CCSO Firing Range Noise Testing

Executive Summary

Following a public request to address noise concerns by residents of the Waterford Estates, Charlotte County alongside the Charlotte County Sheriff Office conducted a series of tests using Reed R8050 sound measuring devices during live fire exercises at the Firing Range located at 24590 Airport Rd Punta Gorda FL.

Utilizing industry standards as well as federal and state guidelines it was determined that the OSHA 1910 standard was the most restrictive to benchmark the results against. The chart below is the regulation for noise levels that are acceptable in the workplace. Noting that these are measured over a period of 8 hour of continuous noise hazards. The US Environmental Protection Agency identifies a risk of 70 decibels if at a continuous rate over 8 or 24 hours.

Impact noise is not measured in any of the standards or regulations as a risk.

Against the standards and regulations, the test results are within the acceptable limits for health and safety.

A summary of the property line locations (1,2,3) had an average reading of 77db well under the limit to health and safety by the chart below for the short duration of the event. These readings do not calculate the travel rate of decent beyond the points of measure.

1910.95(b)(1)

When employees are subjected to sound exceeding those listed in Table G-16, feasible administrative or engineering controls shall be utilized. If such controls fail to reduce sound levels within the levels of Table G-16, personal protective equipment shall be provided and used to reduce sound levels within the levels of the table.

1910.95(b)(2)

If the variations in noise level involve maxima at intervals of 1 second or less, it is to be considered continuous.

Table G-16 - Permissible Noise Exposures[1]

Duration per day, hours	Sound level dBA slow response
8	90
6	92
4	95
3	97
2	100
1½	102
1	105
½	110
¼ or less	115

[1] When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each. If the sum of the following fractions: $C_1/T_1 + C_2/T_2 C_n/T_n$ exceeds unity, then, the mixed exposure should be considered to exceed the limit value. *Cn* indicates the total time of exposure at a specified noise level, and *Tn* indicates the total time of exposure permitted at that level.

Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level.

On 4/8/2024 and 4/11/2024 testing occurred at the Charlotte County Sherriff's Firing Range to measure the sound being emitted during training sessions. These tests include readings taken from multiple locations as well as multiple calibers of ammunition.

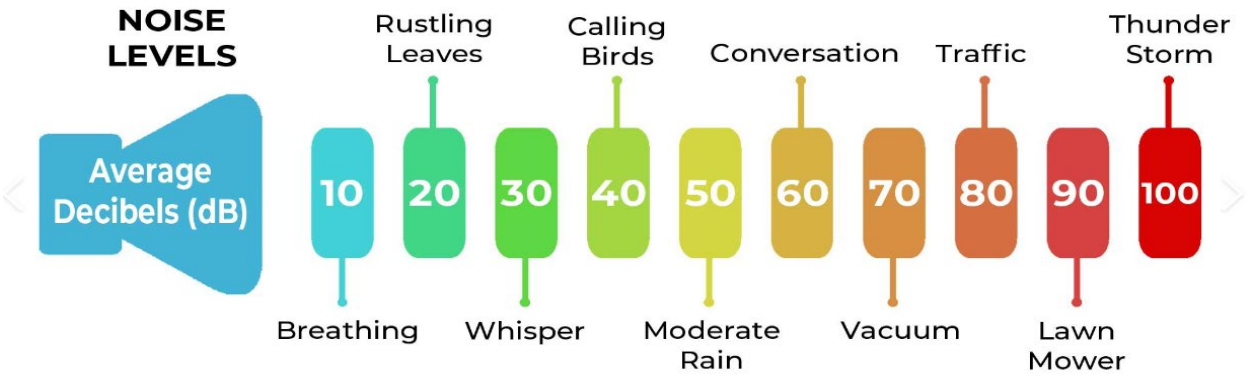
Attachment A Summary:

On 4/8/2024 the sheriff's department conducted handgun training using a standard hollow-point round. During this training sound level readings were taken simultaneously from map locations 1 2 and 3 (the area boarding the subdivision in the attached map). Readings were taken in both A and C weightings using identical Reed's instruments R8050 DB meters. The readings were taken during rapid sustained fire of five shots or more with in a 4 second window. The data displayed below are maximum burst readings and not sustained average readings. This is the highest peak read during the barrage. Please note sustained average readings would be lower. Readings were also taken at the office (location 4 on the map) and inside the range (Location 5 on the map). This was done to show the drop off in sound level over distance. At 2:25 pm a helicopter was recorded flying overhead to provide a point of reference to these readings this is noted in yellow on the chart. The highest readings were taken from directly behind the range and drop off fast. Most of these readings are no louder than heavy traffic.

Attachment B Summary:

On 4/11/2024 the sheriff's department conducted rifle training. training with rifles was conducted at the 50-, 40-, and 30-yard line. this is much closer to the entrance of the range and may have contributed to the higher readings. Sound level readings were taken simultaneously from map locations 1 2 and 3 (the area boarding the subdivision). Readings were taken in both A and C weightings using identical Reed's instruments R8050 DB meters. The readings were taken during rapid sustained fire of five shots or more with in a 4 second window. The data displayed below are maximum burst readings and not sustained average readings. This is the highest peak read during the barrage. Please note sustained average readings would be lower. Readings were also taken at the office (location 4 on the map) and inside the range at the line of fire. (Location 5 on the map). This was done to show the drop off in sound level over distance.

The chart below represents a scale for industry standard use for noise benchmarking.



Attachment A

Date	4/8/2024							
	Location 1			Location 2			Location 3	
Time	A weighted	C weighted		A weighted	C weighted		A weighted	C weighted
2:10	72.4	75.9		73.1	77.1		83	83.5
2:11	80.9	76.5		74.3	76.3		82.7	83.9
2:12	74.1	75		74.8	78		81	85.3
2:13	73.5	75.3		77	77.3		84	84.8
2:14	74	75.3		75.2	79		78.6	85.4
2:16	73.9	74.3		72.1	76.2		80.4	88.2
2:18	72.8	76.1		73.4	75		79.2	86
2:19	74.3	75.4		73.1	75.3		81.5	83.6
2:21	73.6	75.8		72	76.6		83.4	83.3
2:22	75.1	72.7		75.1	77		82.1	82.4
2:23	71.8	75.3		70.8	76.3		79.8	84.1
2:25	77	Helicopter		78	Helicopter		85.4	Helicopter
	Location 4						Location 5	
Time	A weighted	C weighted			Time		A weighted	C weighted
2:31		97.3			2:43		106.3	106
2:32		98.1			2:45		105.1	104.6
2:33		95.5			2:45		102.8	105.4
2:34		90.1			2:46		108	103.2
2:35		92.6			2:50		104.8	105.8

Attachment B

Date	4/11/2024							
		Location 1			Location 2			Location 3	
Time		A weighted	C weighted		A weighted	C weighted		A weighted	C weighted
8:22		85.8	89.7		80.6	86.8		78	86
8:23		84.4	89.2		77.5	84.2		77	83.5
8:28		84.4	87.3		76.7	84.8		77.4	86.4
8:33		87.9	81.9		78.4	85.9		79.1	86.1
8:34		90.4	88.7		80.1	86.6		78	85.2
8:38		86.1	87		78.34	86.5		78.4	85.8
8:49		85.2	86.2		79.4	85.6		79	84.7
8:50									
		Location 4						Location 5	
Time		A weighted	C weighted			Time		A weighted	C weighted
8:49			98			9:00		107	113
8:50			95			9:02		111	106
8:52			99			9:03		110	111
8:57			100			9:04		108	114.4
						9:06		111	113.2