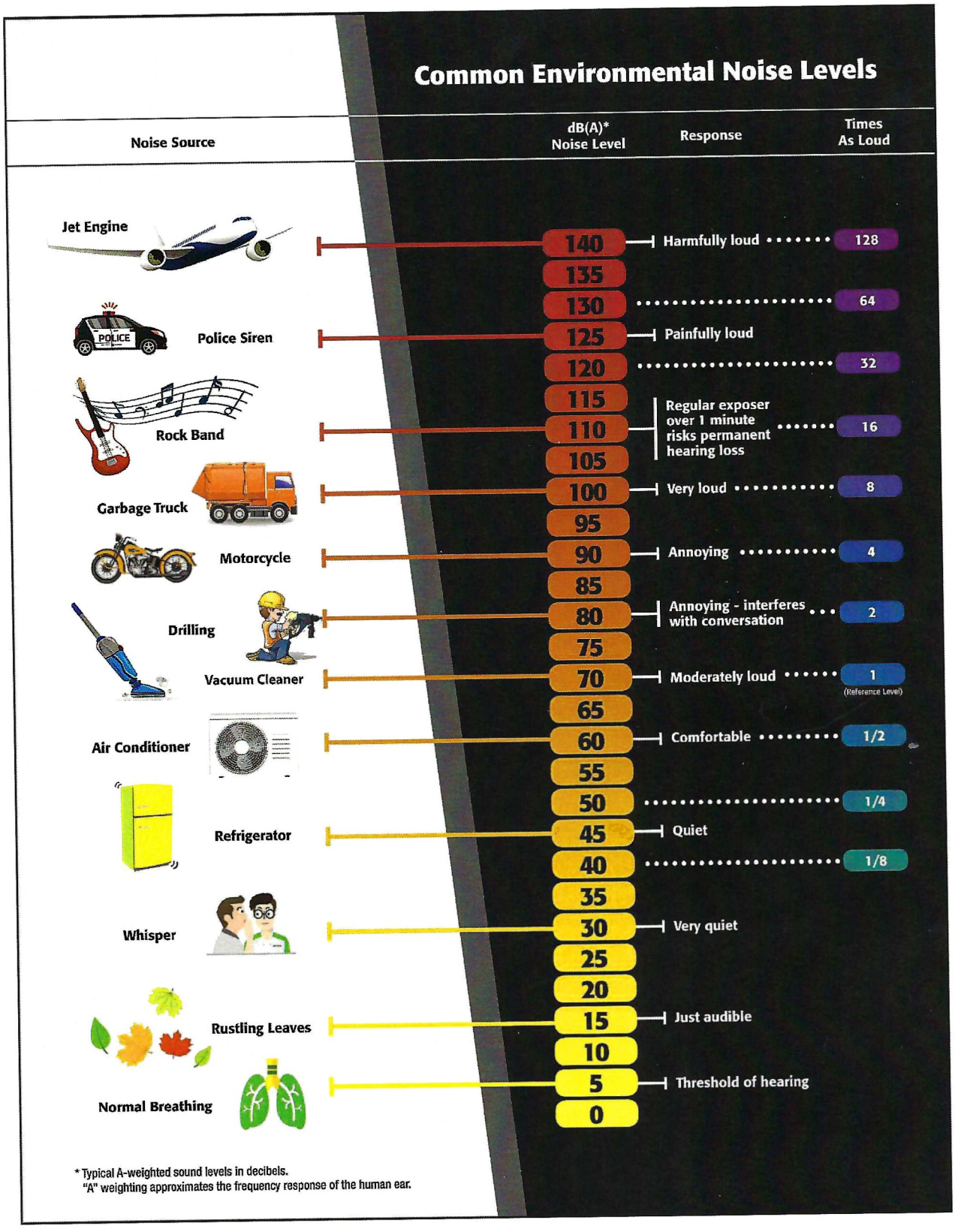
Common Environmental Noise Levels
Noise Source
dB(A)* Noise Level
Response
Times As Loud
Jet Engine
140
Harmfully loud
128
135
130
64
POLICE
Police Siren
125
Painfully loud
120
32
115
Rock Band
110
Regular exposer over 1 minute risks permanent hearing loss
16
105
Garbage Truck
100
Very loud
8
95
Motorcycle
90
Annoying
4
85
Drilling
80
Annoying - interferes with conversation
2
75
Vacuum Cleaner
70
Moderately loud
1
(Reference Level)
65
Air Conditioner
60
Comfortable
1/2
55
50
1/4
Refrigerator
45
Quiet
40
1/8
35
Whisper
30
Very quiet
25
20
Rustling Leaves
15
Just audible
10
Normal Breathing
5
Threshold of hearing
0
* Typical A-weighted sound levels in decibels.
"A" weighting approximates the frequency response of the human ear.

Noise Fundamentals

Sound is energy transferred through the air that our ears detect as small changes in air pressure. The more energy put into making a sound, the louder it will be. Try whispering. Then yell. You can feel how much more energy goes into yelling.

Noise is sound that is **unwanted**. Some sounds, like a distant train whistle, can be a pleasant sound for some, while being considered noise by others. Other sounds, like a neighbor's barking dog in the middle of the night, are more universally found to be annoying. Even sounds that are pleasant at one volume can become noise to us as they get louder. Noise, then, has both an objective, physical component; as well as a subjective component that takes account of a person's individual perception, or reaction, to a sound.

The **decibel (db)** is the unit used to measure the intensity of a sound. The human ear hears sound pressures over a wide range. Decibels, which are measured on a *logarithmic* scale, correspond to the way our ears interpret sound pressures. The human ear also responds to different pitches or frequencies of sound differently. We are less able to hear low frequencies like the rumble of thunder but hear high frequencies like the cry of a baby more strongly.

The **equivalent sound level (LEQ)** measures the average acoustic energy over a period of time to take account of the cumulative effect of multiple noise events. This could, for example, provide a measure of the aggregate sound at a location throughout the day. LEQ is defined as the level of continuous sound over a given time period that would deliver the same amount of energy as the actual, varying sound exposure and is the standard used by FHWA for all highway noise studies.

The **day-night average sound level (DNL)** noise metric is used to reflect a person's cumulative exposure to sound over a 24-hour period, expressed as the noise level for the average day of the year on the basis of annual aircraft operations. The DNL noise metric provides a mechanism to describe the effects of environmental noise in a simple and uniform way. DNL is the standard noise metric used for all FAA studies of aviation noise exposure in airport communities.

Noise fundamentals provided by the Federal Aviation Administration:
https://www.faa.gov/regulations_policies/policy_guidance/noise/basics