Recording and Voice Processing 2

Working in the Studio

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Color Section
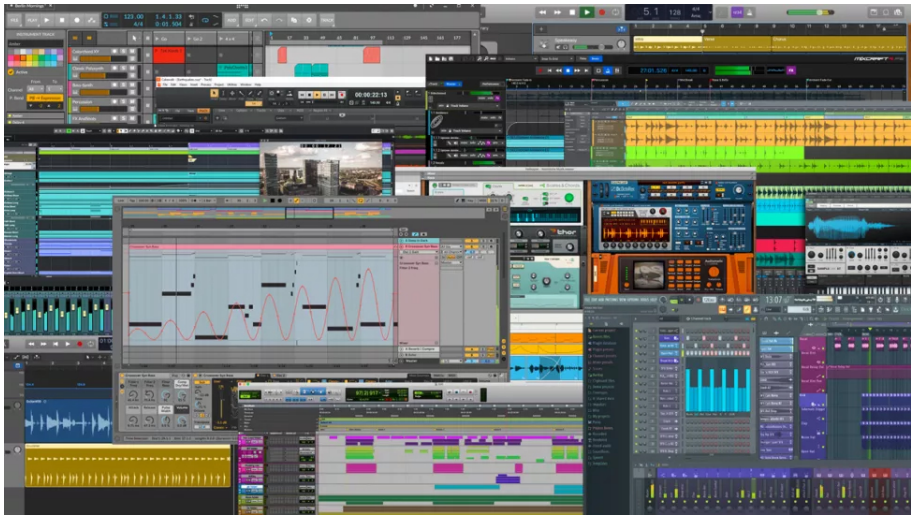
Figure I.1. *Some digital audio workstations (DAWs) – source: www.musicradar.com*
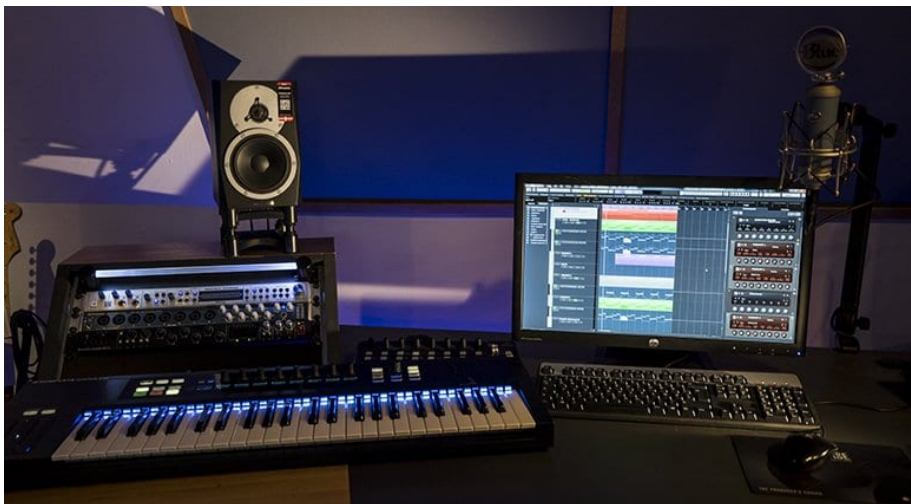

Figure I.3. *An example of a home studio – source: thomann.de*

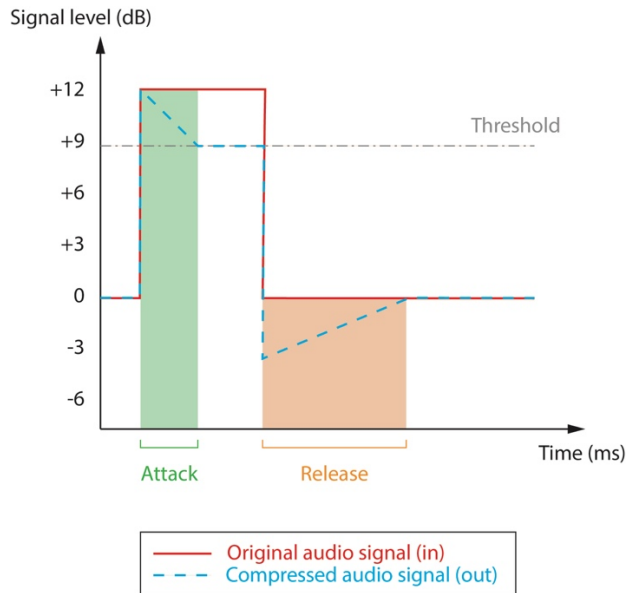**Figure 1.1.** *The Urei 1176 LN studio compressor*

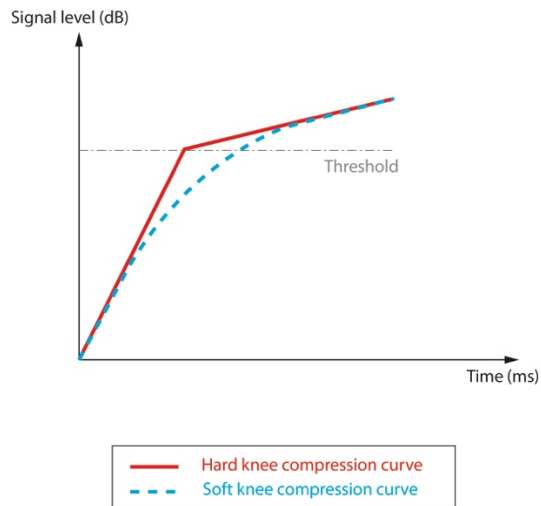**Figure 1.2.** *Attack and release during compression*

Figure 1.3. *The shape of the compression curve as a function of the knee setting*
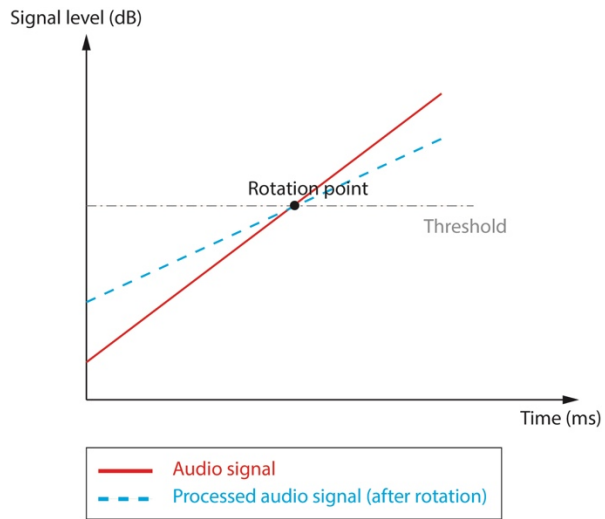
Figure 1.4. *The influence of the rotation point*

Figure 1.5. *A DBX 1231 2 x 31 band graphic equalizer*

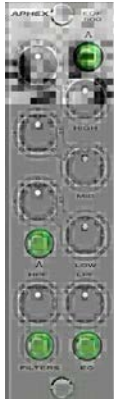**Figure 1.6.** *A Tube-Tech PE1C parametric equalizer*

Figure 1.7. *The Aphex EQF 500 semi-parametric equalizer*

Figure 1.8. *The first EMT 250 digital reverberator, dating from 1976*

Figure 1.9. *The first convolution reverb, Sony DRE-S777*

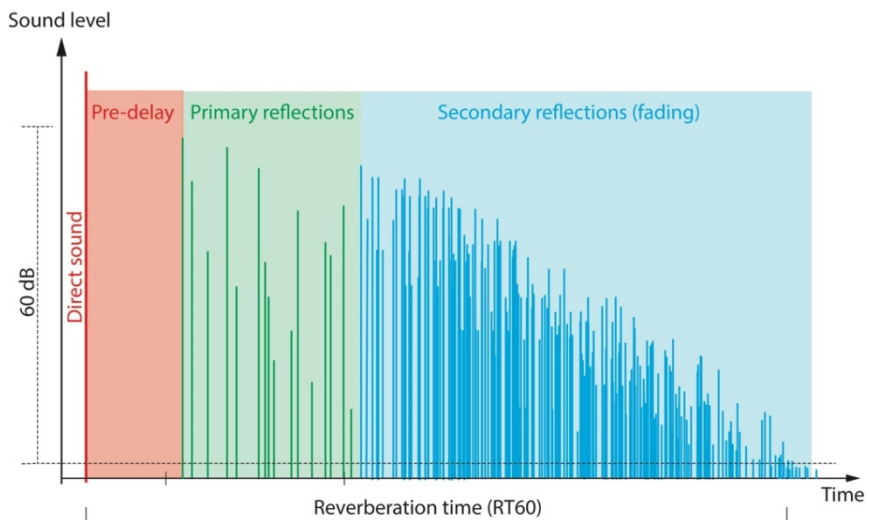**Figure 1.10.** *A magnetic tape reverb, Roland Space Echo RE-201*

Figure 1.11. *The main parameters of the reverberation*

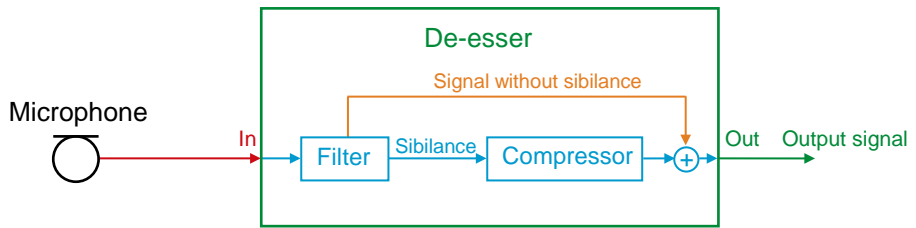**Figure 1.12.** *The SPL 9629 studio de-esser*

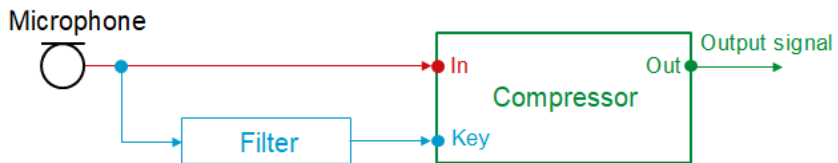**Figure 1.13.** *Schematic diagram of a de-esser*

Figure 1.14. *Equivalent of the de-esser with a filter and a compressor. Very often, the filter is associated with an amplifier which increases the presence of sibilance for better compression*
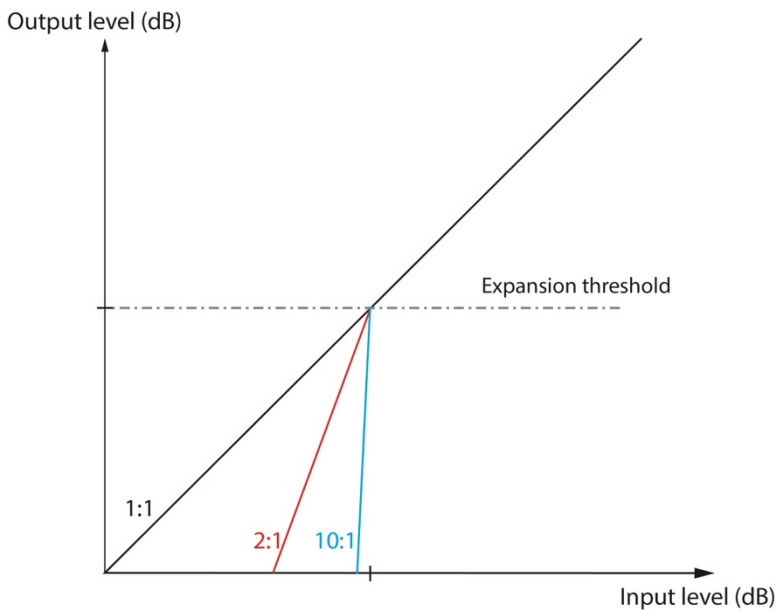

Figure 1.15. *The principle of the expander*

Figure 1.16. *The DBX 1074 gate expander*

Figure 1.17. *The aural exciter model 602 from Aphex*
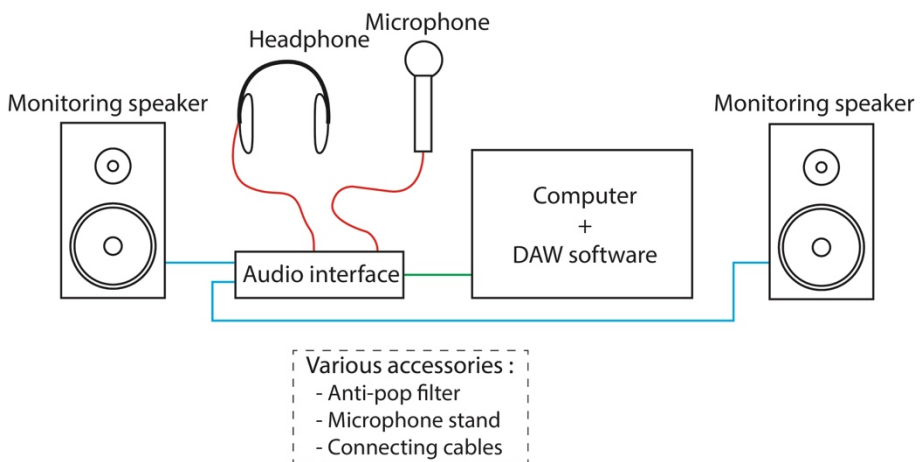

Figure 2.1. *Hardware–software package for a basic configuration.*
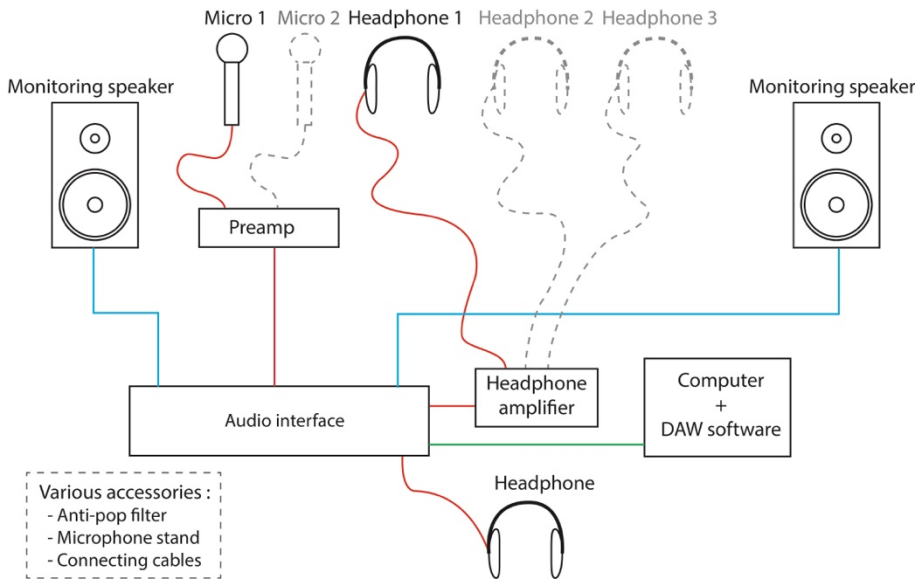*DAW = Digital Audio Workstation*

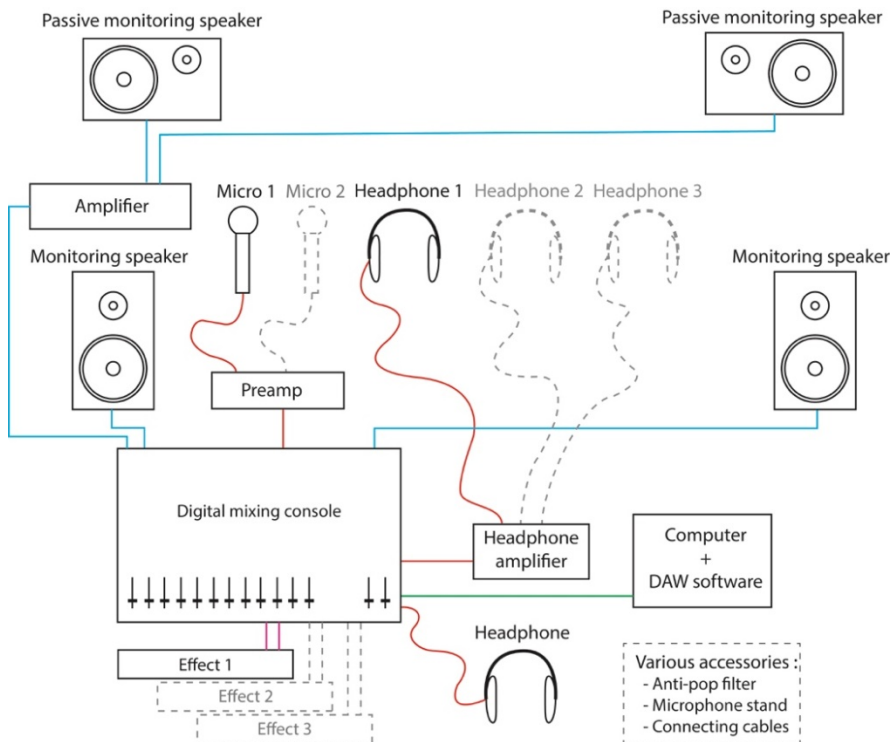**Figure 2.3.** *A classic configuration combining audio interface, microphone preamp and headphone amp*

Figure 2.4. *A typical setup with a digital mixer, an effect insert, a mic preamp and a headphone amp*
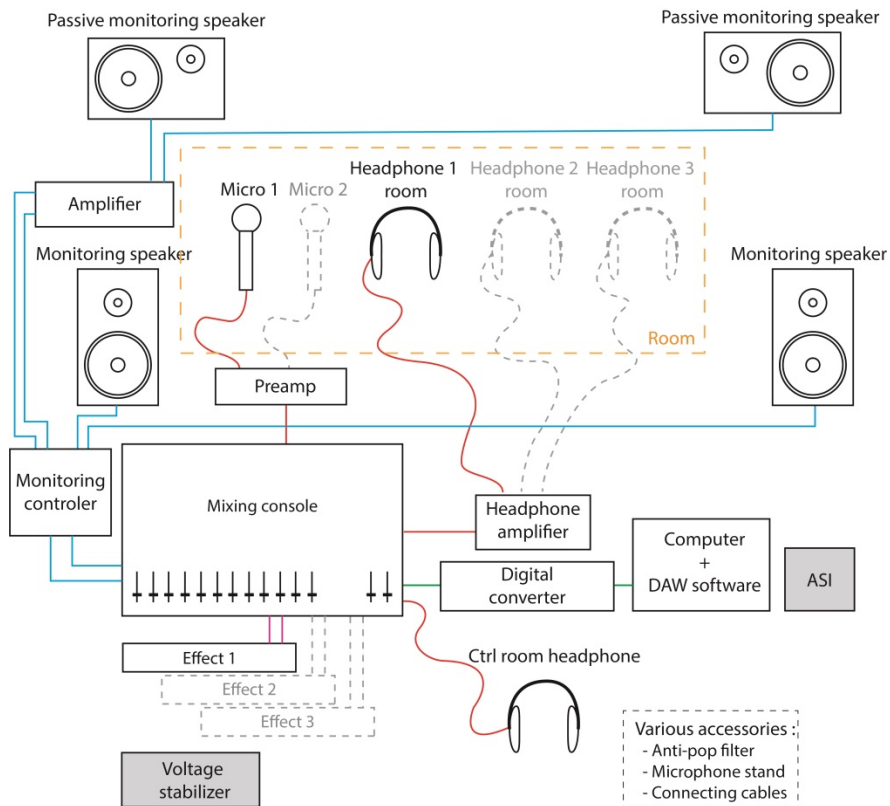
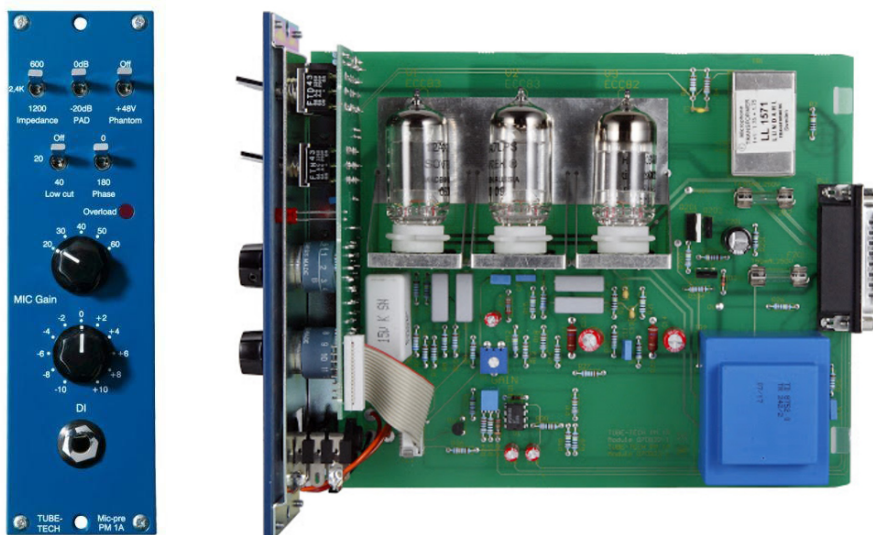**Figure 2.5.** *Configuration of a semi-professional studio*

Figure 2.6. *A tube preamp – Tube-Tech PM1A. You can see the three tubes on their supports*
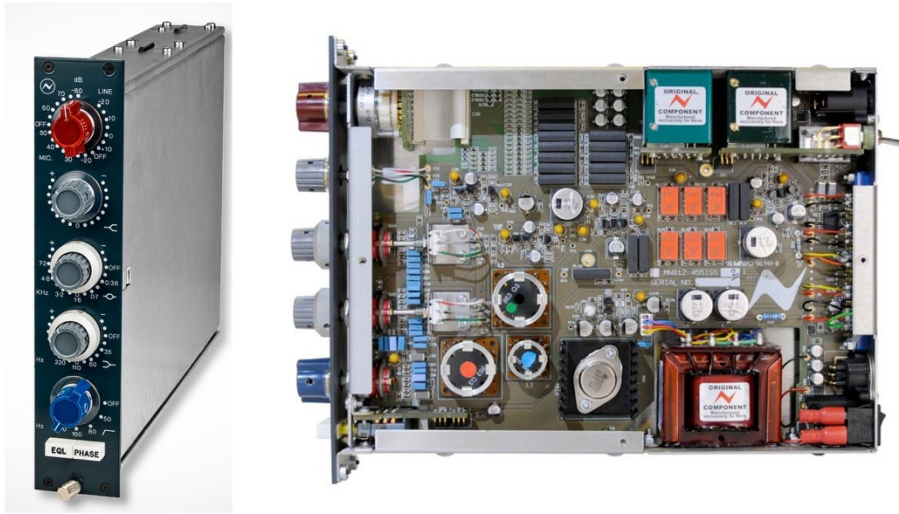
Figure 2.8. *A transistor preamp – AMS Neve 1073N*

Figure 2.9. *A hybrid preamp – Universal Audio 710 Twin-Finity*

Figure 2.10. *SPL's Fronliner hybrid preamp (preamp, compressor, limiter, equalizer)*
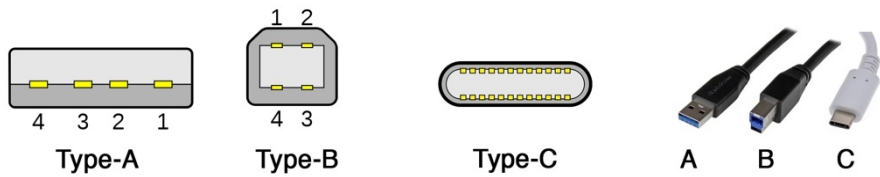
Figure 2.12. *The different types of USB connectors found on digital audio interfaces*
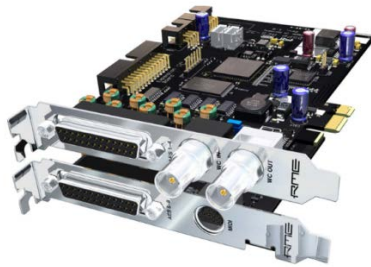

Figure 2.15. *PCIe Audio Interface, RME HDSPe AES*

Figure 2.20. *A two-way crossover (Monacor DN-20)*

Figure 2.41. *SPL's Crimson 3-active controller*

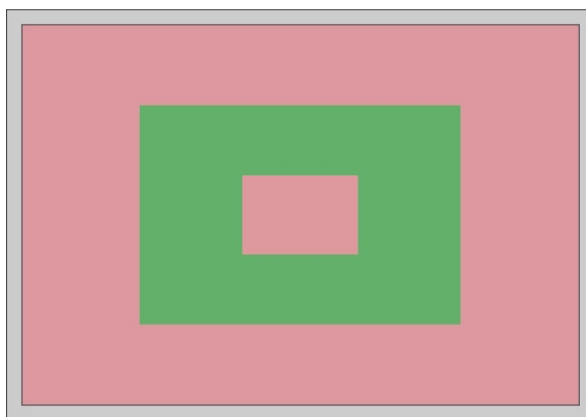**Figure 2.42.** *Dangerous D-box controller (front and back)*

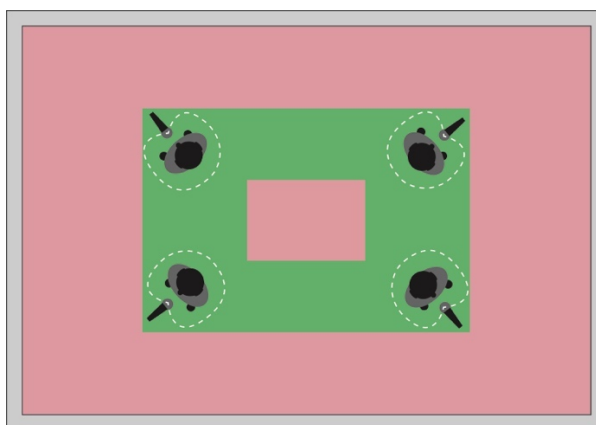**Figure 3.1.** *Green area for correct microphone placement*

Figure 3.2. *Placements to limit reflections with a cardioid microphone*
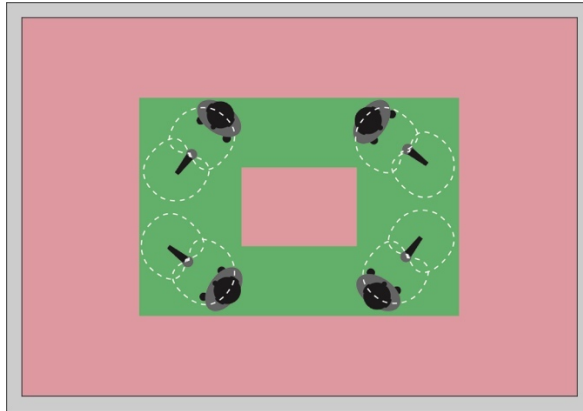
Figure 3.3. *Usable locations with a bidirectional microphone*

Figure 3.4. *Two removable acoustic panels (gobos) behind a microphone*
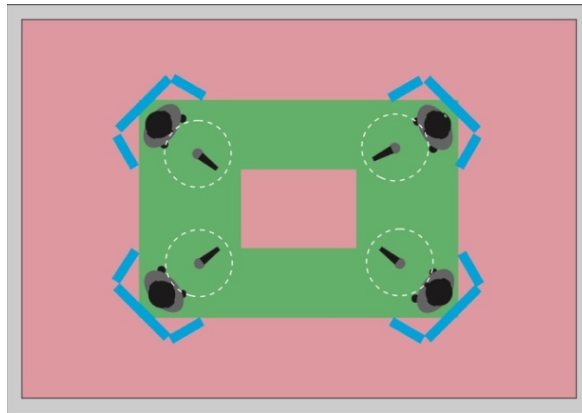
Figure 3.5. *Correct placements for acoustic panels (blue) with an omnidirectional microphone*
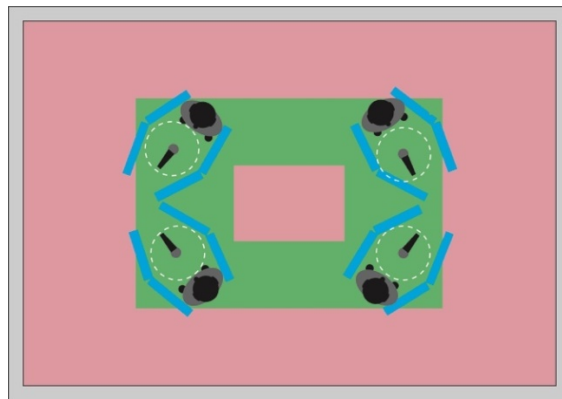

Figure 3.6. *Second solution for correct placement of acoustic panels (blue) with an omnidirectional microphone*
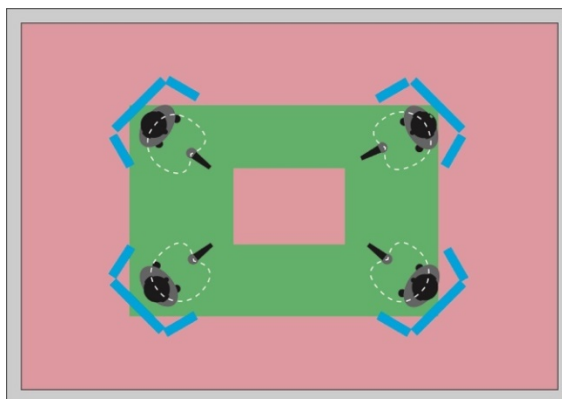

Figure 3.7. *Solution for correct placement of acoustic panels (blue) with a cardioid microphone*
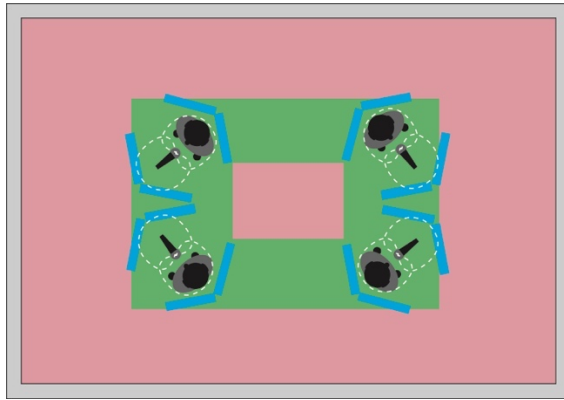
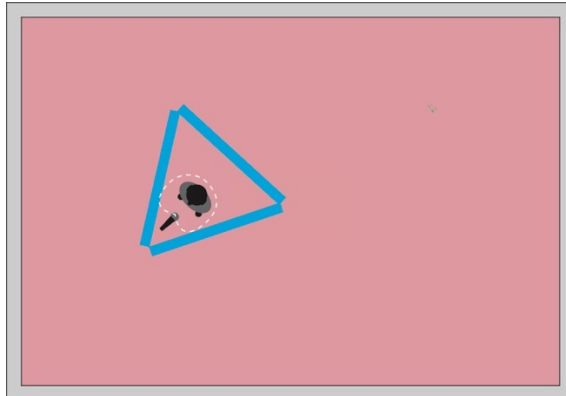**Figure 3.8.** *Solution for correct placement of acoustic panels (blue) with a bidirectional microphone*

Figure 3.9. *A simulation of a booth with three acoustic panels*

Figure 3.12. *Acoustic absorbent cotton in rolls (Metisse) and acoustic rock wool panels (Rockwool)*

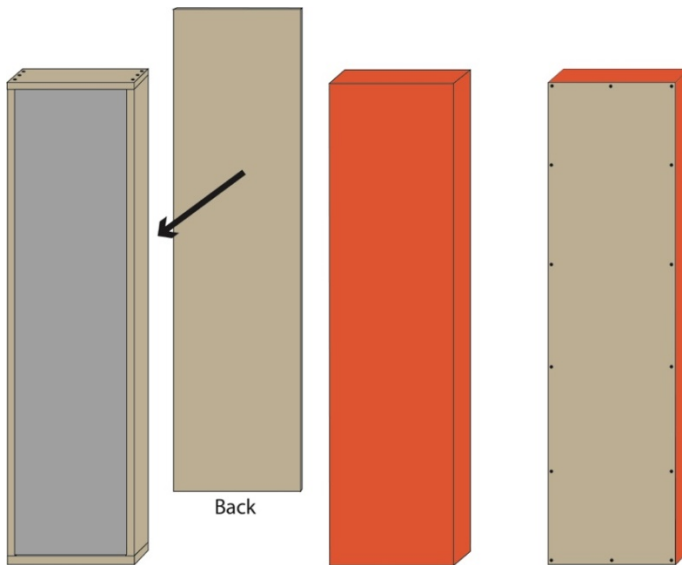**Figure 3.14.** *Back of frame with stapled fabric*

Back

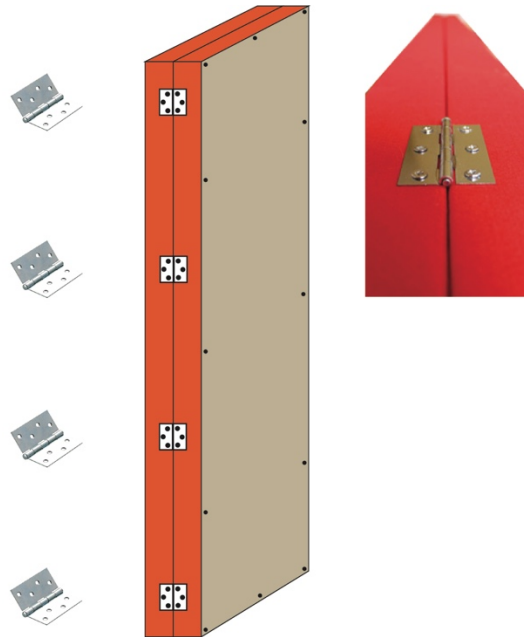**Figure 3.15.** *Placing the back*
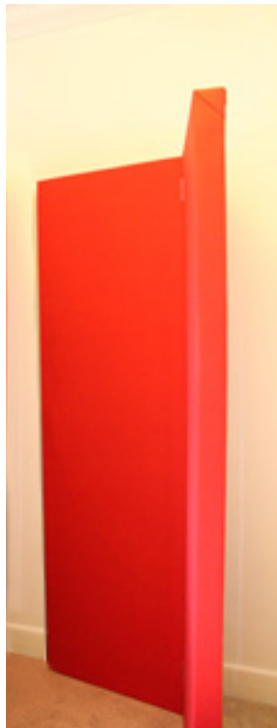
Figure 3.16. *Assembly of the two panels with hinges*

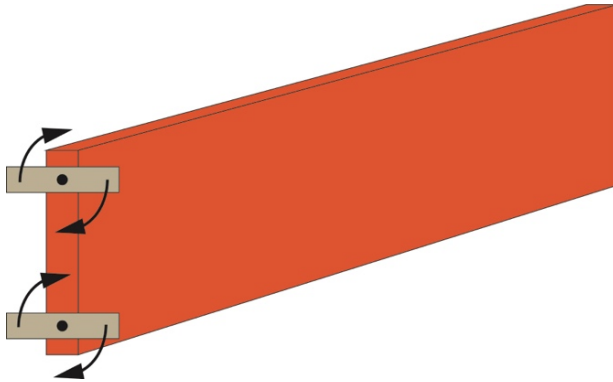**Figure 3.17.** *A standing panel*

Figure 3.18. *Swivel feet attached to the base of a frame*

Figure 3.25. *Desktop voice recording*

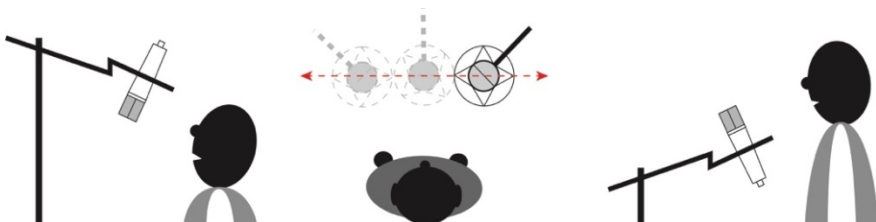**Figure 3.26.** *From left to right, stand microphone, boom microphone up, boom microphone down*

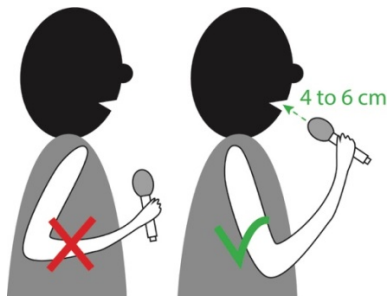**Figure 3.29.** *Lateral shift of the microphone to the right or left*

Figure 3.31. *Poor and good handling of a vocal microphone*
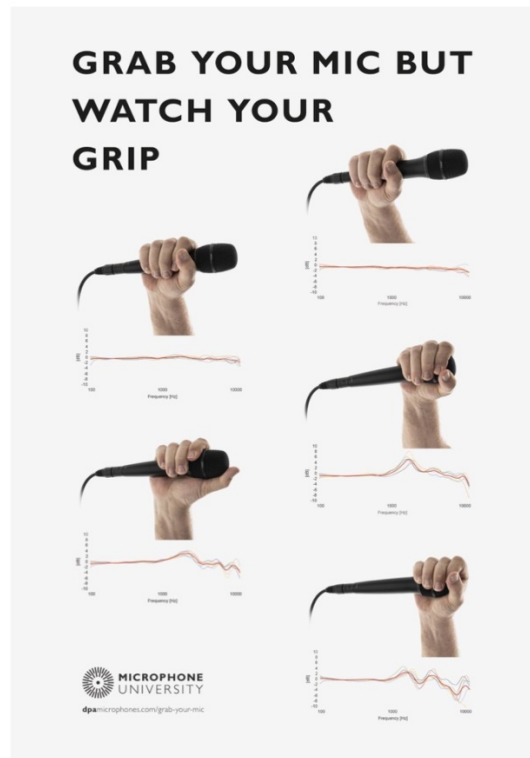

Figure 3.32. *The influence of hand position on the frequency response curve of a microphone (source: dpamicrophones.com)*
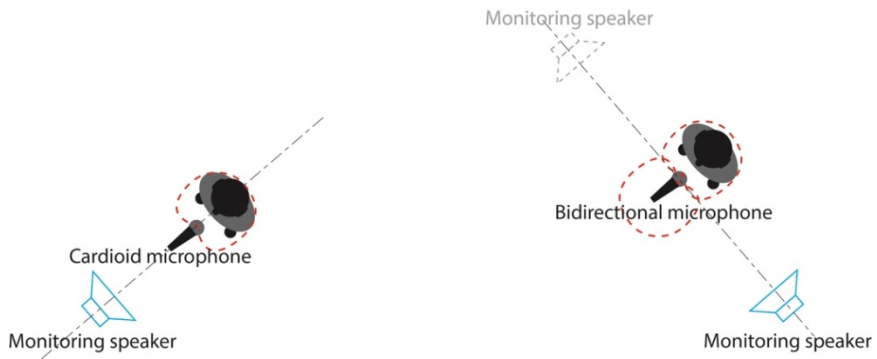
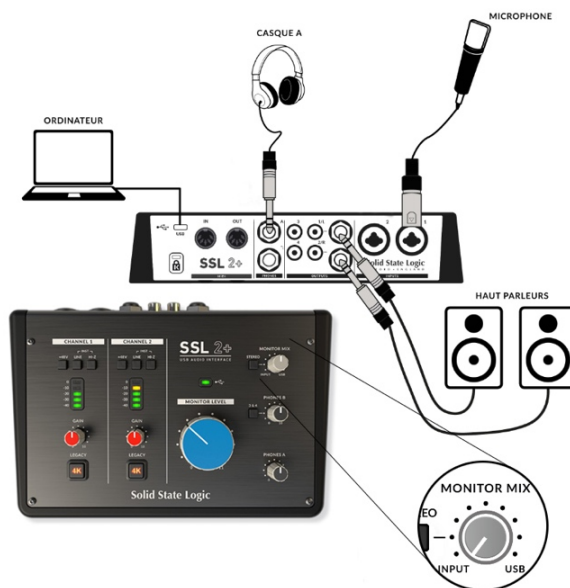**Figure 3.33.** *Position of the monitor speaker according to the type of microphone*

Figure 3.35. *Voice recording configuration with a Solid State Logic SSL 2+ interface (source: Solid State Logic)*
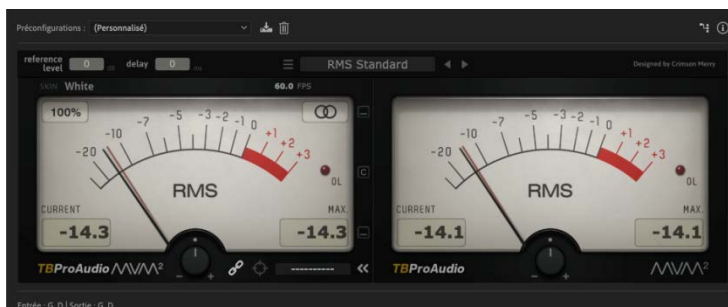

Figure 3.38. *The TPB Pro Audio mvMeter 2 measurement plugin*

Figure 3.39. *An HPF filter with the Avid Protools seven-band equalization plugin*
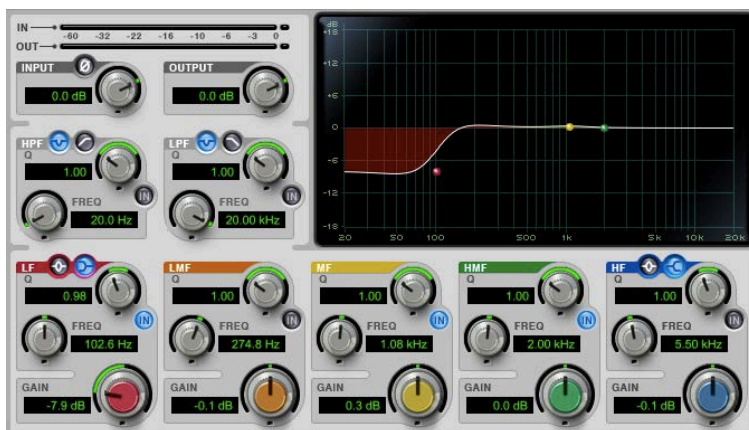

Figure 3.40. *A low shelf filter with the Avid Protools seven-band equalization plugin*
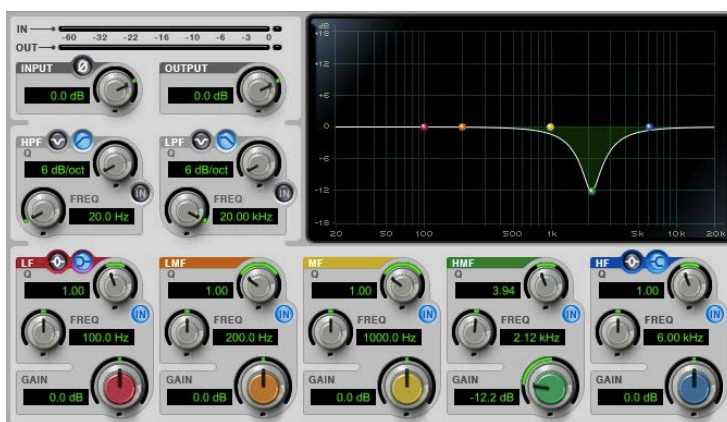

Figure 3.41. *A bell filter with the Avid Protools seven-band equalizer plugin*

Figure 3.42. *The Renaissance DeEsser plugin from Waves and the De-Esser plugin from Avid Protools*

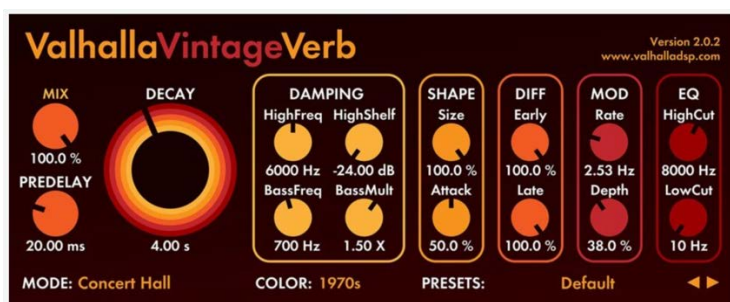**Figure 3.46.** *The Valhalla Vintage Verb reverb plugin*

Figure 4.1. *The album "Autobahn" by Kraftwerk*

Figure 4.2. *The Electrix Warp Factory vocoder*

Figure 4.7. *The eighth version of the Antares Auto-tune software plugin*

Figure 4.8. *Antares Auto-tune Pro*
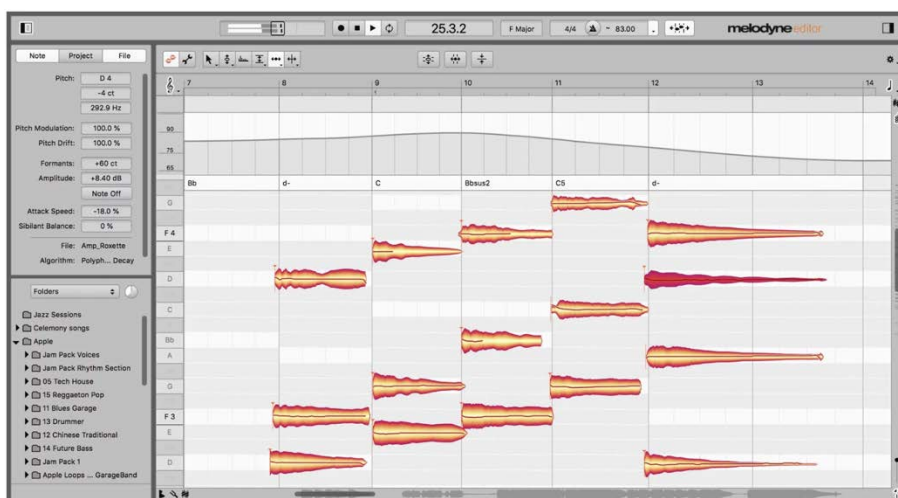

Figure 4.9. *The Melodyne 5 editing window*

Figure 4.10. *The Tascam TA-1VP rack-mounted speech processor*

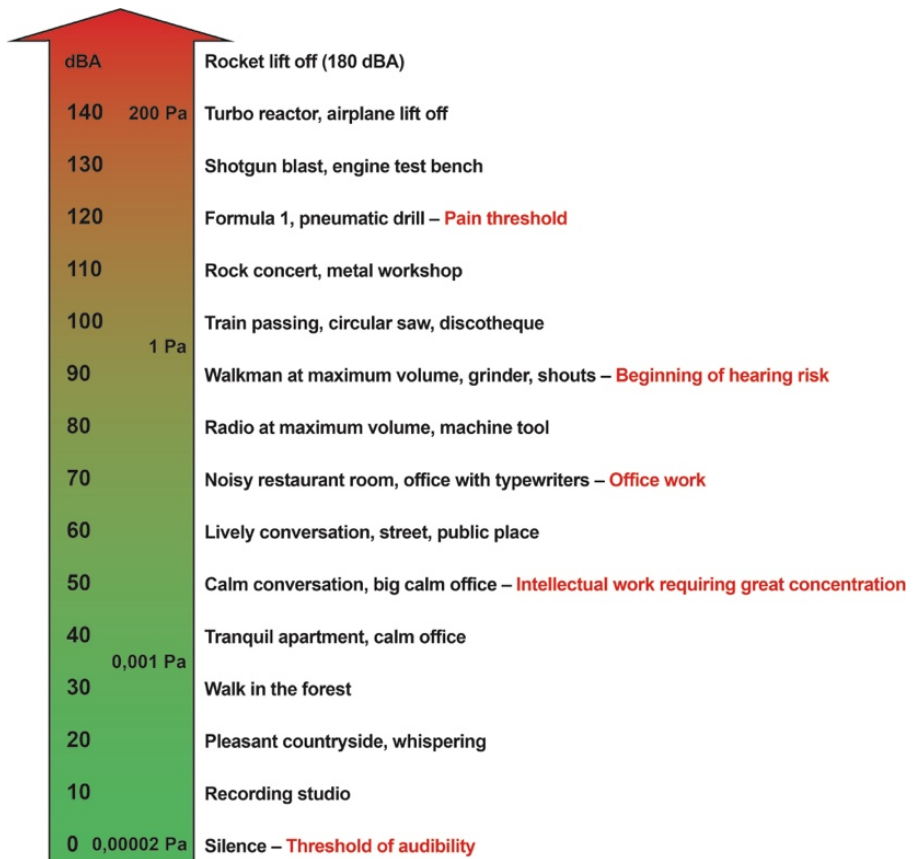**Figure 4.11.** *Electro Harmonix's Voice Box voice processor pedal*

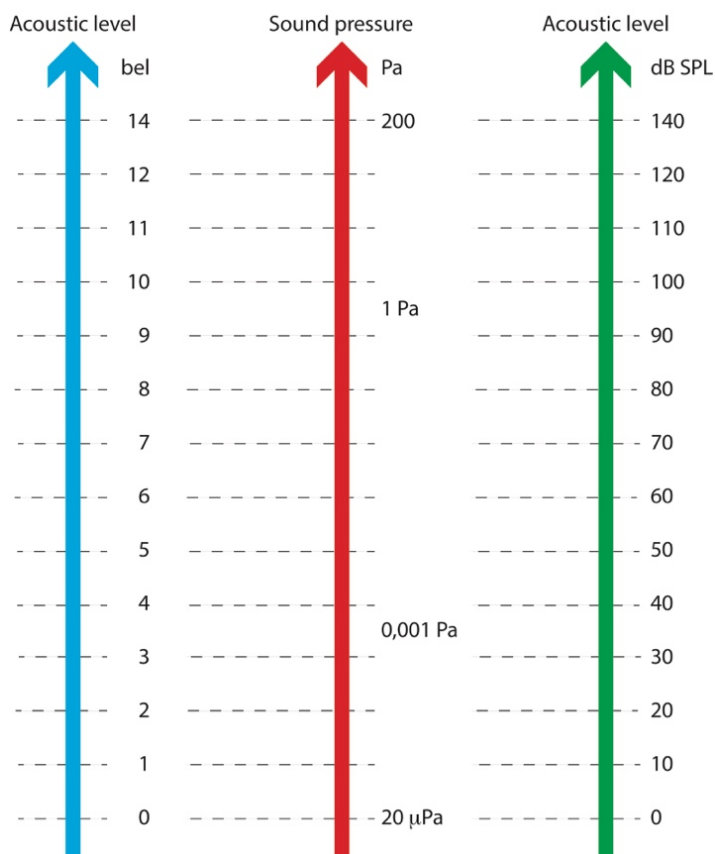**Figure A1.1.** *Sound level scales (source: Wikipedia)*

Figure A1.2. *Comparison of bel, decibel (dB SPL) and pascal (Pa)*

Figure A2.1. *Some models of coaxial jacks. 1) subminiature 2.5 mm mono male jack, 2) 3.5 mm miniature stereo male jack, 3) 3.5 mm miniature multi-pole male jack, 4) 6.35 mm (1/4'') stereo male jack, 5) 6.35 mm mono male jack, 6) 6.35 mm angled mono male jack, 7) 6.35 mm chassis stereo jack, 8) 6.35 mm chassis mono jack, 9) 6.35 mm chassis mono jack*
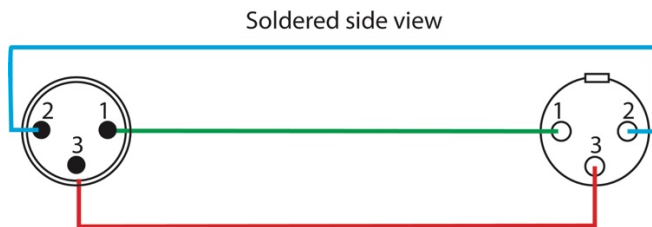

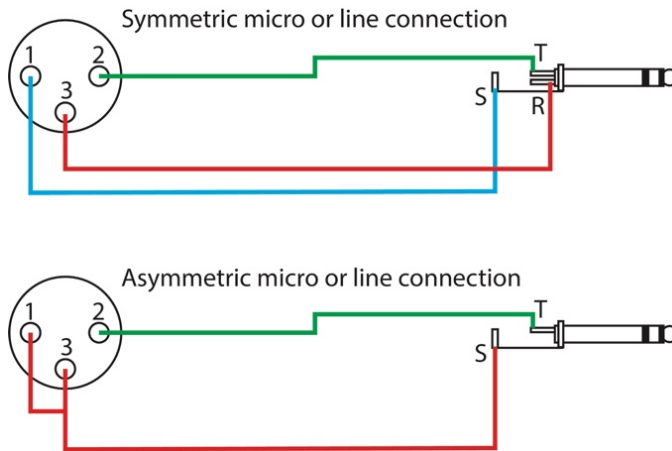**Figure A2.5.** *Wiring diagram of a classic XLR cable*

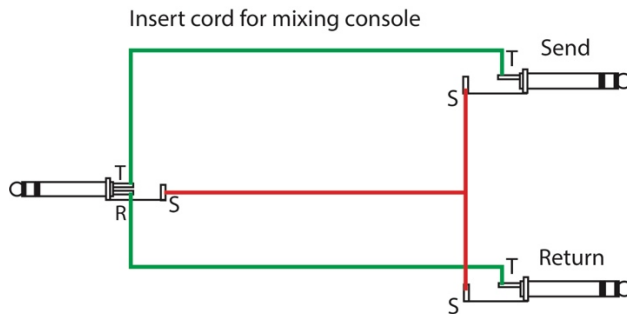**Figure A2.6.** *Wiring diagram of XLR jack adapters*

Figure A2.7. *Wiring diagram for an insert cord*

Figure A2.10. *Some Sub-D connectors and a female Sub-D/XLR breakout cable*

Figure A2.12. *RCA male and female connectors and chassis*

Figure A4.11. *Decca tree installation (source: www.musictech.net)*

Figure A4.13. *A Blumlein installation (source: www.musicradar.com)*

Figure A4.16. *A Jecklin Disk installation (source: Wikipedia)*