Noise Navigator™ Sound Level Database
with Over 1700 Measurement Values

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Welcome to the Noise Navigator spreadsheet of sound levels for more than 1700 occupational, recreational, and military noise sources. The data are compiled from references in the literature and from our own measurements. For each source the reference is listed, and as available additional notes are provided. When the primary reference cites sources for its data, those too are listed.

The tabled values are primarily A-weighted sound levels, as opposed to time-weighted average levels or L_{eq}s. To determine exposures the user will have to factor in the total exposure time as well as the actual sound level that is present at the ear. For impulsive sounds, such as gunfire, the values are generally peak sound pressure levels (SPLs) and are so designated. A few of the sound levels are specified as "linear" indicating that they are unweighted; such levels will almost always be equal to or greater than A-weighted values, depending upon the amount of low-frequency energy that is present in the signal.

The data are separated into groups by categories as shown on the Worksheet tabs. Additionally, for certain of the categories we have provided one or more additional worksheets with the data grouped by type, for example "lawnmowers," showing the average and the range of values for that source. The labels on the tabs are a brief indicator; see the top yellow row of each spreadsheet for an complete description of the source found on that sheet.

The values are for representative sources at typical distances. When available, the distance at which the measurement was recorded is listed in the appropriate column. The actual sound levels for a situation are strongly influenced by the particular characteristics of the source in question, as well as the sound environment (reverberance) and the distance the user is from the source.

Another critical factor, often unspecified in the references is the meter response of the instrument - slow, fast, peak, or integrated values such as Leq or other. As an example of how such parameters can influence the results note that for typical popular music the difference between dBA slow and peak values is around 9 - 14 dB, and for broadband pink noise about 12 dB.

The values in this spreadsheet can be sorted according to noise source, category of noise, and sound pressure level, or by any of the other columns, using the sort function in Excel.

We are interested in refining and expanding this resource. If the reader has suggestions for improvement, or documented sound levels that they wish to share, or finds any items requiring explanation or correction, please contact Elliott Berger at eberger@compuserve.com.

Sound Levels

Source	dBA Average	dBA Low Range	dBA High Range	Weighting	No. of Studies
Chopping wood	61	50	71	A	3
Dishwasher	68	60	75	A	7
Motorcycle (rider with helmet)	98	63	111	A	24
Air conditioner	66	55	80	A	8
Blender	82	64	91	A	8
Alarm clock	78	60	80	A	4
Clother dryer	63	45	80	A	7
Hair dryer	75	50	95	A	7
Garbage disposal	78	67	92	A	10
Refrigerator	58	50	68	A	7
Vacuum cleaner	75	65	89	A	17
Clothes washer	70	45	80	A	9
Lawn mower, gas-powered	89	74	100	A	16
Lawn mower, electric	81	68	103	A	5
Leaf blower	84	76	105	A	3
Snow blower	87	84	92	A	3
MRI machine	99	92	108	A	3
Birds	46	30	62	A	9
Grand Canyon	19	10	35	A	4
Rustling leaves	27	20	40	A	3
Speech	62	55	70	A	22
Whisper	29	15	40	A	15
Chainsaw	104	93	2118	A	15
Drill, handheld	98	92	114	A	8
Planer	103	101	106	A	3
Router	97	78	108	A	6
Radial arm saw	103	98	110		4
Circular saw	106	100	113	A	3
Belt sander	97	93	102	A	3
Cut-off saw	107	105	112	A	3
Restaurant	72	65	90	A	8
Heavy traffic	82	70	100	A	6
Light traffic	48	45	50	A	5
Model airplanes	103	84	117	A	5
Snowmobile	98	73	120	A	10
Baby rattle	81	73	89	A	4
Squeeze toy	90	81	97		4
Automobile (inside)	75	60	90	A	7
Diesel truck	89	84	114	A	5
Subway	93	90	114	A	7
Train	85	75	102	A	10
Air raid siren	135	130	140	A	3
Electric Mixer	71	60	91	A	10
Haleakala volcano, in crater, no wind	5	na	na	A	1
Rice Krispies, fresh in cereal bowl just after milk is poured	30	na	na	A	1

Attenuation Calculations for Stationary Noise Sources

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

STEP 1: Identify the noise source and enter the reference noise level (dBA and distance).

STEP 2: Select the ground type (hard or soft), and enter the source and receiver heights.

STEP 3: Select the distance to the receiver.

Noise Source/ID	Reference Noise Level			Attenuation Characteristics				Attenuated Noise Level at Receptor		
	noise level (dBA)	@	distance (ft)	Ground Type (soft/hard)	Source Height (ft)	Receiver Height (ft)	Ground Factor	noise level (dBA)	@	distance (ft)
wood chipper	99.0	@	3.28	hard	6	5	0.00	75.3	@	50
							0.66			
							0.66			
							0.66			
							0.66			
							0.66			
							0.66			
							0.66			
							0.66			
							0.66			
							0.66			
							0.66			
							0.66			
							0.66			

Notes:

Estimates of attenuated noise levels do not account for reductions from intervening barriers, including walls, trees, vegetation, or structures of any type.

Computation of the attenuated noise level is based on the equation presented on pg. 12-3 and 12-4 of FTA 2006.

Computation of the ground factor is based on the equation presentd in Figure 6-23 on pg. 6-23 of FTA 2006, where the distance of the reference noise leve can be adjusted and the usage factor is not applied (i.e., the usage factor is equal to 1).

Sources:

Federal Transit Association (FTA). 2006 (May). Transit Noise and Vibration Impact Assessment. FTA-VA-90-1003-06. Washington, D.C. Available: <http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf>. Accessed: September 24, 2010.