

**Review and discussion of the results of the FWC airboat sound study
and associated recommendations.**

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History

The Fish and Wildlife Conservation Commission (FWC) does not have authority to adopt rules regarding airboat muffling devices under the Florida Administrative Code. Current Florida law requires all "vessels" to be effectively muffled in a reasonable manner under F.S. 327.65. The statute also provides additional optional language that counties could adopt if they want to further limit vessel noise to 90 decibels at 50 feet. The optional 90 decibels at 50 feet restriction is NOT a statewide restriction.

Airboats have two sources of sound, the engine and the prop. At low RPM the engine produces the most sound. However, when exceeding about 50 percent of full operating power, the movement of the prop through the air generally begins to produce sound levels in excess of the engine noise.

Twenty years ago, sportsmen primarily used airboats to reach remote wetland areas. Because of the typically remote use of airboats and predominate propeller sound, most law enforcement agencies have accepted "flexpipe" (in place of an airboat engine muffler) to satisfy the statutory requirement for reasonable muffling. Flexpipe is generally flexible stainless steel tubing that diverts the engine exhaust from the engine to the rear of the boat but does not have any internal baffling like mufflers. Today the spread of waterfront development and the greater recreational use of airboats in more accessible water bodies have led to an increase in complaints from people disturbed by airboat noise.

In the belief that flexpipe is no longer an adequate muffling device, FWC has installed mufflers on all our airboats. Many other government agencies have as well. More and more airboaters are following this example every day. The installation of efficient mufflers helps quiet airboats at moderate travel speeds when the propeller noise is not a factor.

Former Senator Anna Cowin (Leesburg) sponsored legislation in 2003 proposing to restrict airboat noise statewide to 90 decibels at 50 feet. The Senate Natural Resources Committee amended the bill, proposing to give the FWC rulemaking authority to adopt a uniform municipal code to resolve the airboat noise issue. However, in lieu of the bill moving forward, Senator Cowin asked the FWC to host public workshops regarding airboat noise. The FWC agreed and hosted three public workshops in September 2003, attended by a total of about 300 people.

Three general themes emerged from the workshops: (1) support for the development of an airboater code of ethics, (2) support the installation of effective mufflers on all airboat engines and (3) a lack of consensus regarding any statutory changes.

Current Situation

The Boating Advisory Council (BAC) (appointed by the Governor to advise the FWC and Department of Community Affairs on boating and waterway related issues) agreed to form a "subcommittee" to develop an airboater code of ethics. The subcommittee included representatives from the personal watercraft industry, airboat manufacturers, sportsmen groups, the boating public and an affected waterfront resident. The group produced a code of ethics that is to be included in boating educational materials distributed by the FWC as well as airboat industry catalogues and publications. In February 2005 FWC staff examined how to apply the Airboater's Code of Ethics to the different conditions and activities associated with agency use of airboats in conducting resource work and law enforcement patrols. A protocol titled "Guidelines for Courteous Airboat Operation" was developed for FWC staff use. That document encourages changes in operator behavior to reduce airboat noise disturbance. These guidelines may also have good application to the general public. A group of FWC employees with the appropriate expertise will be tasked with developing a future outreach campaign to promote the application of any new and improved technology for quieting airboats resulting from the research discussed below, as well as to encourage changes in airboater attitudes and operating procedures to be more sensitive to others around water bodies.

FWC Division of Law Enforcement received direction from the FWC Commissioners at the February 2004 Commission meeting, to complete a research project to provide scientifically sound data relating to airboat sound. The Florida Atlantic University Engineering Department was contracted to research airboat design configurations and identify the most technologically effective means to quieting airboats.

The contractors have developed a preliminary draft report, entitled "*Measurement and Characterization of Sound Generated by Airboats.*" The preliminary report suggests that mufflers do, in fact, reduce airboat sound levels at moderate operating speeds. In contrast, the preliminary data also indicated that even muffled airboats exceed 90 decibels at maximum throttle. However, it is important to note that this is generally not an operating speed that is maintained for extended periods.

From the review of the early data, researchers focused the final research phase on examining sound levels produced from additional styles of mufflers (including both exhaust mufflers and intake manifold mufflers), differing propeller designs, different operating speeds and distances from the observer. Researchers believe that each of these measures may shed light

on additional ways to reduce airboat noise. It is possible that the use of mufflers, when combined with other modifications that reduce sound levels (e.g., possibly intake mufflers, specialized propeller designs and even some structural changes in the boat engine framework) could provide the needed ***“incremental-improvements”*** to significantly reduce airboat sound levels.

The final report is completed and is undergoing peer review by two leading scientists in the field of sound research. This added step was taken because to ensure that the study can stand up to public scrutiny and provides fully credible, objective and science-based solutions aimed at reducing airboat sound levels. Dr. Stewart Glegg, the lead researcher on the project, will present the study results at the September Commission meeting on September 21, 2005.

Recommendation

- Update the FWC enforcement standard for airboats to now require a muffler.
- Hold a workshop with stakeholders to discuss implementation of the muffler policy and the Airboater’s Code of Ethics and Guidelines for Courteous Airboat Operation.
- Final hearing on the new muffler policy to be held at the November 30-December 2, 2005 Commission meeting.