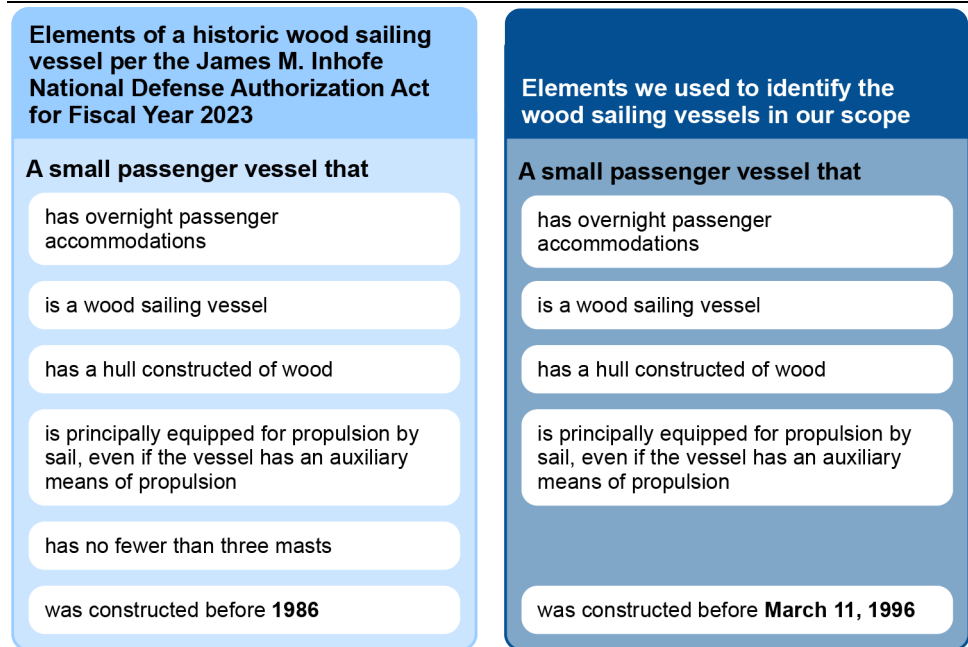
Coast Guard officials stated the FY23 NDAA definition is the definition they use for a historic wood sailing vessel.

### How many historic wood sailing vessels are in operation?

According to Coast Guard officials, there are no historic wood sailing vessels, as defined in the FY23 NDAA, in operation. This is because no operational vessel has three or more masts that also meets the other elements in the definition.

Our analysis of May 2023 data from the Coast Guard’s Marine Information for Safety Law Enforcement (MISLE) database determined that 27 vessels met most of the elements of a historic wood sailing vessel as defined in the FY23 NDAA (see figure 1).<sup>3</sup>

**Figure 1: Elements of a Historic Wood Sailing Vessel and a Wood Sailing Vessel**



Source: GAO analysis of the James M. Inhofe National Defense Authorization Act for Fiscal Year 2023. | GAO-24-106644

Note: We used before March 11, 1996, because new subchapter T regulations issued in 1996 required small passenger vessels built on or after March 11, 1996, to comply with the new subchapter T regulations, whereas such vessels built before March 11, 1996, were allowed to remain in compliance with old subchapter T regulations. Twenty-three of the 27 wood sailing vessels we identified were built before 1986.

The 27 vessels we identified included 13 of the 16 vessels specifically named in the FY23 NDAA as “covered historic vessels.”<sup>4</sup> These 16 vessels were able to

request a waiver from complying with the 2021 interim rule, as it relates to egress requirements, for up to 2 years from the date this report is submitted.

### What, if any, safety-related incidents have involved wood sailing vessels?

Based on our review of Coast Guard marine casualty reports from January 2013 through July 2023, some of the 27 wood sailing vessels we identified were involved in incidents, none of which resulted in significant damage or fatalities.<sup>5</sup>

Specifically, our analysis of the Coast Guard reports found that, between January 2013 and July 2023, the wood sailing vessels were involved in 48 incidents. As shown in table 1, vessel groundings account for the largest number of these incidents, but none resulted in significant damage. In one example of a vessel grounding, a wood sailing vessel ran aground while carrying passengers on a day excursion, resulting in the replacement of an expendable piece of equipment. These vessels were also involved in other incidents, including some that resulted in onboard injuries, such as passenger and crew falls resulting in injuries, but there were no fatalities.

**Table 1: Number of Marine Casualty Reports Involving Wood Sailing Vessels from January 2013 through May 2023, by Type of Incident**

Marine casualty type	Number
Vessel grounding	16
Collision or allision	11
Mechanical failure	7
Onboard injury (passenger or crew)	6
Onboard illness (passenger or crew)	4
Smoke or fire	3
Flooding	1

Source: GAO analysis of Coast Guard data. | GAO-24-106644

Note: Coast Guard requires notification whenever a vessel is involved in certain types of marine casualties such as an unintended grounding or an unintended strike of (allision with) a bridge. 46 C.F.R. § 4.05-1. Our analysis of marine casualty reports included 26 wood sailing vessels we identified because they have overnight accommodations for passengers, a hull constructed of wood, a sail or auxiliary sail propulsion, and were built before March 11, 1996. Of the 26 vessels we reviewed marine casualty reports for, 14 had more than one report, and the remainder had one or no reports during this time. The initial data set that the Coast Guard provided from May 10, 2023, did not correctly list one of the 27 vessels that we identified as having overnight accommodations for passengers. Coast Guard officials stated that MISLE had since been updated.

During our work but after the timeframe of the reports we reviewed, on October 9, 2023, one of the 27 wood sailing vessels was involved in an incident in which its mast broke and fell onto the deck. This incident resulted in one fatality and three injuries. On October 31, 2023, Coast Guard officials stated that they were investigating the incident.

### What egress deficiencies on wood sailing vessels have been identified by the Coast Guard?

The Coast Guard identified 42 deficiencies during safety inspections of the wood sailing vessels from January 2013 through July 2023 that we determined could be related to egress.<sup>6</sup> Specifically, 28 of these deficiencies explicitly mention egress, emergency, escape, or exit. The other 14 deficiencies did not specifically mention these terms but refer to a hatch or door, which could serve as an exit. The largest number of deficiencies are related to properly labeling exits, as shown in table 2. One of the 42 deficiencies resulted in the Coast Guard issuing an order that prevented the vessel from carrying overnight passengers, pending resolution of the issue.

**Table 2: Number of Egress-Related Deficiencies Identified by the Coast Guard on Wood Sailing Vessels, January 2013 through July 2023**

Deficiency category	Number	Examples
Emergency exit labeling and signage	18	<ul style="list-style-type: none"> <li>Emergency exits not properly labeled.</li> <li>Emergency exit labels needed at the top and bottom of all emergency exits.</li> </ul>
Repairs	15	<ul style="list-style-type: none"> <li>Repair or replace hatch ring.</li> <li>Repair broken glass on hatch.</li> </ul>
Compliance with egress requirements	5	<ul style="list-style-type: none"> <li>Clear pathway to allow usage of emergency escape.</li> <li>Add ladder to main cabin emergency exit.</li> </ul>
Emergency lighting	4	<ul style="list-style-type: none"> <li>Emergency lights did not adequately light exit or automatically activate upon loss of power.</li> <li>Emergency light needed at skylight emergency exit.</li> </ul>

Source: GAO analysis of Coast Guard data. | GAO-24-106644.

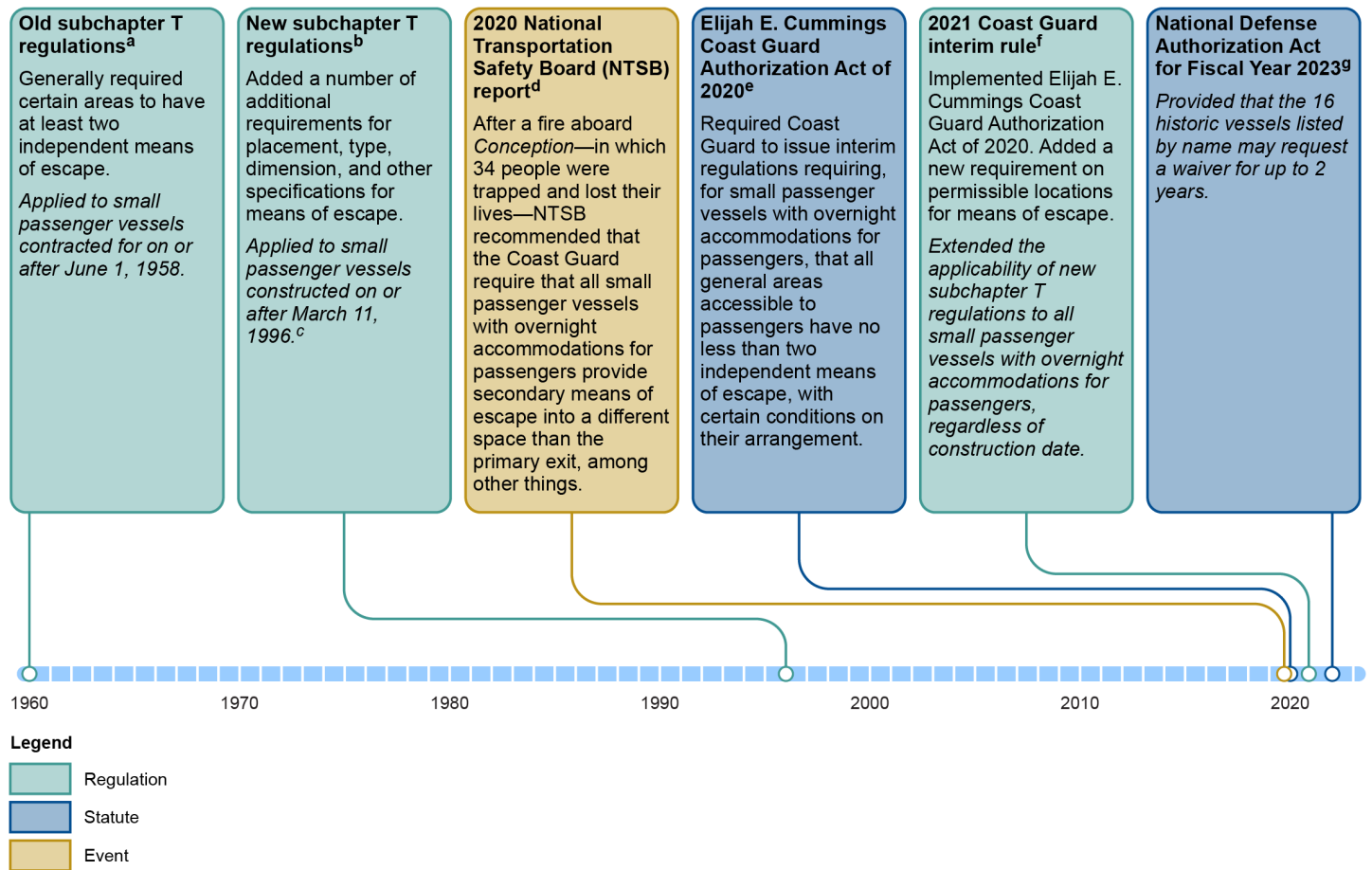
Note: Our analysis of safety inspection deficiencies included 26 wood sailing vessels we identified because they have overnight accommodations for passengers, a hull constructed of wood, a sail or auxiliary sail propulsion, and were built before March 11, 1996. The initial data set that the Coast Guard provided on May 10, 2023, did not correctly list one of the 27 vessels that we identified as having overnight accommodations for passengers. Coast Guard officials stated that MISLE had since been updated.

Coast Guard field personnel and officials from a maritime association we interviewed told us they believe that wood sailing vessels are generally safe.<sup>7</sup> For example, officials from one association representing some of the wood sailing vessels we identified stated operators of these vessels are generally safety conscious. Similarly, Coast Guard field personnel in the two sectors we interviewed stated the wood sailing vessels we identified in their respective areas of responsibility are generally safe. According to officials in one sector, some owners took additional safety measures following the 2019 accident aboard *Conception*, such as updating the electrical systems on their vessels. These officials explained some of these vessel operators go beyond the baseline for safety and maintain communication with Coast Guard field personnel, which they viewed positively.

### How have egress requirements for small passenger vessels changed over time?

Egress requirements for small passenger vessels have become more stringent over time. Specifically, these requirements became more stringent in 1996, although existing vessels were allowed to comply with older, less stringent requirements. However, the Coast Guard’s 2021 interim rule required all small passenger vessels with overnight accommodations for passengers, regardless of construction date, to comply with newer, more stringent requirements. Coast Guard headquarters officials stated they anticipate issuing a final rule on fire safety for small passenger vessels, which includes egress requirements, in November 2024. See figure 2 for a timeline of changes in egress requirements and their applicability and table 3 for a summary of requirements.

**Figure 2: Timeline Related to Egress Requirements for Small Passenger Vessels**



Source: GAO analysis of statute, regulations, and agency documents. | GAO-24-106644

Note: The information in this figure relates to small passenger vessels regulated under subchapter T of title 46 of Code of Federal Regulations.

<sup>a</sup>25 Fed. Reg. 9315 (Sept. 29, 1960).

<sup>b</sup>61 Fed. Reg. 864 (Jan. 10, 1996); 62 Fed. Reg. 51,326 (Sept. 30, 1997).

<sup>c</sup>The new subchapter T regulations required small passenger vessels that began initial construction or initiated a major conversion on or after March 11, 1996, to comply with the new subchapter T regulations. Also required to comply with the new regulations were small passenger vessels that were issued an initial Certificate of Inspection or an amended Certificate of Inspection after a major conversion on or after September 11, 1996. 46 C.F.R. § 175.400. Prior to the 2021 interim rule, existing small passenger vessels were allowed to comply with the old subchapter T regulations, unless they elected to comply with the new subchapter T regulations instead.

<sup>d</sup>Marine Accident Report: *Fire Aboard Small Passenger Vessel Conception Platts Harbor, Channel Islands National Part, Santa Cruz Island, 21.5 miles South-Southwest of Santa Barbara, California September 2, 2019*. NTSB/MAR-20/03. PB2020-101011. (Washington DC; Oct. 20, 2020).

<sup>e</sup>The Elijah E. Cummings Coast Guard Authorization Act of 2020 required the Coast Guard to issue regulations that include, with respect to small passenger vessels that are not ferries with overnight accommodations for passengers, regulations for all general areas accessible to passengers to have no less than two independent means of escape that are (1) constructed and arranged to allow for free and unobstructed egress from such areas; (2) located so that if one means of escape is not available, another means of escape is available; and (3) not located directly above, or dependent on, a berth. Pub. L. No. 116-283, § 8441, 134 Stat. 4633, 4742 (2021) (codified at 46 U.S.C. § 3306(n)(3)(A)(v)).

<sup>f</sup>86 Fed. Reg. 73,160 (Dec. 27, 2021).

<sup>g</sup>Pub. L. No. 117-263, § 11505, 136 Stat. 3998, 4134-36 (2022).

**Table 3: Summary of Egress Requirements for Small Passenger Vessels**

<p><b>Old subchapter T regulations (1960)<sup>a</sup></b></p>	<ul style="list-style-type: none"> <li>• General areas on small passenger vessels that are accessible to the passengers or where the crew may be quartered or normally employed must have at least two independent means of escape, one of which is not a watertight door.</li> <li>• A window or windshield of sufficient size and proper accessibility may be used as one avenue of escape.</li> <li>• One vertical means of escape is acceptable in compartments with a length of less than 12 feet, when there is no source of fire in the space and the escape is remote from the engine or fuel tank space or the installation of two means of escape does not materially improve safety.</li> </ul>
<p><b>New subchapter T regulations (1996)<sup>b</sup></b></p>	<ul style="list-style-type: none"> <li>• Spaces on small passenger vessels that are accessible to passengers or used by the crew on a regular basis must have at least two means of escape, one of which is not a watertight door.</li> <li>• A window or windshield of sufficient size and proper accessibility may be used as one of the required means of escape on a vessel of not more than 65 feet in length, provided it (1) does not lead directly overboard, (2) can be opened or is designed to be kicked or pushed out, and (3) is suitably marked.</li> <li>• The two required means of escape must be widely separated and, if possible, at opposite ends or sides of the space to minimize the possibility of one incident blocking both escapes.</li> <li>• The minimum opening for a means of escape generally must be at least 32 inches wide.</li> <li>• Regulations include specifications related to the ease of opening and visibility of means of escape.</li> <li>• Regulations include restrictions on when a ladder can be a means of escape and specifications for such ladders.</li> <li>• Only one means of escape is required in a space where (1) the space has a deck area less than 30 square meters (322 square feet); (2) there is no stove, heater, or other source of fire in the space; (3) the means of escape is located as far as possible from a machinery space or fuel tank; and (4) if an accommodation space, the single means of escape does not include a deck scuttle or a ladder.</li> <li>• Alternative means of escape from spaces may be provided if acceptable to the cognizant Officer in Charge, Marine Inspection.<sup>c</sup></li> </ul>
<p><b>Interim rule (2021)<sup>d</sup></b></p>	<ul style="list-style-type: none"> <li>• Small passenger vessels with overnight accommodations for passengers, regardless of build date, must adhere to the new subchapter T regulations.</li> <li>• In addition, small passenger vessels with overnight accommodations for passengers must ensure that the two means of escape are unobstructed and not located directly above, or dependent on a berth.</li> </ul>

Source: GAO analysis of regulations. | GAO-24-106644

Note: The information in this figure relates to small passenger vessels regulated under subchapter T of title 46 of Code of Federal Regulations.

<sup>a</sup>25 Fed. Reg. 9315 (Sept. 29, 1960).

<sup>b</sup>61 Fed. Reg. 864 (Jan. 10, 1996); 62 Fed. Reg. 51,326 (Sept. 30, 1997).

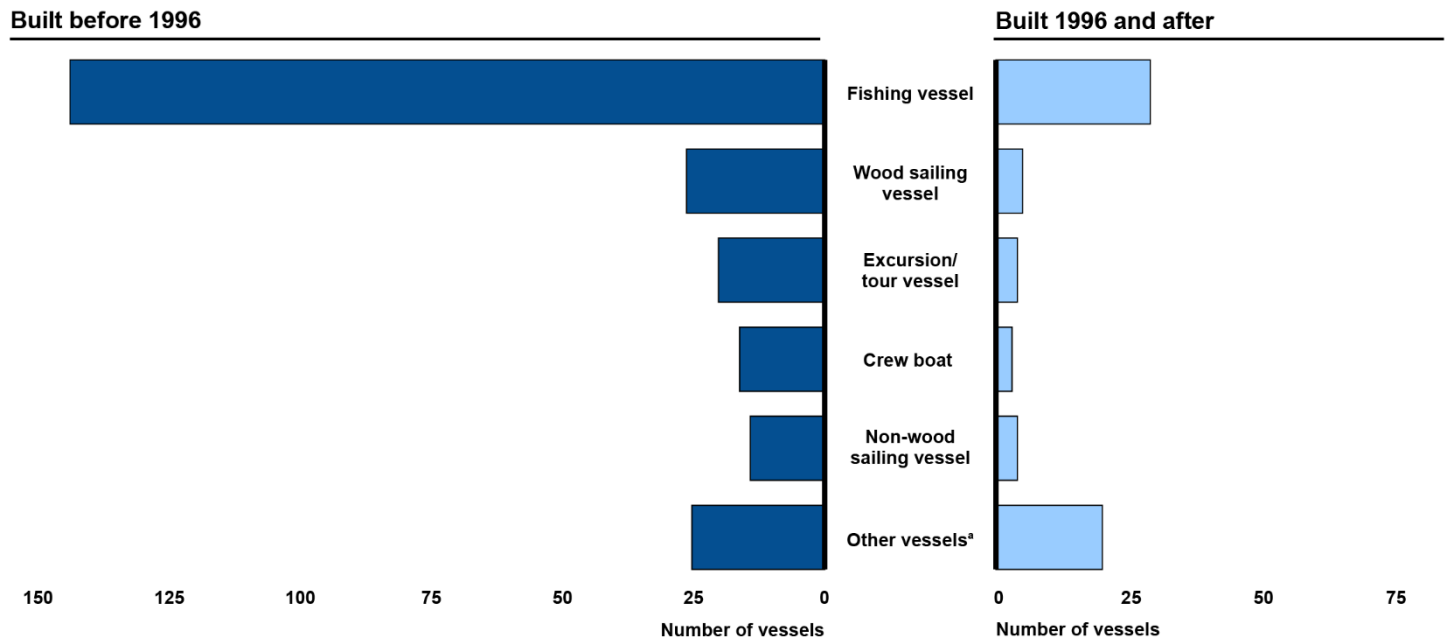
<sup>c</sup>An Officer in Charge, Marine Inspection is an officer of the Coast Guard who is in charge of an inspection zone for the performance of duties concerning the inspection, enforcement, and administration of vessel safety and navigation laws.

<sup>d</sup>86 Fed. Reg. 73,160 (Dec. 27, 2021). The Coast Guard is required to issue a final rule implementing the egress requirements, among other things, in the FY23 NDAA for small passenger vessels with overnight accommodations for passengers. Prior to issuing the final rule, the Coast Guard was to implement interim requirements, which it issued as an interim rule in December 2021. The Coast Guard has not yet issued the final rule. See 46 U.S.C. §§ 3306(n)(1), (4). Vessels were required to comply with the new subchapter T regulations for egress, as amended by the 2021 interim rule, by December 27, 2023.

**What portion of the vessels required to comply with new egress requirements are wood sailing vessels?**

Wood sailing vessels make up a small portion (27) of the 308 small passenger vessels with overnight accommodations for passengers that are required to comply with the 2021 interim rule. Specifically, our analysis of Coast Guard MISLE data found that charter fishing vessels (i.e., non-commercial fishing vessels) encompass the largest portion of the vessels that are required to adhere to the 2021 interim rule, as shown in figure 3.<sup>8</sup>

**Figure 3: Number of Small Passenger Vessels with Overnight Accommodations for Passengers Required to Comply with Egress Requirements in the 2021 Interim Rule**



Source: GAO analysis of U.S. Coast Guard data. | GAO-24-106644

Note: The information in this figure relates to small passenger vessels regulated under subchapter T of title 46 of the Code of Federal Regulations. The new subchapter T regulations required small passenger vessels built on or after March 11, 1996, to comply with new subchapter T egress regulations. Small passenger vessels built before March 11, 1996, were allowed to comply with the old subchapter T regulations—unless they elected to comply with new subchapter T requirements. The Coast Guard data we used did not specify the build month. Therefore, it is possible that some vessels categorized as being built in 1996 were subject to old subchapter T egress requirements if they were built between January and March 10, 1996. All small passenger vessels with overnight accommodations for passengers, regardless of build date, are required to adhere to the new subchapter T regulations for egress, as amended by the 2021 interim rule, by December 27, 2023. The figure includes 308 vessels—102 registered in California, 39 in Florida, and 32 in Alaska. The remaining were registered in 20 other states, with no more than 19 vessels in a respective state. In addition, of the 308 vessels in this figure, 95 are constructed of wood.

<sup>a</sup>The other vessels category includes recreational diving vessels, general vessels, harbor cruise vessels, ocean cruise vessels, oil recovery vessels, river cruise vessels, special purpose ships, and unspecified vessels.

Prior to the 2021 interim rule, the new subchapter T regulations allowed 243 of 308 vessels, including the 27 wood sailing vessels, to comply with the old subchapter T regulations because they were constructed prior to March 11, 1996.<sup>9</sup> However, even the remaining 65 vessels, which were built to the more stringent new subchapter T regulations, could require modifications. For example, the owners of these vessels may need to make modifications if one of the two required means of escape is above, or dependent upon, a berth (i.e., a bunk)—which is prohibited under the new subchapter T regulations, as amended by the 2021 interim rule. They may also need to make modifications if, in previous inspections of their vessel, the Coast Guard exercised discretion in its enforcement of certain egress requirements that is no longer permitted under the 2021 interim rule, as discussed later in this report. In addition, if the final rule makes any further changes to egress requirements, these vessels could need to be modified accordingly.

**What discretion does the Coast Guard have in enforcing egress requirements?**

The Coast Guard has discretion in its enforcement of some regulations and issued a policy letter in October 2023 to clarify what discretion can be applied in its enforcement of egress requirements. In general, “special considerations” can be granted by Coast Guard Officers in Charge, Marine Inspection. “Special considerations” allow for departures from specific requirements when unusual circumstances or arrangements warrant it and when an equivalent level of safety

is provided.<sup>10</sup> Similarly, the Coast Guard Marine Safety Center can grant an “equivalency” if it determines that a piece of equipment or arrangement provides an equivalent level of safety to that established by specific requirements.<sup>11</sup> Vessel owners or operators must apply for these special considerations and equivalencies and are able to appeal the decision through Coast Guard headquarters if their application is denied.<sup>12</sup>

In addition, for egress requirements, the new subchapter T regulations include a specific provision that allows vessel owners to provide alternative means of escape if acceptable to the cognizant Officer in Charge, Marine Inspection.<sup>13</sup> The regulations also include a provision allowing a single means of escape for spaces that meet specific conditions.<sup>14</sup>

However, Coast Guard field personnel we interviewed initially expressed confusion regarding how the 2021 interim rule would be enforced. Specifically, Coast Guard field personnel in the two sectors stated they were unclear on how much discretion they had in enforcing the rule and some expressed concern about the rule being consistently applied. While some field personnel stated they did not think they would have any discretion in enforcing the 2021 interim rule, others thought they had the same level of discretion as they had before the interim rule. According to Coast Guard headquarters officials, the prescriptive nature of the Elijah E. Cummings Coast Guard Authorization Act of 2020 requirements called into question the long-standing authority of Coast Guard Officers in Charge, Marine Inspection to exercise discretion authorized by regulation.

In addition, officials from two of the three maritime associations we interviewed stated they were unclear which areas of their vessels would require two means of escape to comply with the 2021 interim rule. Coast Guard field personnel we interviewed in July 2023 stated they had not clarified requirements for vessel operators in their area of responsibility because of their uncertainty about the 2021 interim rule.

In August 2023, Coast Guard headquarters officials stated they did not plan to issue any clarification on the 2021 interim rule. However, during our review, the Coast Guard issued a policy letter in October 2023 that clarified the 2021 interim rule. Officials stated they issued the letter, in part, because of questions they received from the maritime industry.

The policy letter clarifies several points, including which of the egress requirements for small passenger vessels with overnight accommodations for passengers the Coast Guard has discretion in enforcing. Specifically, the policy letter states that the Coast Guard may not exercise discretion in enforcing the requirements related to (a) spaces accessible to passengers requiring two means of escape, (b) means of escape not being above or dependent upon a berth, and (c) means of escape being widely separated and, if possible, at opposite ends or sides of the space to minimize the possibility of one incident blocking both escapes. According to the letter, the regulatory language “minimize the possibility of one incident blocking both escapes” is interpreted to mean that the two means of escape should lead to separate spaces, or one or both lead to an open deck.

The policy letter also clarifies that the Coast Guard has discretion in enforcing the remaining egress requirements. For example, Officers in Charge, Marine Inspection have discretion regarding the width of doors and passageways. The letter also clarifies that the 2021 interim rule does not change the provision allowing a single means of escape for spaces that meet specific conditions.<sup>15</sup> The letter requires the Coast Guard to document when a vessel has an approved



alternative means of escape or a space with a single means of escape. The policy letter will expire upon the issuance of the final rule.

Coast Guard field personnel from the two sectors and maritime stakeholders from two of the three associations we interviewed told us that this policy letter generally clarified the questions they raised about enforcement for wood sailing vessels during our review. The policy letter should help Coast Guard field personnel more consistently enforce egress requirements and communicate requirements to vessel operators.

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**What is known about the feasibility of wood sailing vessels complying with the 2021 interim rule?**

At the time of our review, it was unknown how feasible it would be for wood sailing vessels to comply with the 2021 interim rule by December 27, 2023, because each vessel is different. Some maritime stakeholders and Coast Guard field personnel initially told us that some wood sailing vessels in their area of responsibility may easily comply with the 2021 interim rule, while others may need to make significant modifications. However, with the issuance of the policy letter, field personnel and officials from two maritime associations stated that these vessels will likely not need to make major modifications, if certain Officer in Charge, Marine Inspection discretion is applied, as appropriate.

Coast Guard field personnel we interviewed stated the policy letter provided them with the clarification they need to be able to work with the vessel operators in their area of responsibility to determine whether vessels would need to make modifications to comply with the 2021 interim rule. For example, in November 2023, field personnel in one sector stated they reached out to all affected vessels in their area of operation and planned to meet with them all by December 15, 2023. According to these officials, one vessel submitted plans to remove a heat source so the space would only be required to have a single means of escape.

Prior to the issuance of the policy letter, some vessel operators we interviewed stated they were hesitant to make modifications until they received clarity on the requirements or until the final rule was issued because they are unsure if requirements will change. Coast Guard field personnel provided an example of a time in the past that Officers in Charge, Marine Inspection have required modifications for requirements that subsequently changed, which resulted in frustration from vessel owners and operators.

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**What, if any, challenges may vessels encounter in complying with the 2021 interim rule?**

While maritime stakeholders and Coast Guard field personnel generally agreed that modifications, if necessary, could be made to comply with the 2021 interim rule, they identified several potential challenges in doing so. These challenges include logistical and structural challenges, financial challenges, and time constraints. However, maritime stakeholders and Coast Guard field personnel stated the October 2023 policy letter may alleviate some of these challenges.

**Logistical and structural challenges.** According to Coast Guard field personnel and all maritime stakeholders we interviewed, modifying wood sailing vessels can be challenging. While all small passenger vessels may experience challenges, officials stated that wood vessels and sailing vessels are more likely to be affected by certain challenges. For example, modifications made to these vessels could affect the structural integrity of the vessel and weight distributions that allow them to navigate sailing conditions. According to maritime stakeholders, wood sailing vessels have support beams spaced 18-inches apart. The new subchapter T regulations stipulate that the minimum clear opening of a door or passageway used as a means of escape must be no less than 32 inches wide.<sup>16</sup> As such, according to one maritime association, adding or widening a

single means of escape may require reconstruction throughout the vessel to avoid compromising the structural integrity and safety of the vessel.

As detailed in the Coast Guard's October 2023 policy letter, the 2021 interim rule maintained the authority of the Officer in Charge, Marine Inspections to exercise discretion in enforcing the width requirements. According to officials from two maritime associations, if this discretion is applied, it may alleviate this concern about feasibility. According to field personnel from one sector, if modifications would not result in a meaningful return on safety, the Officer in Charge, Marine Inspection would likely apply discretion, as appropriate.

Further, some wood sailing vessels have small spaces in which several individual cabins may be located (see figure 4). Prior to the Coast Guard's issuance of the policy letter, officials from two maritime associations and vessel operators stated that significant reconfiguration would likely be needed if these spaces are required to have a second egress route. According to these officials, the clarification provided in the letter regarding spaces allowed to have a single means of escape may alleviate their concerns.

**Figure 4: Examples of Means of Escape from Accommodation Spaces on Wood Sailing Vessels**



Source: GAO (photos). | GAO-24-106644

**Financial challenges.** All maritime stakeholders and Coast Guard field personnel acknowledged that completing modifications to wood sailing vessels could require significant economic investment. For example, according to maritime stakeholders, minor modifications may require tens of thousands of dollars, and larger modifications could be hundreds of thousands of dollars. As some maritime stakeholders stated, in some cases, the cost of modifications could be near the value of the vessel. Coast Guard field personnel and some maritime stakeholders we interviewed told us the potential economic impact of the modifications, if needed, could put some vessel operations out of business.

In addition, some modifications may affect the number of passengers a vessel is able to accommodate, which would impact the vessel's revenue. For example, some maritime stakeholders told us if they were to change the layout of passenger cabins, they may not be able to carry as many passengers and would lose the revenue that makes their business profitable. Coast Guard field personnel and one maritime stakeholder told us a vessel operator might choose to change business models to become an uninspected vessel carrying six or fewer passengers, rather than make expensive modifications. After the Coast Guard issued its policy letter in October 2023, field personnel in one sector we

interviewed stated that the vessels in their area of responsibility would likely not need to make modifications requiring substantial financial investment, if, for example, discretion is utilized.

**Time constraints.** Some maritime stakeholders told us that modifying a wood sailing vessel could take years in some cases. For example, depending upon the nature of the modifications, maritime stakeholders we interviewed stated that there could be delays in finding a qualified maritime engineer to create plans, completing the plan review process, and finding an available shipyard to implement changes. Specifically, they noted that there are a limited number of maritime engineers and shipyards equipped to handle wood sailing vessels, due to the expertise required to work on these vessels. In addition, due to the material needed for wood sailing vessels, reconstructions or modifications may be more labor intensive to complete. According to officials from one association we interviewed, making modifications within the 2-year implementation timeline given to vessels for the 2021 interim rule is challenging.

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### What is known about how the 2021 interim rule might affect safety?

Maritime stakeholders, officials from the NTSB, and Coast Guard field personnel we interviewed offered varying views on how the 2021 interim rule may affect safety. For example, according to officials from the NTSB, requiring spaces accessible to passengers to have two means of escape increases vessel safety. Specifically, after the fire and loss of life aboard *Conception*, the NTSB recommended that the Coast Guard require that all small passenger vessels with overnight accommodations provide a secondary means of escape into a different space than the primary exit to maximize safety to passengers and crew in the event of an accident or emergency.

In contrast, vessel owners and operators and Coast Guard field personnel in one sector we interviewed noted that adding a second means of escape to a small accommodation space would not likely result in improved safety. In addition, according to Coast Guard field personnel and one maritime stakeholder, if vessel owners change their business model and become uninspected vessels, their vessels would no longer be subject to the same Coast Guard safety oversight as inspected vessels.<sup>17</sup>

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### To what extent has the Coast Guard assessed the feasibility of wood vessels complying with the 2021 interim rule?

The Coast Guard has not assessed the feasibility of wood sailing vessels complying with the 2021 interim rule. While the Coast Guard was required by statute to issue an interim rule on egress requirements, it was not required to solicit comments or conduct an economic analysis prior to issuing the interim rule.<sup>18</sup> Public comments were solicited after the interim rule was published. However, the Coast Guard is planning to conduct a regulatory impact analysis of the egress requirements on small passenger vessels as part of its final rulemaking.

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### Agency Comments

We provided a draft of this report to the Department of Homeland Security, Coast Guard, and the National Transportation Safety Board for review and comment. The Department of Homeland Security, Coast Guard, and the National Transportation Safety Board provided technical comments, which we incorporated, as appropriate.

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### How GAO Did This Study

To determine the number of historic wood sailing vessels, we requested data from the Coast Guard on vessels that met the FY23 NDAA definition of a historic wood sailing vessels. However, because no operational vessel met such criteria, we obtained and analyzed MISLE data from May 10, 2023, to determine which vessels met most of the elements of the FY23 NDAA definition. Specifically, we

included vessels that have a hull constructed of wood, overnight passenger accommodations, a sail or auxiliary sail propulsion, and were built in 1996 or before. This resulted in a list of 27 wood sailing vessels. We confirmed with the Coast Guard that the one vessel built in 1996 was built prior to March 11, 1996.

To determine what is known about the overall safety of wood sailing vessels, we analyzed MISLE data on incidents from marine casualty reports and deficiencies from safety inspections. Our analysis included 26 of the 27 wood sailing vessels we identified. The initial data set that the Coast Guard provided on May 10, 2023, did not correctly list one of the vessels as having overnight accommodations. Coast Guard officials stated that MISLE had since been updated. We selected reports from January 2013 through July 2023, which provided 10 years of data. We conducted a content analysis of these data to be able to categorize the number of incidents and deficiencies related to egress.

To determine the reliability of MISLE data, we performed electronic testing for missing values and obvious errors and discussed the data with Coast Guard officials. We determined the data were sufficiently reliable for reporting on the number and safety of wood sailing vessels.

To determine how egress requirements have evolved over time and what level of discretion Coast Guard officials have in enforcing them, we analyzed relevant statutes, regulations, and Coast Guard documents. Specifically, we analyzed the Elijah E. Cummings Coast Guard Authorization Act of 2020, FY23 NDAA, title 46, subchapter T of the Code of Federal Regulations, 2021 interim rule, and the Coast Guard's October 2023 policy letter on implementation of the 2021 interim rule.

To inform all our work, we interviewed Coast Guard officials in headquarters and field personnel in the two sectors with the largest number of wood sailing vessels, as well as officials with the NTSB. We also interviewed maritime stakeholders including a maritime engineer, three wood sailing vessel operators, and officials from three maritime associations, which include vessel owners and operators of wood sailing vessels. We selected these stakeholders because of their expertise on wood sailing vessels. In addition, we selected maritime associations with the largest representation of owners and operators of vessels in our scope. We also made observations onboard three wood sailing vessels.

We conducted this performance audit from March 2023 to January 2024 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 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.

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## List of Addressees

The Honorable Maria Cantwell  
Chair  
The Honorable Ted Cruz  
Ranking Member  
Committee on Commerce, Science, and Transportation  
United States Senate

The Honorable Sam Graves  
Chair  
The Honorable Rick Larsen  
Ranking Member  
Committee on Transportation and Infrastructure  
House of Representatives

We are sending copies of this report to the appropriate congressional committees, the Secretary of Homeland Security, the Commandant of the United States Coast Guard, and the Chair of the National Transportation Safety Board. In addition, the report is available at no charge on the GAO website at <https://www.gao.gov>.

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<sup>1</sup>Pub. L. No. 117-263, § 11505, 136 Stat. 2395, 4134-36 (2022).

<sup>2</sup>Id. at § 11505(g)(2), 136 Stat. at 4136. Small passenger vessels are regulated in subchapters K and T of title 46 of the Code of Federal Regulations. Subchapter K generally applies to small passenger vessels less than 100 gross tons that carry more than 150 passengers or have overnight accommodations for more than 49 passengers and that carry at least one passenger for hire or are chartered with or without a crew, among other things. Subchapter T generally applies to vessels of less than 100 gross tons that carry 150 or fewer passengers or have overnight accommodation for 49 or fewer passengers and that carry more than six passengers, including at least one for hire, are chartered with a crew and are carrying more than six passengers, or are chartered with no crew provided and are carrying more than 12 passengers, among other things. Because the wood sailing vessels within our scope are regulated under subchapter T, we focused on subchapter T regulations in this report.

<sup>3</sup>MISLE is the Coast Guard's database used to store data on marine accidents, pollution incidents, search and rescue cases, law enforcement activities, and vessel inspections and examinations. Our review included MISLE data as of May 10, 2023, which included over 1,000 small passenger vessels that are not ferries. Most of these vessels did not have overnight accommodations. While one of the elements of the definition in the FY23 NDAA is a vessel built before 1986, we used 1996 because new subchapter T regulation issued in 1996 required small passenger vessels built on or after March 11, 1996, to comply with the new subchapter T regulations. Small passenger vessels built before March 11, 1996, were allowed to remain in compliance with old subchapter T regulations. Twenty-three of the 27 wood sailing vessels we identified were built before 1986. According to Coast Guard officials, MISLE is an active database and vessels characteristics, such as status, and operation can change daily. According to these officials, these changes are not entry or system errors but instead represent normal MISLE updates. As such, the number of vessels and how they are characterized can change over time.

<sup>4</sup>46 U.S.C. § 11505(c), (g)(1). For the remaining three vessels, one did not have a hull constructed of wood, one is not in operation, and the other is a nautical school that is not required to comply with the egress requirements addressed in this report. Nautical schools are regulated under subchapter R of title 46 of the Code of Federal Regulations.

<sup>5</sup>The Coast Guard requires notification whenever a vessel is involved in certain types of marine casualties such as an unintended grounding or an unintended strike of (allision with) a bridge. 46 C.F.R. § 4.05-1.

<sup>6</sup>Our review included over 1,000 deficiencies from safety inspections that the Coast Guard conducted on wood sailing vessels we identified from 2013 to 2023.

<sup>7</sup>We interviewed officials and vessel operators from the two Coast Guard sectors with the largest number of wood sailing vessels that we identified—sector Northern New England and sector Puget Sound. In addition, the maritime stakeholders we interviewed included a maritime engineer, three wood sailing vessel operators, and officials from three maritime associations, which include vessel owners and operators of wood sailing vessels.

<sup>8</sup>On December 22, 2023, the National Defense Authorization Act for Fiscal Year 2024 was enacted and included a provision that the Coast Guard is not to enforce egress requirements that it implemented in its 2021 interim rule for charter fishing vessels with overnight accommodations for passengers before April 1, 2024. Operators of these vessels that are not in compliance by April 1, 2024, must submit a plan for complying with the requirements, and the Captain of the Port can extend the deadline for compliance for those vessels until not later than January 1, 2026. Pub. L. No. 118-31, § 3531(b), 137 Stat. 136, 826-28 (2023).

<sup>9</sup>The new subchapter T regulations provided that existing vessels built before March 11, 1996, had the option to comply with the regulations applicable to them on March 10, 1996, or the new subchapter T requirements. The Coast Guard data we used did not specify the build month. Therefore, it is possible that some vessels categorized as being built in 1996 may have been subject to the old subchapter T egress requirements if they were built between January and March 10, 1996.

<sup>10</sup>46 C.F.R. § 175.550.

<sup>11</sup>46 C.F.R. § 175.540. The Marine Safety Center is an independent Coast Guard command that reviews and verifies compliance with technical standards for the design, construction, alteration and repair of commercial vessels.

<sup>12</sup>46 C.F.R. § 175.560.

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<sup>13</sup>46 C.F.R. § 177.500(q).

<sup>14</sup>Only one means of escape is required in a space where: (1) the space has a deck area less than 30 square meters (322 square feet); (2) there is no stove, heater, or other source of fire in the space; (3) the means of escape is located as far as possible from a machinery space or fuel tank; and (4) if an accommodation space, the single means of escape does not include a deck scuttle or a ladder. 46 C.F.R. § 177.500(p).

<sup>15</sup>The policy letter describes how to measure deck area for the purposes of applying the provision allowing one means of escape in spaces that meet certain conditions, including that the space has a deck area less than 30 square meters (322 square feet). The policy letter provides that the deck area is the total area at the deck level, without any exclusions within the boundaries of the space. For example, no space deductions are permitted for moveable furniture, fixed items, piping, tanks, or cable runs.

<sup>16</sup>46 C.F.R. § 177.500(f).

<sup>17</sup>Small passenger vessels regulated under subchapter T of title 46 of the Code of Federal Regulations generally must undergo a Coast Guard inspection annually to verify compliance with regulatory requirements. 46 C.F.R. § 176.500.

<sup>18</sup>46 U.S.C. § 3306(n)(4).