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Legislation Partially Addresses Fatal “Duck Boat” Accidents

Amphibious passenger vehicles (APVs), widely known as “duck boats,” are tourist vehicles designed to drive on roads and operate as boats in water. Several fatal accidents have drawn attention to potential shortcomings in regulation of these unique vehicles (also known while afloat as “vessels”), which are subject to oversight by multiple federal and state agencies. Legislation passed in the House and pending in the Senate would bring tighter regulation of duck boats while afloat but does not address recommendations intended to increase their safety while operating on the road.

Duck boats host thousands of tours for more than one million passengers annually. About 200 such vehicles operate domestically. The original vehicles, referred to as DUKW, were built during World War II to deliver cargo from ships at sea directly to the shore and often to evacuate injured military personnel. The name DUKW, which became “duck” over time, is from military terminology—D refers to the year designed (1942); U refers to utility; K to all-wheel drive powertrain; and W to dual-powered rear axles.

Some of the vehicles in use today have been refurbished, and others were built more recently. Many duck boats are operated under a license from the private company Ride the Ducks International (RTDI), but others may be operated independently.

Figure 1. Amphibious Passenger Vehicle

Vessel that sank in Branson, MO



Source: National Transportation Safety Board, at <https://www.nts.gov/investigations/Pages/DCA18MM028.aspx>.

Note: Vehicle after being recovered from Table Rock Lake, MO.

Fatal Accidents

APVs have been involved in a number of accidents. In July 2018, an APV capsized during a severe thunderstorm—forecast by the National Weather Service—on a lake in Branson, MO, killing 17 of 31 persons aboard. During the

storm, waves were reportedly 3-5 feet high, and winds gusted as high as 73 miles per hour. The accident highlights gaps and discrepancies in federal safety regulations affecting APVs.

In September 2015, an APV was involved in a crash with a commercial bus on a bridge in Seattle, killing five passengers and injuring 60. In addition, APV accidents occurred in Boston in 2016, in Philadelphia in 2010, and in Seattle in 2001. An APV sinking in Arkansas in 1999 caused 13 fatalities.

Regulatory Gaps

These unique vehicles answer to several regulators. Because they operate in the open water of harbors and rivers, APVs are considered small passenger vessels, and the U.S. Coast Guard must inspect them for seaworthiness and certify the drivers as vessel captains. Since APVs also carry passengers on land, they are subject to federal commercial vehicle regulations enforced by the Federal Motor Carrier Safety Administration. State agencies typically conduct commercial vehicle inspections, and state officials must certify drivers as commercial vehicle drivers. Because they were rebuilt for commercial service as motor vehicles, APVs also must comply with certain federal standards established by the National Highway Traffic Safety Administration (NHTSA).

After investigating the 1999 APV sinking in Arkansas, the National Transportation Safety Board (NTSB), an independent federal agency, called for changes to canopies and vehicle buoyancy. Those changes have yet to be implemented. After both the 2015 crash (Seattle) and the 2018 sinking (Branson), NTSB issued accident reports with recommendations to enhance the safe operation of APVs. NTSB made the following recommendations:

- NHTSA should classify all APVs as non-over-the-road buses and make newly manufactured APVs subject to applicable federal motor vehicle safety standards;
- NHTSA should separately adopt Coast Guard rules about cargo loads and passenger seating limits;
- The Coast Guard should ensure that APV operators instruct passengers not to wear seat belts when the vehicle is operated in water;
- The Coast Guard should ensure that APV forward hatches are closed when the vehicles are in water to prevent swamping, revise its regulations to address operations under imminent severe weather, and stipulate emergency evacuation procedures should an APV begin to sink.

The NTSB report also had specific recommendations for RTDI after finding that it had failed to fully address known mechanical defects that resulted in the 2015 crash.

In 2020, the Coast Guard requested guidance from the National Academies of Sciences, Engineering, and Medicine and the Transportation Research Board on how to improve APV safety. Authorities in the fields of vehicle design and safety, engineering, and shipbuilding were appointed to review incidents. They consulted with several APV operators and the Passenger Vessel Association and issued their report in 2021. The National Academies recommended that the Coast Guard

- issue regulations to reduce APV flooding and increase passenger survivability;
- develop procedures and training for APV workers to evaluate and act on severe weather alerts; and
- require boat canopies to be removed in higher-risk operations and mandate that all passengers wear life jackets while APVs are in water.

Legislative Remedies

The 116th Congress considered legislation to improve Coast Guard regulation of APVs, with the Senate passing S. 1031, the Duck Boat Safety Enhancement Act of 2020, in December 2020. Similar legislation, S. 62, has been introduced in the 117th Congress. On March 29, 2022, the House passed legislation reported by the Committee on Transportation and Infrastructure—H.R. 6865, the Don Young Coast Guard Authorization Act of 2022—which includes new requirements for the Coast Guard’s regulation of APVs.

Changes in Construction and Procedures

If enacted, the new rules in H.R. 6865 would require APVs to provide a reserve buoyancy that would keep the vehicles upright and afloat if the passenger compartment were flooded. The passenger cabins could be watertight or have other means of built-in flotation. This requirement would take effect two years after enactment.

Before embarking, APV operators would be required to record National Weather Service forecasts in their logbooks and denote changes in the weather while underway. In instances when severe weather—especially high wind—

occurs unexpectedly, operators would be directed to proceed to the nearest harbor or safe refuge.

The Coast Guard would be directed to require that APV operators inform passengers that seat belts should not be worn during waterborne operations, so they could more easily vacate the vehicle if it were to take on water. Crew members would be required to check each passenger before waterborne departure to ensure that all seat belts—necessary for APV travel on roadways—are unbuckled. H.R. 6865 also would require annual training for APV operators and crew.

Interim Requirements

For APV operators who are not in compliance with the new regulations issued within two years of enactment, H.R. 6865 would set “interim requirements” to guide Coast Guard oversight. APV operators who are not in compliance with the new rules would be required to remove roof canopies and window coverings to permit escape by passengers. All passengers on such vehicles would be required to wear personal flotation devices when the APV is waterborne. In addition, vehicles would have to be improved to reduce through-hull penetrations that could permit water to enter the passenger cabin and be equipped with alarms and underwater lighting during emergencies.

Additional Congressional Policy Interests

After the 2015 APV crash on a bridge in Seattle, NTSB called for three new NHTSA rules that the agency has not adopted, according to NTSB. NTSB recommended that NHTSA (a) adopt the Coast Guard’s assumed per-person average weight, affecting axle designs for cargo loads and passenger seating, (b) classify all APVs as non-over-the-road buses, and (c) ensure that all new APVs meet all federal motor vehicle safety standards at the time of their manufacture.

As its focus is the Coast Guard, H.R. 6865 does not address these NTSB recommendations concerning APV operations on land.

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