

Robert W. Rand, ASA, INCE (Member Emeritus)

RAND ACOUSTICS, LLC

65 Mere Point Road

Brunswick, ME 04011

E-mail: rrand@randacoustics.com

Telephone: 207-632-1215

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VIA ELECTRONIC MAIL

130th Maine Legislature

Committee on Inland Fisheries and Wildlife

Re: LD 114 - An Act To Address Airboat Operations in the State (OPPOSE)

I respectfully submit this testimony to register my objection to the legalization of excessive noise from airboats operation on Maine waters, and provide recommendations.

1. I grew up on the Coast of Maine and support working waterfront businesses and shellfish harvesters. Shellfish harvesting is a vital part of the Maine economy. Up until recently, airboats had not been used on the Maine coast. As a noise professional, with decades of experience in noise control, I understand the adverse impacts of excessive intrusive noise. The noise producer is responsible for noise emissions and control.
2. Airboat noise is a problem. Airboats are much louder than any other commercial watercraft. Airboat noise is similar to aircraft noise but is emitted at water level. Airboat noise is dangerously loud close in, as much as 105 dBA or more within 50 feet. At the operator seats, earplugs and muffs may be insufficient to prevent hearing loss, which starts as low as 70 dBA.
3. Ocean acoustics increase airboat apparent loudness compared to noise sources on land. Noise sources on the water can carry farther distances than noise sources on land, due to the way noise propagates over water; roughly 5 dB per doubling of distance versus 6 dB per doubling of distance over land. Most people on the Maine coast are familiar with being on the shore and hearing someone talking on a boat or their radio clearly enough to be understandable at a 1/2 mile to a mile; especially in the early morning.
4. I have personal experience with airboat noise while renting a house on the west side of Mere Point from September 2018 to May 2019. For months, pretty much each day, airboats launched at the Boat Launch on the east side, transited around the point, proceeded northeast up Maquoit Bay to the flats, and would later return headed southwest and around the point back to the Boat Launch. Airboats struggled to maintain headway in winter winds, which would carry the elevated high-throttle airboat noise to the shore. The airboat noise from 600 feet away disturbed sleep and use of the home indoors, and was loud enough to interfere with speech communications outdoors.
5. I understand LD114 would adopt the J1970 shoreline test as the operational limits, by legalizing intrusive airboat noise levels onshore by as high as 90 dBA from 7am to 7pm, and 75 dBA 7pm to 7am, except for allowing up to 90 dBA onshore to "achieve headway speed when leaving a boat launch".
6. Noise levels intruding at 90 dBA onshore, interfere with speech communication beyond about 3 feet (ANSI S12.65 Figure 1 notated below). Intrusive noise at this level creates a potential safety hazard onshore when and where people are unable to communicate due to excessive intrusive noise. Simply put, the 90 dBA is too loud. An intrusive level of 75

dBA is still excessive for amenity; speech communications are possible at close distances.

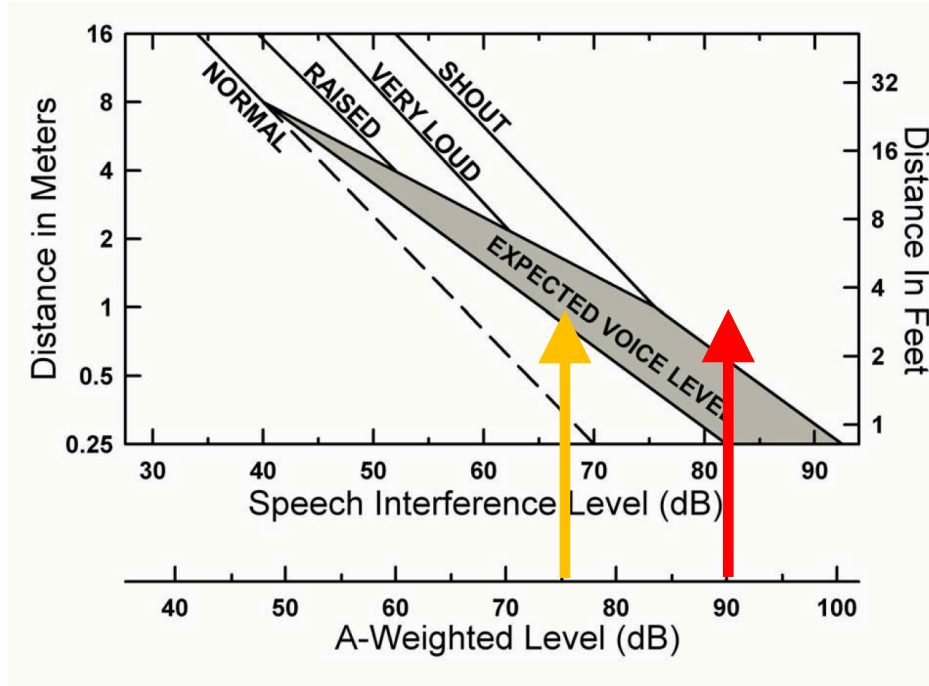


Figure 1 – Talker-to-listener distances for just-reliable communication. The region below each curve shows the talker-to-listener and noise-level combination for which just-reliable face-to-face communication is possible. The parameter on each curve indicates the relative voice level. The A-weighted sound level shown below the abscissa is approximate. The relation between speech interference level and A-weighted sound level depends on the spectrum of the noise. See 5.2.2, Note 3.

7. I strongly recommend that the Committee require 1) a lower onshore noise limit, 2) "Best Available Technology" for airboat blades and acoustic treatment, 3) acoustic mufflers, and 4) engine enclosure. The propeller is the main source of noise. Noise is a function of tip speed. Lower rpm is quieter, but low-frequency inflow loading noise can increase with increased blade angle of attack. Noise emissions tend to decrease significantly with more blades. Engines radiate low frequency noise and should be enclosed using best available technology.
8. Testing can inform regulation and support quieter shellfish harvesting. Hearing loss and speech interference from excessive noise are serious safety issues. Public safety, health and welfare, and amenity, should be protected by limiting noise emissions.

Thank you for your consideration of this testimony. If you have any questions, please contact me.

Respectfully Submitted,

Robert W. Rand, ASA, INCE (Member Emeritus)