



## FULL ANALYSIS

### I. SUBSTANTIVE ANALYSIS

#### A. HOUSE PRINCIPLES ANALYSIS:

Provide limited government – The bill provides for additional regulations by Fish and Wildlife Conservation Commission for the operation and equipping of airboats.

#### B. EFFECT OF PROPOSED CHANGES:

### **PRESENT SITUATION**

#### **Background**

Airboats have a long history going as far back as the early 1900s. Around 1905, Alexander Graham Bell joined a team of aviation and boating inventors, including Glenn H. Curtis, early aviator and the inventor of aircraft engines, in Halifax, Nova Scotia where experiments were conducted combining aircraft engines and props and boats. Around 1920, Curtis moved to South Florida and introduced the first airboat to the Florida Everglades.<sup>1</sup>

According to the American Airboat Corporation an airboat is defined as a “buoyant self-propelled multi-terrain vehicle that depends on air thrust for propulsion.”<sup>2</sup> Airboats have also been defined as flat-bottomed boats (or punts) powered by a propeller attached to an automobile or aircraft engine. The propeller spins at high speed and requires a large metal cage to protect passengers. The flat bottom of the boat allows airboats to navigate easily through shallow swamps and marshes as well as canals, rivers, and lakes. Drivers of airboats sit high on a platform to improve visibility and for spotting floating obstacles and animals in the airboat’s path. Steering of the airboat is accomplished by swiveling vertical fins positioned in the propeller wash. Airboats vary in size from up to 20 (or more) person tour airboats to trail airboats for two to three passengers.

According to the American Airboat Corporation, airboats can reach speeds of 45 mph on land, 60 mph on water, and 70 mph on ice, with the top speed of about 135 mph on smooth, shallow water.

Before 1980, 90% of the airboats used aircraft engines to power the propeller. The rest used automotive engines. Since 1980, 90% of the airboats built have automotive engines because of their ease of maintenance and more readily available parts. Because of the engines used on airboats and the use of the propeller for moving the airboat, airboats typically generate high noise levels.

#### **National Association of State Boating Law Administrators Model Motorboat Noise Act**

The National Association of State Boating Law Administrators (NASBLA) represents the boating authorities of all 50 states. In 1989, the NASBLA adopted a model act for motorboat noise. On September 21, 2005, the act was made a part of the 2005 NASBLA Model Acts Review and Standardization Project. The act requires that all motorboats with above-water exhaust install mufflers to reduce exhaust noise and limit shoreline sound level to 75 decibels.

According to the NASBLA (see [www.nasbla.org](http://www.nasbla.org)), 32 states have adopted noise regulations equivalent to the requirements described in the Model Act for Motorboat Noise.

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<sup>1</sup> See <http://www.glenncurtissmemorialpark.com/curtisshistory.html>

<sup>2</sup> See <http://www.americanairboats.com-FAQ.htm>

The intent of the Model Act is to address motorboat noise and does not address noise generated from other means such as the propeller on an airboat. However, since many airboat associations, including many Florida airboat associations, have expressed the desire that airboats not be discriminated against in the application of noise regulations, it is useful to briefly discuss the NASBLA Model Act.

In the Model Act, the term “muffler” is defined “as a sound suppression device or system designed and installed to abate the sound of exhaust gases emitted from an internal combustion engine and which prevents excessive or unusual noise.”

The Model Act provides for noise level restrictions for motorboats. Under the provisions of the Model Act, no motorboat operator shall operate a motor boat that exceeds the following noise levels:

- For engines manufactured before January 1, 1993, a noise level of 90 decibels.
- For engines manufactured on or after January 1, 1993, a noise level of 88 decibels.

The Model Act establishes requirements for mufflers which include the following:

- Every motorboat shall at all times be equipped with a muffler or a muffler system in good working order and in constant operation and effectively installed to prevent any excessive or unusual noise.
- No person shall operate any motorboat that is equipped with an altered muffler or a muffler cutout or bypass or that otherwise reduces or eliminates the effectiveness of any muffler or muffler system.
- No person shall remove, alter, or otherwise modify in any way a muffler or muffler system in a manner that prevents it from being operated in accordance with the provisions of the act.

The Act provides that no person shall manufacture or sell any motorboat with a muffler or muffler system which does not comply with the noise restrictions stated above.

The Act provides exemptions for the motorboat noise restrictions. Such restrictions do not apply to motorboats registered and actually participating in a racing event or tune-up periods for such racing events which must be conducted in accordance with and permitted by the United States Coast Guard or the state boating authority.

And finally, the Act includes provisions for the enforcement of the noise restrictions. Any law enforcement officer authorized to enforce the noise level provisions of the act who has reason to believe that a motorboat is not in compliance with the noise levels of the act, may direct the person operating the motorboat to submit the motorboat to an on-site test to measure the noise level. If the motorboat exceeds the noise level, the officer may direct the operator to take immediate and reasonable measures to correct the violation, including returning the motorboat to a mooring and keeping the motorboat at the mooring until the violation is corrected and ceases.

### Florida Airboats Associations

There are a number of airboat associations throughout Florida and a statewide airboat association called the Florida Airboat Association (FAA). The FAA was established in 1994 and according to its website ([www.flairboat.com](http://www.flairboat.com)) is “dedicated to the conservation of our natural resources, the preservation of sportsmen’s rights and the promotion of boating safety through community involvement and public education.” In addition to the statewide airboat association, there are a number of local airboat associations, including:

- Brevard Airboat and Powerboat Association
- Broward County Airboat, Halftrack, and Conservation Club
- Citrus County Airboat Alliance
- Glades Airboat and Buggy Association

- Highlands Airboat Association
- Indian River County Boat Association
- Kissimmee River Valley Sportsman Association
- Lake County Airboat Association
- Lake Okeechobee Airboat Association
- National Airboat Racing Association (Florida branch)
- Osceola Airboat Association
- Orange County Airboat Association
- Palm Beach County Airboat and Halftrack Conservation Club
- Peace River Valley Airboat Club
- Seminole County Airboat Club
- Volusia County Airboat Association
- Airboat Association of Florida
- West Coast Airboat Club
- Withlacoochee Region Airboat Association

### **Current Law**

Chapter 327, F.S., the Florida Vessel Safety Law, provides the FWCC with authority over the operation, regulation, and safety of vessels on Florida waters. Section 327.02(37), F.S., defines a vessel to be synonymous with “boat” as referenced in s. 1(b), Art. VII of the State Constitution, and includes every description of watercraft, barge, and airboat, other than a seaplane on the water, used or capable of being used as a means of transportation on water.

Sections of Chapter 327 address numerous issues relating to the regulation of vessels including such areas as: the reporting of accidents (s. 327.30, F.S.); reckless and careless operation of vessels (s. 327.33, F.S.); boating under the influence (s. 327.35, F.S.); testing for alcohol, chemical or controlled substances (s. 327.352, F.S.); personal watercraft regulations (s. 327.39, F.S.); boating safety courses and identification cards (s. 327.395, F.S.); the creation of the Boating Advisory Council (s. 327.803, F.S.); and muffling devices on vessels (s. 327.65, F.S.).

Section 327.65(1), F.S., requires that the exhaust of every internal combustion engine used on any vessel operated on the waters of the state must be “effectively muffled” by equipment constructed and used to muffle the noise of the exhaust in a “reasonable manner.” The use of “muffler cutouts” (cutouts, bypasses or other devices that increase sound pressure levels or change the original manufactured exhaust system of the vessel) is prohibited, except for vessels competing in a boating regatta or official boat race and for vessels while on trial runs.

Section 327.65(2)(a)1., F.S., authorizes counties to impose additional noise pollution and exhaust regulations on vessels by way of county ordinances. A county may adopt an ordinance which prohibits a person from operating any vessel in such a manner as to exceed 90dB A at a distance of 50 feet from the vessel. The term “dB A” means “the composite abbreviation for the A-weighted sound level and the unit of sound level, the decibel.” “Sound level” means “the A-weighted sound pressure measured with fast response using an instrument complying with the specifications for sound level meters of the American National Standards Institute, Inc., or its successor bodies, except that only a weighting and fast dynamic response need be provided.”<sup>3</sup>

Section 327.65(2)(a)2., F.S., provides that any person operating a vessel and who refuses to submit to a sound level test when requested to do so by a law enforcement officer can be cited and could be found guilty of a misdemeanor of the second degree.

### **Airboats and Noise Issues**

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<sup>3</sup> Section 327.65(2)(b), F.S.

According to the FWCC, the language in s. 327.65(1), F.S., regarding a vessel's (including airboats) exhaust to be "effectively muffled . . . in a reasonable manner," lacks specificity and allows for considerable room for interpretation. The FWCC, adopting the interpretation by the former Game and Fresh Water Fish Commission, permitted the use of "flex-pipe" (flexible tubing that diverts engine exhaust to behind the airboat) as an effective muffling device for airboats. Such devices became common and accepted by the airboat community. However, as the number of waterfront residences and airboats has increased over the years, the "effectiveness" of muffling airboats with "flex-pipe" has raised considerable concerns relate to the noise of airboats on Florida's waterways.

In 2003, a bill was filed (SB 1012) which would have restricted airboat noise statewide to 90 decibels at 50 feet. The bill was heard in the Senate Natural Resources Committee and was amended to authorize the FWCC to adopt a rule which would provide a uniform ordinance for vessel sound regulation that could be adopted by any county or municipality. The bill did not pass out of the Senate committee; but there was an expectation that the FWCC would hold public workshops on airboat noise.

Following several public workshops held across the state, the FWCC asked the Florida Boating Advisory Council to develop a code of ethics for airboat operators (see below). In addition, FWCC staff was directed to initiate a research project (see below) that would provide direction on the types of muffling devices that could effectively muffle airboat engines.

### Code of Ethics

The FWCC requested the state's Boating Advisory Council to develop an Airboat User Code of Ethics. An April 26, 2004 version of the code of ethics included the following:

- Respect the rights of everyone to enjoy Florida's waterways.
- Learn and observe all State of Florida boating regulations, navigation rules, and vessel safety equipment requirements.
- Recognize that the noise generated from an airboat propeller and engine exhaust system may annoy other people in the area.
- Equip the airboat with an approved muffling device and operate the airboat in a manner that will reduce engine exhaust sound levels.
- Operate an airboat at a slow speed on or near boat ramps and move away from the boat ramp an adequate distance before powering up the airboat, and where possible, no power loading of the airboat on to the trailer.
- Use slow speeds to reduce noise near residential and public use areas.
- Be extra cautious to reduce sound levels of an airboat during nighttime hours.
- Understand that the public will judge all airboat users by the actions of one.
- Protect natural resources and do not needlessly disturb wildlife.

### Noise Study

FWCC contracted with a research team from the Florida Atlantic University (FAU) College of Engineering to conduct tests and analysis on airboat sound/noise.

The FWCC/FAU airboat sound/noise research project intended to answer the following questions:

- What level of sound can be obtained from an airboat using various automotive-type muffling devices, "flex-pipe," or other devices on the wider range of airboat propulsion systems?
- How do sound levels generated by an airboat's engine's exhaust compare to those sound levels generated by the airboat's propeller blades?
- To what extent do environmental factors affect the resonance and nature of the sound generated by an airboat?

- What mechanical and technological changes and devices could be developed and used to help quiet airboats?

The research project was conducted on a lake in the Ocala National Forest using 13 different airboat configurations with a variety of different engines, propellers, and mufflers. Sound measurement equipment and methodology were used to record and analyze the sounds generated by the test airboats at idle, 50%, and 100% operating conditions for both stationary and drive-by tests.

The findings from the research project were as follows:

- When running at full speed, airboats noise levels exceeded the current statutorily prescribed 90 decibels at 50 feet.
- When running at full speed, mufflers have little or no effect on the noise radiated by airboats.
- Mufflers do reduce an airboat's radiated noise levels at minimal planing speeds by about 4 decibels.
- At minimum planing speeds or less, most airboats meet the current statutorily prescribed 90 decibel noise limit at 50 feet.
- Flex pipes without mufflers provide some level of noise attenuation at higher airboat engine RPM, but not at lower RPM.
- Measurement of the effect of mufflers on airboats showed that they provide broadband noise attenuation at lower airboat operational speeds.
- When operating under different conditions, the noise level for an airboat's given configuration of engine, gearbox, propeller, and muffler was only a function of engine RPM, and not a function of vessel weight or speed.
- Airboat operators are likely to be at risk of hearing damage and it is likely that noise exposure limits could be exceeded for bystanders in the vicinity of boat ramps where airboats are maneuvering or power loading onto trailers.
- Sound levels generated by airboats when running at full speed are dominated by propeller noise.

In addition, the authors of the research project made the following recommendations:

- Airboat engine and propeller RPM should be minimized to reduce noise levels.
- Airboat propellers should be designed to maximize thrust at lower tip speed to reduce the noise levels of propellers.

Based on these findings and recommendations, on September 21, 2005, the FWCC directed staff to draft a new policy that would require airboats to be equipped with mufflers and that the use of flex-pipes alone would no longer be acceptable to help reduce the noise levels of airboats. FWCC staff also continued to hold public meetings throughout the state for the purpose of taking testimony from the airboat user community and persons who are or may be adversely affected by the noise generated by airboats.

On January 24, 2006, the FWCC issued a Marine Enforcement Alert establishing a law enforcement protocol requiring airboats to use automotive-style mufflers to reduce engine exhaust sound levels. "Muffler" is defined as "an automotive-style sound suppression device or system designed and installed to abate the sound of exhaust gasses emitted from an internal combustion engine and which prevents excessive or unusual noise."

Through June 2006, the FWCC will implement a formal education effort making airboat operators and users aware of the required muffler provisions and by July 1, 2006, FWCC law enforcement officers will begin an education/enforcement phase where officers will issue warnings for non-compliance and citations for repeated non-compliance. Persons violating the muffler requirement will be charged under Section 327.65(1), F.S., as a failure to meet vessel engine exhaust muffling requirements.

## **EFFECT OF PROPOSED CHANGES**

The bill amends s. 327.02, F.S., to add definitions for the terms “airboat” and “muffler.” An “airboat” is defined as “a flat-bottomed vessel, designed for use in shallow waters, powered by a combustion engine with an airplane-type propeller mounted above the stern used to push air across a single set of rudders.” A “muffler” is defined as “a sound suppression device or system designed to abate the sound of exhaust gases emitted from an internal combustion engine and prevent excessive sound when installed on such engine.”

The bill creates s. 327.391, F.S., to provide for the regulation by the FWCC of airboats and their operation and equipment. Specifically, the provisions of the new s. 327.391:

- Require that airboats be operated in a reasonable and prudent manner and that airboats must not be operated in a reckless manner.
- Require that an airboat must have a muffler on its engine capable of adequately muffling the sound of the exhaust of the engine.
- Prohibit the use of cutouts, except for vessels competing in a regatta or official boat race and for vessels while on trial runs at such events.
- Provide that an airboat cited for a violation of the muffling requirements of the bill, must show proof of the installation of a muffler before the airboat can be operated on the waters of the state.
- Require airboats to be equipped with a mast or flagpole bearing a flag at a height of at least 6 feet above the deck of the airboat. The flag must be at least 20 inches in height and width and international orange in color. Airboat operators not complying with the flag requirement may be cited for reckless operation of a vessel, punishable as provided in s. 327.33(1). F.S.
- Require that airboats be subject to the provisions of Chapter 327, F.S., known as the Florida Vessel Safety Law.
- Provide that nothing in the newly created s.327.391, F.S., shall prevent the adoption of any ordinance or local law relating to the operation of airboats and their equipment, except that the ordinance or local law may not discriminate against airboats.
- Exempt from the requirements of the section a performer engaged in a professional exhibition and persons who are preparing to participate or who are participating in a regatta, race, marine parade, tournament or exhibition which is held in compliance with s. 327.48.

The bill makes conforming changes and corrects cross-references to several sections of statute.

The bill has an effective date of October 1, 2006.

### **C. SECTION DIRECTORY:**

Section 1: Amends s. 327.02, F.S., by creating definitions for “airboat” and “muffler.”

Section 2: Creates s. 327.391, F.S., regulating the operation of airboats.

Section 3: Amends s. 320.08, F.S., to conform a cross-reference.

Section 4: Amends s. 328.17, F.S., to conform a cross-reference.

Section 5: Amends s. 342.07, F.S., to conform a cross-reference.

Section 6: Amends s. 616.242, F.S., to conform terminology.

Section 7: Amends s. 713.78, F.S., to conform terminology.

Section 8: Amends s. 715.07, F.S., to conform a cross-reference.

Section 9: Provides an effective date of October 1, 2006.

## **II. FISCAL ANALYSIS & ECONOMIC IMPACT STATEMENT**

### **A. FISCAL IMPACT ON STATE GOVERNMENT:**

1. Revenues:

None.

2. Expenditures:

See Fiscal Comments below.

### **B. FISCAL IMPACT ON LOCAL GOVERNMENTS:**

1. Revenues:

None.

2. Expenditures:

None.

### **C. DIRECT ECONOMIC IMPACT ON PRIVATE SECTOR:**

The bill requires airboat owners and the airboat industry to modify/retrofit/replace equipment to meet the requirements of this legislation. Costs associated with compliance efforts will vary and cannot be determined at this time.

### **D. FISCAL COMMENTS:**

The bill requires proof of a muffler installation before the airboat can be further operated, if a citation is issued. This would create a tracking obligation of the part of FWCC and the development on an inspection plan to ensure compliance by persons who have been cited for a violation of the muffler requirements of the bill. FWCC is unable to provide a cost estimate for the compliance tracking system.

## **III. COMMENTS**

### **A. CONSTITUTIONAL ISSUES:**

1. Applicability of Municipality/County Mandates Provision:

The bill does not appear to require cities or counties to spend funds or take actions requiring the expenditure of funds. Nor does the bill reduce the authority that cities and counties have to raise revenues in the aggregate or reduce the percentage of a state tax shared with cities or counties.

2. Other:

None.

**B. RULE-MAKING AUTHORITY:**

Although not specified in the bill, the bill may require FWCC to adopt rules relating to the operation of airboats and equipment required on airboats.

**C. DRAFTING ISSUES OR OTHER COMMENTS:**

Although the bill addresses the suppression of noise from the operation of airboats emanating from the engine by requiring a specified muffler, the bill does not address nor provide any provisions or requirements that would address the suppression of airboat noise emanating from the airplane-type propeller mounted above the stern of the airboat.

FWCC staff has provided the following comments on and concerns with the bill.

The bill defines an airboat as “a flat-bottomed vessel, designed for use in shallow waters, powered by a combustion engine with an airplane-type propeller mounted above the stern used to push air across a single set of rudders.” Not all airboats are truly flat-bottomed and this definition could exclude certain airboats from the provisions of the bill. Technically, any vessel using an engine driving an aircraft-type propeller system to provide rearward thrust for propulsion should be considered an airboat. Additionally, the word “internal” should be added before “combustion” when describing the engine powering the vessel.

The bill provides a list of maneuvers that constitute reckless operation of an airboat. These violations are similar to those in place for personal watercraft and may not be applicable to airboat operation. For example, airboats are generally not observed being operated in a manner where they are weaving through congested vessel traffic or swerving at the last possible moment to avoid a collision. Airboat maneuvers such as these can be charged as reckless operation under current Florida law, depending upon the totality of the circumstances.

The bill specifies muffler requirements for airboat engines. Such muffler equipment requirements are pre-empted by federal regulations as follows:

“Unless permitted by the Secretary under section 4305 of this title, a State or political subdivision of a State may not establish, continue in effect, or enforce a law or regulation establishing a recreational vessel or associated equipment performance or other safety standard or imposing a requirement for associated equipment (except insofar as the State or political subdivision may, in the absence of the Secretary's disapproval, regulate the carrying or use of marine safety articles to meet uniquely hazardous conditions or circumstances within the State) that is not identical to a regulation prescribed under section 4302 of this title.” (TITLE 46 – Shipping, Subtitle II – Vessels and Seamen – Part B – Inspection and Regulation of Vessels CHAPTER 43 – Recreational Vessels, Sec. 4306 – Federal Preemption)

The FWCC has requested an opinion from the U.S. Coast Guard as to whether FWCC is exempt from this rule.

The bill requires an “airboat” cited for a muffler violation to show proof of muffler installation before it is further operated on state waters. The language should refer to “airboat operator” since an “airboat” cannot be cited for a violation. Further, the bill does not specify to whom this proof must be shown or the form this proof must take. This requirement creates a tracking obligation for FWCC and the necessity to develop an inspection plan to ensure compliance by those who have been cited for a muffler violation. The cost for such tracking/inspection plan is not known at this time.

The bill creates a flag requirement for airboat operation and makes operation without a flag reckless operation of a vessel. This provision enacts a flag requirement for airboats in conflict with current FWCC Rules for flags on airboats in the Everglades. The bill requires that the flag must be at least 6 feet above the deck of an airboat. However, on many airboats, the metal cage housing the propeller extends higher than 6 feet above the deck of the airboat. Because a violation of the flag requirement is declared to be reckless operation, a person whose flag is lost or broken is subject to up to one year imprisonment, a fine of up to \$1000, or both. Such a violator would lose his or her boating privilege upon conviction (even if adjudication was withheld and the sentence suspended) until a state-approved boating course could be completed. Moreover, an airboat operator whose orange flag was defective or missing and who was involved in a fatal boating accident would be guilty of "vessel homicide" under s. 782.072, F. S., even if he or she was otherwise entirely without fault in the accident. FWCC staff recommends that consideration should be given to making a violation of this provision less severe.

Aside from the prohibition against local ordinances discriminating against airboats, subsection (5) in Section 2 of the bill is redundant to existing s. 327.60, Florida Statutes. It is internally inconsistent in that it first specifically allows "the adoption of any ordinance or local law relating to airboat operation and equipment" and then specifically prohibits ordinances and local laws that "discriminate against airboats as defined in s. 327.02."

#### **IV. AMENDMENTS/COMMITTEE SUBSTITUTE & COMBINED BILL CHANGES**