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

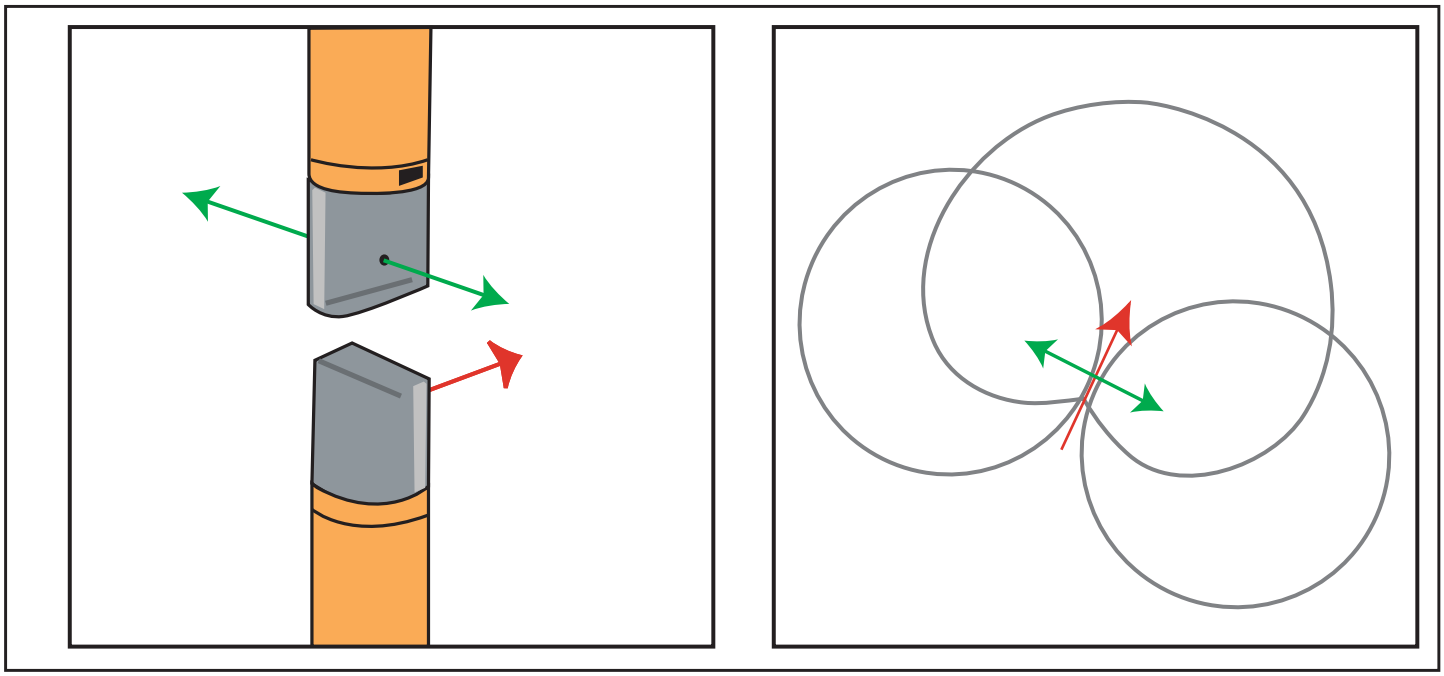
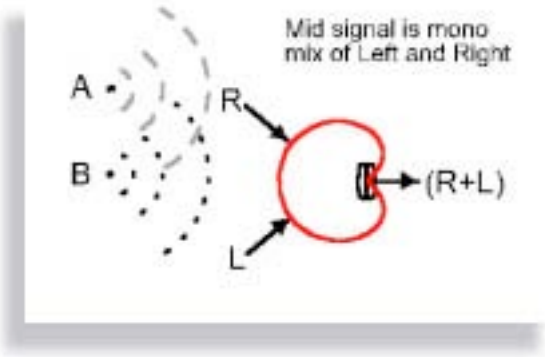


Image by MIT OpenCourseWare.

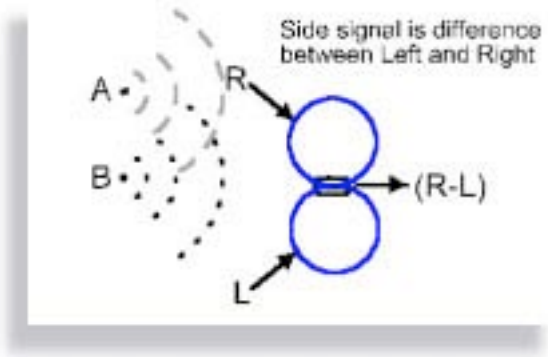
- Cardioid (M) and Bipolar (S, positive on right)

- Cardioid (M): receives coincident R + L



- Bipolar (S): receives coincident R - L

  Sounds arriving to the bipolar microphone are stamped with polarity



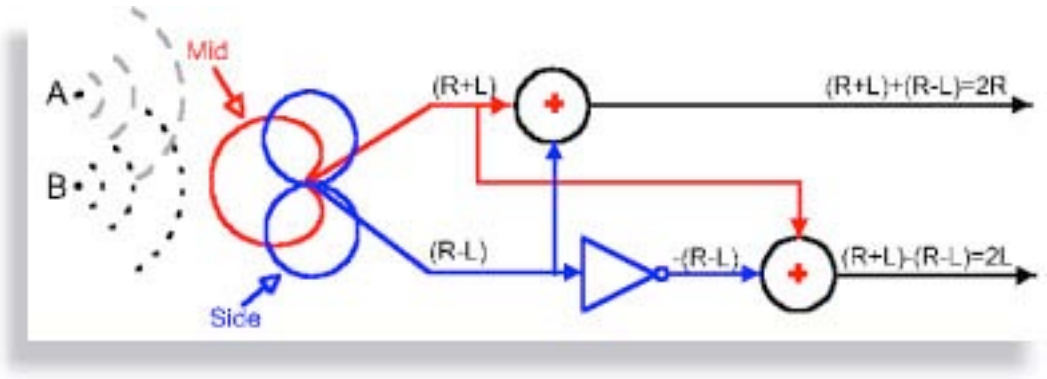
- Converting MS to LR

  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

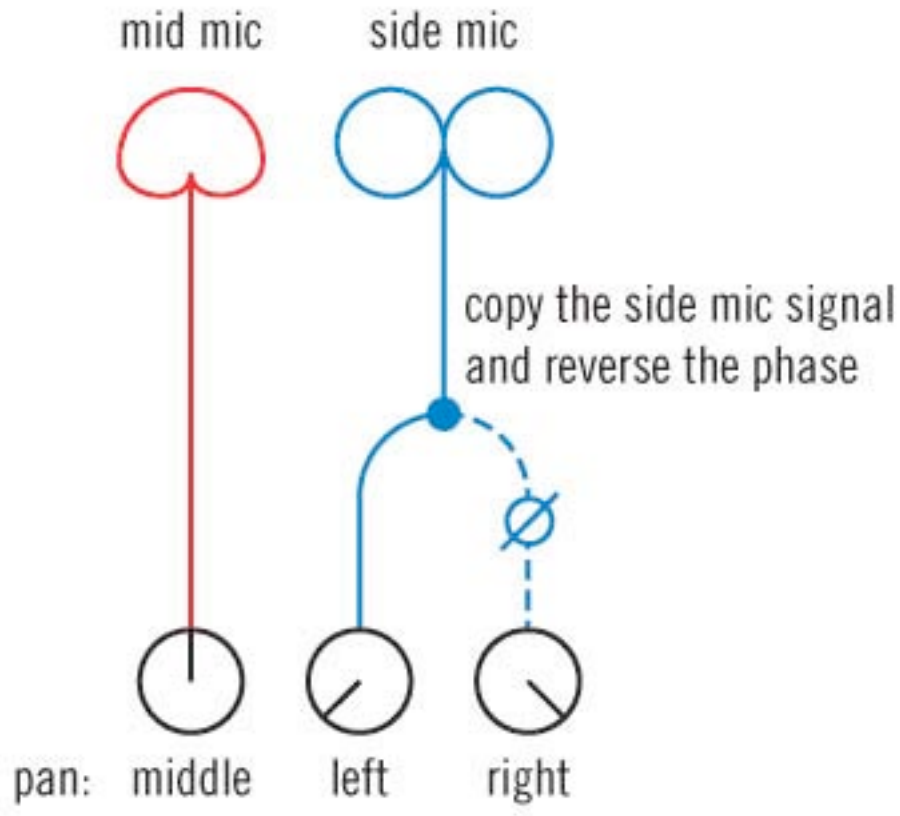
  Or: take front and remove all signals in phase with the right (leaving the left-most capture)



- Summarized post processing of M/S to L/R signals
  - L == (M + S) / 2
  - R == (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 condensor; cardioid polar pattern

- TC20mp (2)

  Small-diaphragm condensor; omni polar pattern

- Mojave Audio MA-200 (1)

Large-diaphragm tube condensor; 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

15.5. Stereo Positioning Review Sheet

- Coincident
  - XY: two cardioids, 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

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