

**APPENDIX E**  
**NOISE TECHNICAL APPENDIX**

**Appendix E  
Attachment B**

**SOUND LEVELS OF TYPICAL NOISE SOURCES AND NOISE ENVIRONMENTS  
(A-Weighted Sound Levels)**

Noise Source (at a Given Distance)	A-Weighted Sound Level in Decibels	Noise Environment	Human Judgement of Noise Loudness (Relative to a Reference Loudness of 70 Decibels*)
	140		
Military Jet Take-off with After-burner (50 ft) Civil Defense Siren (100 ft)	130	Carrier Flight Deck	
Commercial Jet Take-off (200 ft)	120		<u>Threshold of Pain</u> *32 times as loud
Pile Driver (50 ft)	110	Rock Music Concert	*16 times as loud
Ambulance Siren (100 ft) Newspaper Press (5 ft) Power Lawn Mower (3 ft)	100		<u>Very Loud</u> *8 times as loud
Motorcycle (25 ft) Propeller Plane Flyover (1000 ft) Diesel Truck, 40 mph (50 ft) Garbage Disposal (3 ft)	90	Boiler Room Printing Press Plant	*4 times as loud
Passenger Car, 65 mph (25 ft) Living Room Stereo (15 ft) Vacuum Cleaner (3 ft) Electronic Typewriter (10 ft)	80	High Urban Ambient Sound	*2 times as loud
	70		<u>Moderately Loud</u> *70 dB (Reference Loudness)
Normal Conversation (5 ft) Air Conditioning Unit (100 ft)	60	Data Processing Center Department Store	*1/2 as loud
Light Traffic (100 ft)	50	Private Business Office	*1/4 as loud
Bird Calls (distant)	40	Lower Limit of Urban Ambient Sound	<u>Quiet</u> *1/8 as loud
Soft Whisper (5 ft)	30	Quiet Bedroom	
	20	Recording Studio	<u>Just Audible</u>
	10		<u>Threshold of Hearing</u>
	0		

**Appendix E  
Attachment A  
DEFINITIONS**

Term	Definition
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
A-Weighted Sound Level, dB(A)	The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighting filter network. The A-weighting filter deemphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted.
Community Noise Equivalent Level, CNEL	CNEL is the average sound level during a 24-hour day and it is calculated by adding 5 decibels (dB) to sound levels in the evening (7 p.m. to 10 p.m.) and adding 10 dB to sound levels in the night (10 p.m. to 7 a.m.).
Ldn	Similar to CNEL, however, there is no penalty for sound levels in the evening (7:00 p.m. to 10:00 p.m.). There is approximately a 1 decibel difference between Ldn and CNEL.
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
Equivalent Noise Level, Leq	The energy mean "A" weighted sound level during the measured time interval
L10	The L10 is the sound level exceeded 10 percent of the time and corresponds to the peaks of noise.
L50	L50 is the sound level exceeded 50 percent of the time and corresponds to the average noise.

Appendix E (Continued)

DEFINITIONS

Term	Definition
L <sub>90</sub>	L <sub>90</sub> is the sound level exceeded 90 percent of the time and corresponds to the residual noise.
L <sub>min</sub>	The lowest A-weighted sound level measured during a designated time.
L <sub>max</sub>	The greatest A-weighted sound level measured during a designated time.