



November 1, 1995

NUI Report No. 8077.1

State of New Jersey, Department of Law and Public Safety
Division of State Police, Marine Law Enforcement Bureau
P.O. Box 7068
West Trenton, NJ 08628-0068

Attention: Lt. Edward R. DeVane

Subject: Boat Noise Tests Using Static and Full-Throttle Measurement Methods

Reference: Purchase Order No. 3610126

Pursuant to your request, the Subject tests were conducted on September 26, 1995, and October 3, 1995.

1. MEASUREMENTS

Two measurements were made for each type of boat, as follows:

1.1 Static Measurement

These measurements were made with the engine at idle with the microphone located 4 ft above the water line and 2 ft behind the transom of the boat, in accordance with SAE J2005 Draft, "Stationary Sound Level Measurement Procedure for Pleasure Motorboats," dated 10/16/89.

1.2 Passby Measurement

These measurements were made with the boat operating at full throttle, passing by the microphone at a distance of 50 ft, in accordance with NJAC 7:6-6.3.

2. RESULTS

Nine boats were measured. Their descriptions and the data obtained are presented in Table 1 on the following page.

TABLE 1 - DATA RESULTS

Type of Boat	Static Level dBA	Passby Level dBA
Classic Inboard 1930 Chris Craft, Wooden Boat, Inboard Motor, Exhaust Outlet above the Water Line	86	72
Single Outboard Engine Police Patrol Boat with Single 175 Johnson Outboard Motor	74	81
Twin Outboard Engine Police 23 ft Foam Weather Patrol Boat with Two 155 Evinrude Outboard Motors	85	82
Personal Watercraft No. 1 Kawasaki Jet Ski 750 STS	71	81
Personal Watercraft No. 2 Kawasaki Jet Ski 900, High Performance 3 Cylinder 100 hp	70	76
Inboard/Outboard with Exhaust Below Water Line Advantage 21 ft, 350 ft Chevrolet Engine with Outboard Drive	69	85
Inboard/Outboard with Exhaust Above Water Line Wellcraft Nova, 352 ft Engine with Outboard Drive	90	90
Racing Boat No. 1 Jetway Speed Skiff Runabout, 233 Chevrolet Engine, Exhaust Below Water Line	95	105 at 77 mph
Racing Boat No. 2 Five Liter Hydroplane, 303 Chevrolet Engine	99	109 at 107 mph

3. DISCUSSION

The data indicate that the boats which are acceptable under the 86 dBA passby criteria also comply with the 90 dBA static criteria, with the sole exception of the "Inboard/Outboard with Exhaust Above the Water Line." Here we are in a "gray area," with the exact wording of the 90 dBA criterion posing a question. If the static criterion reads "...shall not exceed 90 dBA," or words to that effect, then technically a level of exactly 90 dBA would pass. On the other hand, if the wording were "...levels of 90 dBA or greater are unacceptable," then 90 dBA would be a violation.

There is no doubt that the racing boats which fail the passby criteria also fail the static criteria.

Based on the data, it is our opinion that the static criteria will generally single out those boats which would fail the passby criteria. We might want to gather further data on more of the "Inboard/Outboard with Exhaust Above the Water Line" boats, if they have been perceived in the past as potential noise problems.

If you have any questions concerning the material presented, please contact us at your convenience.

Submitted by,

Noise Unlimited, Inc.

Thomas S. Bragg

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Administrative Engineer