Chapter 15. Meeting 15, Workshop: Microphone Positioning and Recording Sessions

15.1. Announcements

- Mix Report 1 Due Monday 9 April
- Processing Report 2 comments and grades out tomorrow

15.2. Mid/Side Pairs

- Rather than capturing left and right, capture front and sides
- Combing cardioid and figure eight can result in dual-cardiod equivalence

- Cardioid (M) and Bipolar (S, positive on right)
• Cardioid (M): receives coincident R + L

• Bipolar (S): receives coincident R - L

  Sounds arriving to the bipolar microphone are stamped with polarity

• Converting MS to LR

  Take M (R+L) and add side (R-L): return 2R

  Or: take front and remove all signals in phase with the left (leaving the right-most capture)
  Take M (R+L) and add inverse side (-R+L): return 2L

  Or: take front and remove all signals in phase with the right (leaving the left-most capture)
• Summarized post processing of M/S to L/R signals
  
  • \( L = \frac{M + S}{2} \)
  
  • \( R = \frac{M - S}{2} \)

• Polarity of figure-eight mic is important: right is positive

• Decoding MS in a DAW requires three tracks
  
  Side track is duplicated and panned hard left and hard right

  Right side track is inverted (use Live Utility plugin)
15.3. Mid-Side Advantages

- Can easily get an on-axis, mono capture
- Cardiod is on-axis: a potentially better-sound capture
- Can control width of stereo capture in mix

15.4. MOSS Microphones

- AKG C414 XL II (4)
  
  Large-diaphragm condensor; multi polar pattern (cardioids, omni, figure-eight)
• Audio-Technica AT4041 (6)
  Small-diaphragm condenser; cardioid polar pattern

• TC20mp (2)
  Small-diaphragm condenser; omni polar pattern

• Mojave Audio MA-200 (1)
Large-diaphragm tube condenser; cardioid polar pattern

- Sennheiser MD 421 (2)
  Dynamic; cardioid polar pattern

- Shure SM57 (2)
  Dynamic; cardioid polar pattern

- Royer R-101 (1)
  Ribbon; figure-eight polar pattern
• AT M250DE (1)
  Dual-element instrument microphone

• e604 (1)
  Dynamic cardioid w/ more than 160 dB dynamic range
• Blue enCORE 200 (4)

Active dynamic cardioid

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15.5. Stereo Positioning Review Sheet

• Coincident
  • XY: two cardiods, splay between 60 and 120 degrees
  • MS: one cardioid, one figure-eight, 90 degrees between mid and side
  • Blumlein: two figure eights at 90 degrees
• Near-coincident
• ORTF: two cardioids, 6.7 inches apart, 55 degrees splay from forward
• NOS: two cardioids, 11.8 inches apart, 45 degrees from forward
• Faulkner: two figure-eights, 7.9 inches apart, facing forward
• Spaced
  • AB: two omnis spaced between 2 and 10 feet (or more) apart

15.6. Procedure

1. Review Mics

2. Groups

  Each group contains 3 or 4 students (names removed for privacy)

3. Setup stereo configuration based on assignment on card

4. Identify and describe adjacent microphone configuration