

# MICROPHONE TECHNIQUES

For Episodic Television and Features



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## LOCATION AUDIO FOR TELEVISION IS EVOLVING

### Traditional two-track field recording

- Audio captured from few mics
- Mixed on location
- Fed to camera or recorded independently



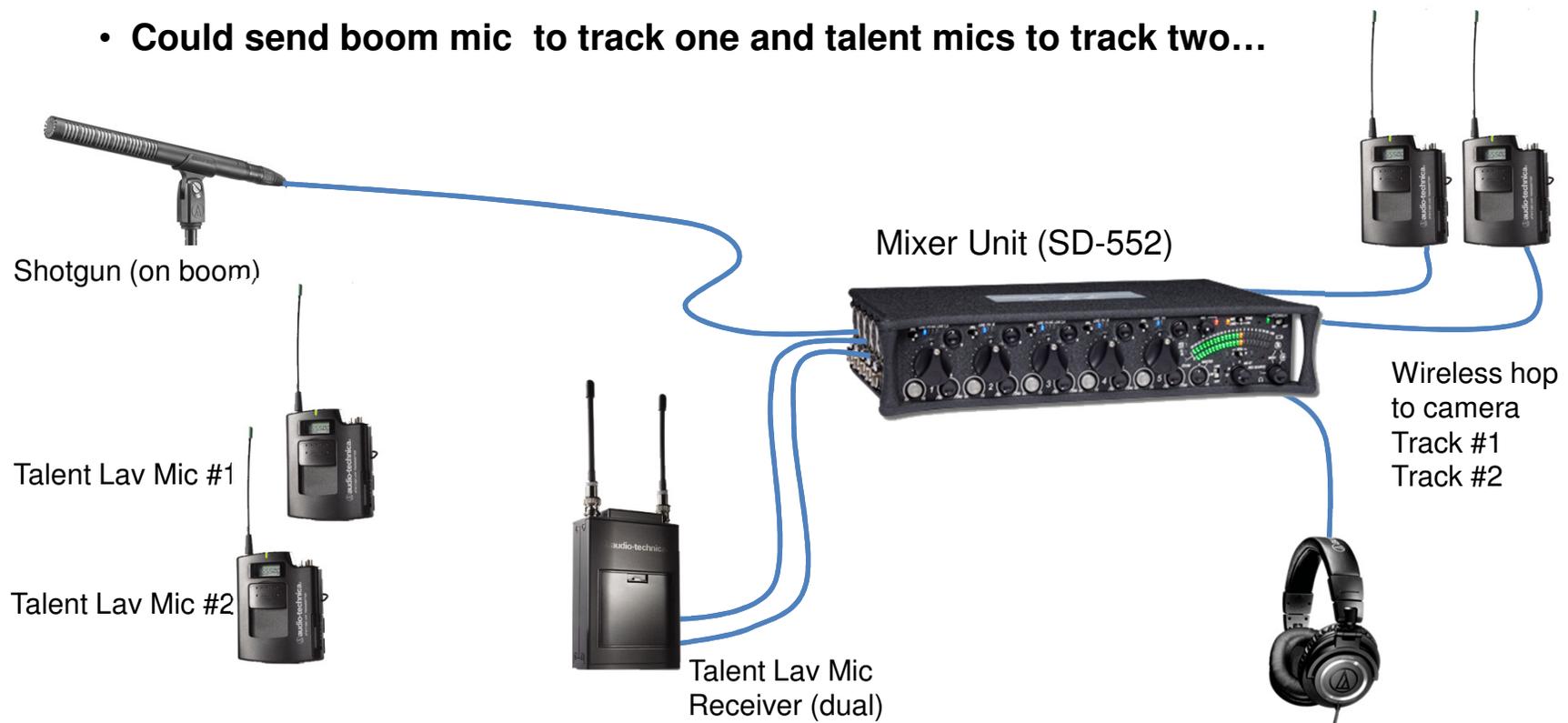
### Multi-track field recording

- Becoming standard operating procedure for feature films and episodic television
  - Reality Shows
  - Multiple principal characters
- Eight – twelve tracks not uncommon
  - Small digital recorders
  - Direct to computer



## TRADITIONAL TWO-TRACK WORKFLOW

- **Basic location sound package**
  - **Audio is mixed to two tracks**
  - **Could send boom mic to track one and talent mics to track two...**



Output of mixer can also feed camera via break-away umbilical cable

## LIMITATIONS OF TWO-TRACK WORKFLOW

- No way to isolate any of the talent mics individually
- Mix is dependent on what was captured on location
- Becomes more cumbersome as more mics are added

7 Channels - 2 mixers  
ganged

6 channels of wireless

1 boom pole with  
short shotgun mic

Internal power distribution  
- NBP1 Battery

2-channel wireless camera  
hop

30 Pounds of gear to carry



## MULTI-TRACK WORKFLOW

Each mic is recorded independently to its own channel

- Boom mics
- Plant mics
- Talent mics (radio)

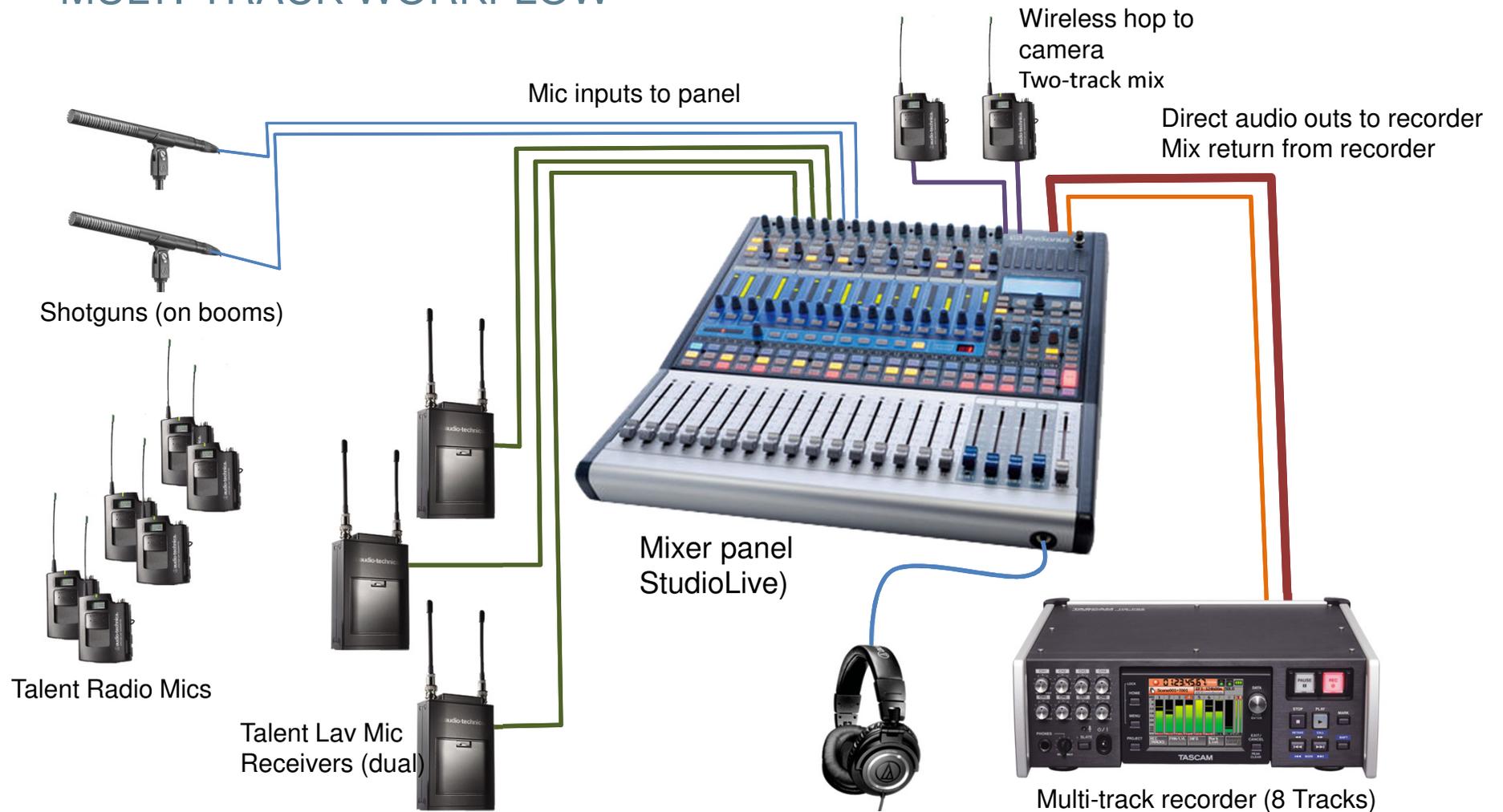
Simultaneously mix to a composite or mixed down track

- Used for immediate playback, dailies, and for the picture edit
- Sent to cameras as scratch track

After picture cut is “locked” sound editors have option of reconstructing all or part of the live production mix from the raw independent tracks (known as iso’s)



## MULTI-TRACK WORKFLOW



## ADVANTAGES OF MULTI-TRACK WORKFLOW

- Allows for isolated mics / tracks
  - Key talent mics on individual tracks
  - Helps minimize phase issues when talent mics are close
  - Allows for reconstruction of the production mix in post
- Allows full (2-track) mix for cameras, dailies, and the picture edit
- Allows multiple plant mics to be submixed
- Allows for multiple booms
  - Two boom perspective



## MULTI-TRACK RECORDING OPTIONS

### Multi-track recorder with dedicated fader controller

- Recorder can record up to eight iso's
- Simultaneously assigning and mixing to additional pair of stereo tracks
- Input level set by trim pot on recorder
- Mixdown levels controlled by faders on dedicated controller



### Multi-track recorder with with external mixing panel (non-dedicated)

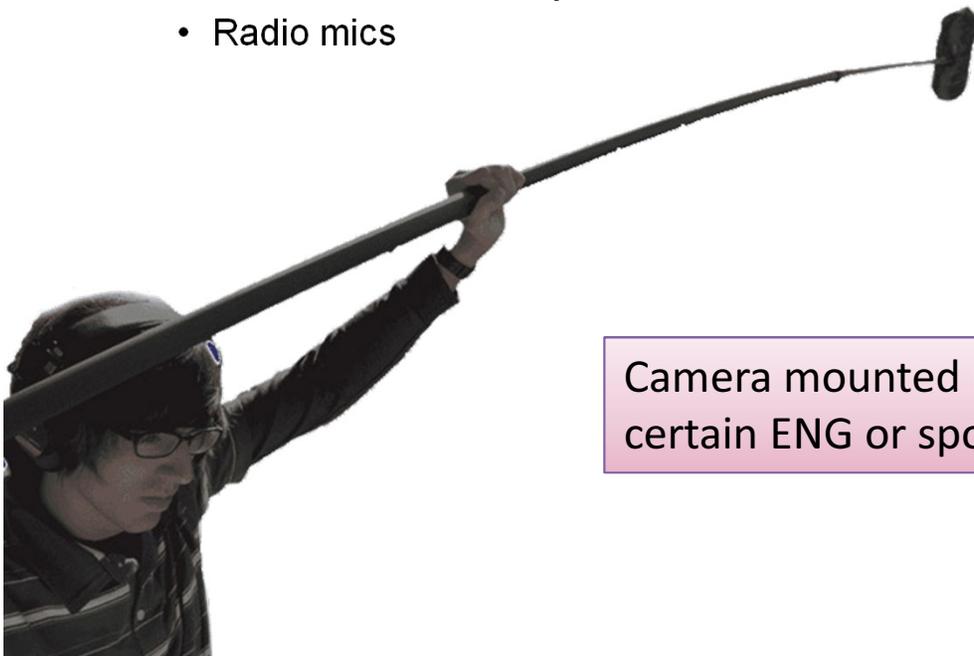
- Offers greater number of inputs (16)
- Multiple outputs (subs, boom out, etc.)
- More elaborate signal processing
- Recorder can record up to 7 iso's
- Channel 8 on recorder is used for the mixdown from the panel



## MICROPHONES FOR LOCATION DIALOGUE RECORDING

### Hierarchy of microphone technique

- Boom from above
- Boom from below
- Boom mike planted (stationary) on set
- Lavalier mike planted on set
- Lavalier mike worn by actor
- Radio mics



Camera mounted microphones are avoided except for certain ENG or sports audio applications

## BOOM MICS (PHANTOM POWERED CONDENSER)

### BP4071 – Line + Gradient Condenser long shotgun

- Highly directional – best choice for exterior dialogue and distant sound effects
- Best exterior results: 2 – 6 feet overhead
- Best interior results: 2 – 9 feet over actor’s head
- May show slightly more echo sensitivity indoors



### BP4073 – Line + Gradient Condenser short shotgun

- Medium directional - general purpose workhorse of shotgun group
- Recommended for crisp, clear dialogue
- Best interior results: 1 – 6 feet over actors
- Moderate echo sensitivity when used indoors
- Good outdoors: 1 – 4 feet over actor’s head



### AT4051b – Cardioid Condenser

- One of Hollywood’s best kept secrets
- “Wide-angle” boom mic is best choice for interior scenes
- Provides richest dialogue and may reduce or eliminate echo in hard rooms
- Deploy up to 2 feet over actors



## BOOM MICS (PHANTOM/BATTERY POWERED CONDENSER)

### AT897 – Line + Gradient Condenser short shotgun

- General purpose short shotgun
- Best interior results with mic 1 – 4 feet overhead



### AT8015 – Line + Gradient Condenser long shotgun

- Highly directional with tighter pickup pattern than AT897
- Better for exterior dialogue and distant sound effects
- May show more echo sensitivity indoors than short shotguns



## BOOM MICS – MOUNTING CHOICES

Shock mount minimizes pick up of mechanical and boom operator handling noise

### AT8415 Shock Mount

- Proper mic insertion
- Over/under on bands
- Fits boom pole (3/8" threads) and mic stands



### AT8471 Isolation mount

- Locks on to mic
- Less isolation
- Fits mic stands



### K-Tek KGPSS – Mic Mount

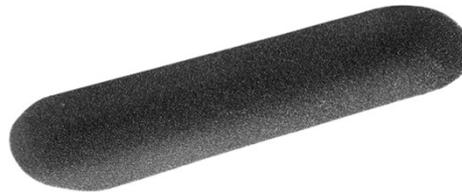
- Smaller profile
- Locking swivel adjustment



## BOOM MICS - WINDSCREENS

Help to minimize effects of wind and air movement across the mic

- Use foam windscreen indoors



- Use “fuzzy” windscreen outdoors



- Zeppelin/Fuzzy - maximum wind rejection



## MINIMIZING WIND NOISE – OTHER WAYS...

- Put body between mic and wind source
- Use an omnidirectional mic
- Use lavalier mics
- ADR (Automated Dialog Replacement)...



## BOOM MICS – OVERHEAD BOOM TECHNIQUE

- Most favored for TV/Film work
- 90% of time best choice
- Most natural sounding dialog
  - Line of sight: Boom – Talent – Ground
  - Pleasant blend with multiple actors
  - Allows for a fair amount of actor movement
  - Can pick up SFX (footsteps, natural sounding hand prop noise)
  - Dialog dominates over SFX pickup
- Easier to maintain audio perspective
  - Wide shot - high - distant
  - Close-up - greater presence - nearness



## BOOM MICS – ALTERNATIVE BOOM TECHNIQUES

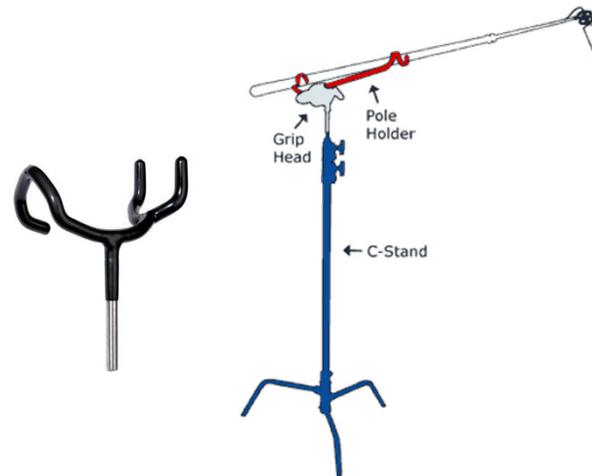
### Boom from underneath

- Avoids overhead obstructions
- Sound is slightly more bassy (mic picks up more chest cavity)
- Hands are closer to mic than mouth – SFX can dominate dialog
- Watch boom getting into shot



### Boom mic fixed or “planted”

- Any mic fixed in place on set or location
- C-stand, Mic stand or clamped in place
- Good choice when actors stay in same spot
- Less strain on boom operator



## BOOM TECHNIQUE

### Amount of boom extension

- 12' - 15' - cover set on production
- 5' - 8' - Run and gun documentary, news
- Do not lock pole sections all the way out
- Watch center of gravity (extend longer)

### Preventing cable noise

- Keep external cable tightly wrapped around pole
- Watch loose connections
- Wrap excess cable around boom tip at mic location, but not too tight



## BOOM TECHNIQUE

### Holding the boom

- Grip pole tightly, avoid excess finger movement
- Hold pole parallel to floor
- Keep arms close to head (“H”)
  - Keep one arm straight (locked) as fulcrum
  - Use other arm to control pole
- Grip toward pole’s natural balance point

### Microphone placement

- Close to action
- White tape on tip of windscreen
  - Establish working frame reference
  - Dip low than lift boom out of frame



## JOIN US FOR OTHER PRESENTATIONS

Microphone techniques for DSLR cameras

Rigging wireless and lavalier microphones

SpectraPulse applications for broadcast applications



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