

SHAW ACADEMY  
NOTES

**Diploma in Video**



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As Ren Klyce, sound designer on such films as Girl with the Dragon tattoo, Fight Club, Where the wild things are, The social network, once said...

*'You may have the prettiest composition, but if sound isn't right – if it's not supplementing the image – the image will fall flat.'*

Its crucial to understand the importance of sound in video.

**Cannot really be fixed if wrong**

**Harder to get consistent audio**

**Audio can be difficult to get right**

**Good audio increases the overall quality of the film**

Its very important to get it right and get into a good habit with this

If the file is damaged, distorted, clipping any of these issues are almost impossible to fix

Bad audio can be difficult to create continuity. Continuity means consistence, smoothness.

Its not that its difficult, its just you need to take that extra bit of time to get it right. On a shoot students get slightly nervous and flustered.

## **5 Rules**

There are 5 simple rules/guidelines to follow guys.

These guidelines will help you so that you can achieve high quality audio each time.

1. Get the mic close as possible -
2. Always use Headphones!
3. Monitor sound from the camera
4. Scout locations for sound - find potential problem areas
5. Room Tone – record the natural sound

Sound is reduced as the distance is increased.

So the aim guys is to get the mic as close as possible to the subjects mouth without the mic coming into shot.

You would never see anybody who is recording sound not wearing headphones & with good reason.

It allows you to listen out for distortion, background noise. Things like that.

Examining a room to find potential areas that could cause an audio issue is essential.

Things like the hum of a air conditioner, a refrigerator etc. Problems in audio can be extremely difficult if not impossible to edit out.

Therefore we should try to spot any potential issues before recording

A great tip is too record the ambience of a room.

You can use this as an underlining audio tract to set atmosphere and to make audio transitions smoother.

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### Recording Audio:



### **Rode VideoMic GO Lightweight On-Camera Microphone**

So this is a very simple set up;

- Microphone attaches to the top of the camera.
- Microphone connects to the camera using a 3.5mm jack.
- Audio is recorded directly in camera.

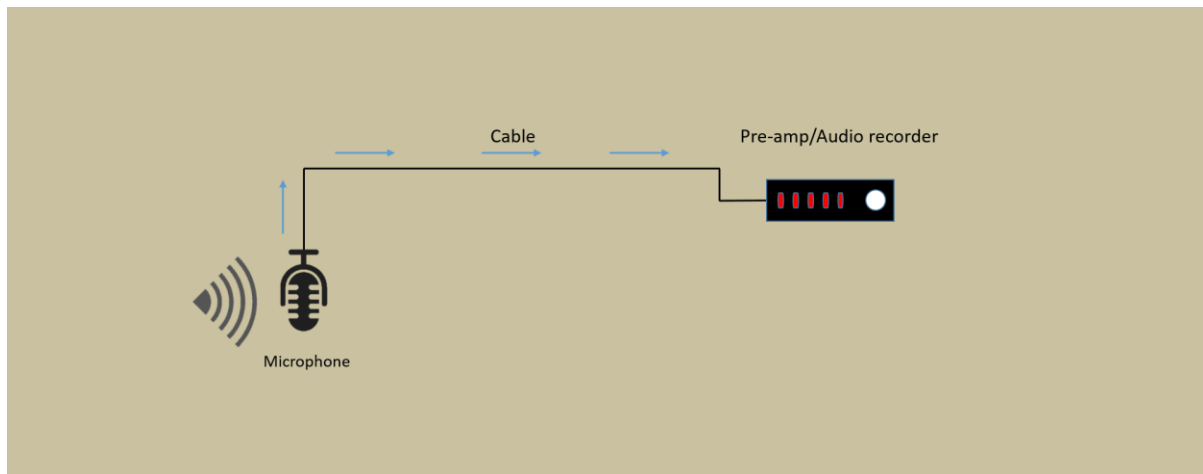
**You also have another option**



Its called a pre-amp. Its an external audio recorder, which can achieve higher quality audio, has more mic inputs & You have better control over levels

The audio does not record straight in camera so you will need to sync the audio to the footage.

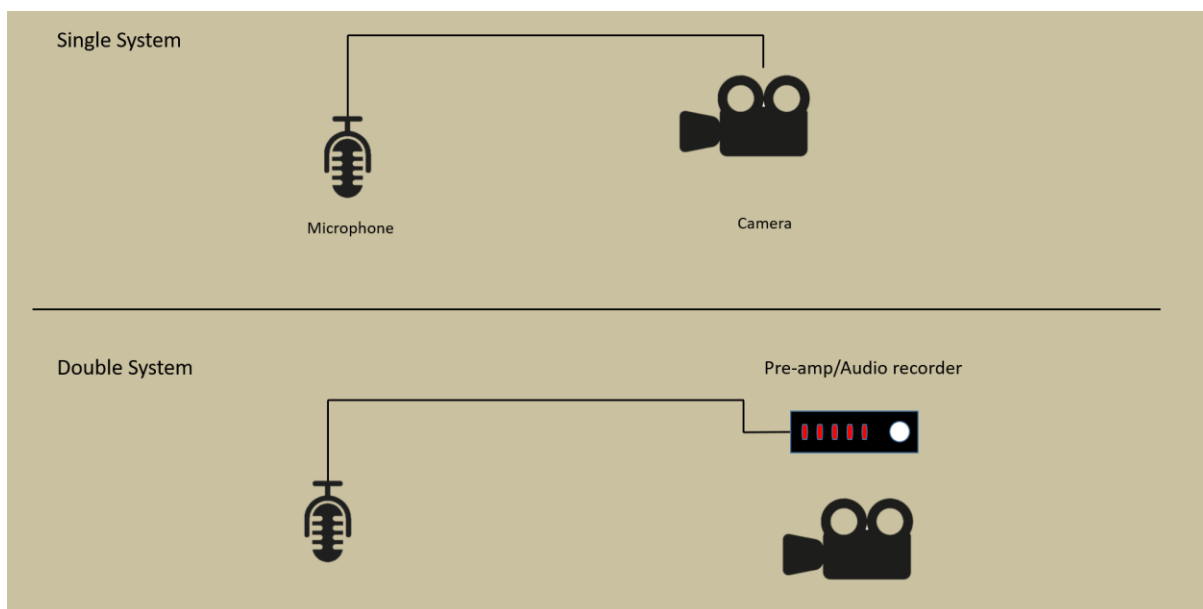
## Setups:



How does recording audio actually work?

1. Sound hits the Mic,
2. That sound wave is then converted into an analogue signal,
3. Sent down the cable,
4. And then the pre-amp or recorder converts it into a digital file.

There are 2 setups we are going to focus on for now.



Single System:



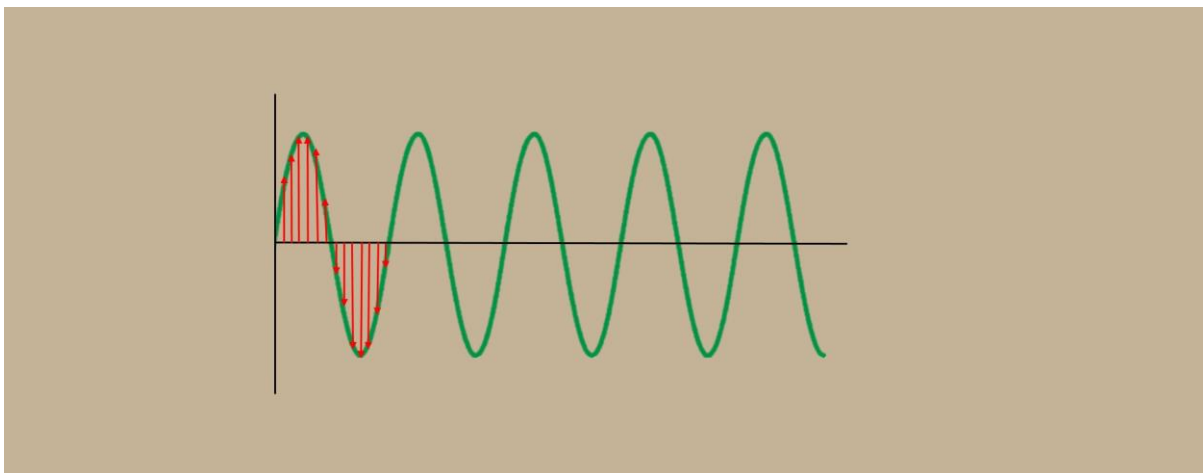
- No need to sync Audio or footage
- Which is a big time saver and is very helpful if you need to get it out there quick (like New + Documentary)
- Usually in these set-ups the Camera will have Mic inputs and a built in pre-amp.
- But like anything some pre-amps are better than others.

## Double System:



- The main reason guys is.... Better quality audio
- The Amps have much better sampling rates. Which allows them to record higher quality audio.
- If you don't have a camera with Mic inputs, like most DSLR's don't.
- Audio is not connected to the camera (more movement)

## Sampling Rates:



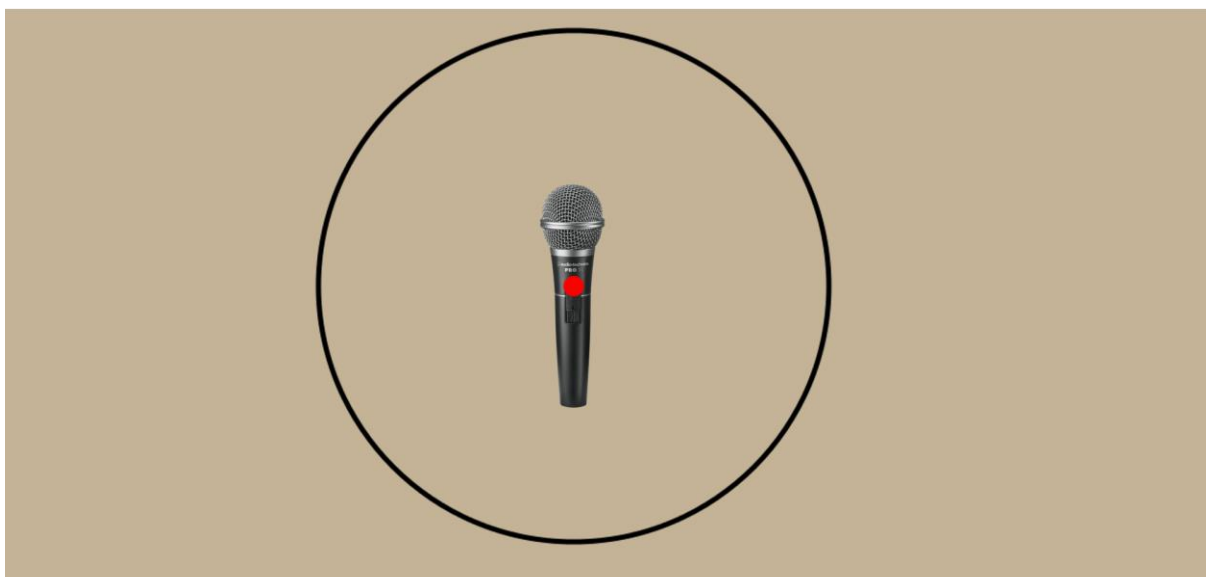
- Measured as (kHz)
- 11 kHz – Low quality
- 44.1 kHz – CD quality
- 48 kHz – Digital video audio – standard

- When the smooth analogue signal is being converted to digital it needs to be to 'Quantized'.
- Quantized is another word for sampling rate.
- Split up into samples, which measure the amplitude (*height*) of the wave. (Represented by the red arrows)
- Its basically mapping out the sound wave so it can reproduce it later.
- So the more sample rates we have, effectively means the more accurately we represent the wave form.
- Or the more accurate the map is.

### **Microphone pick up patterns:**

Its important to understand mic pick up patterns, this will help us decide what mic we will need for different situations and help when making a decision which ones best for you.

## Omni

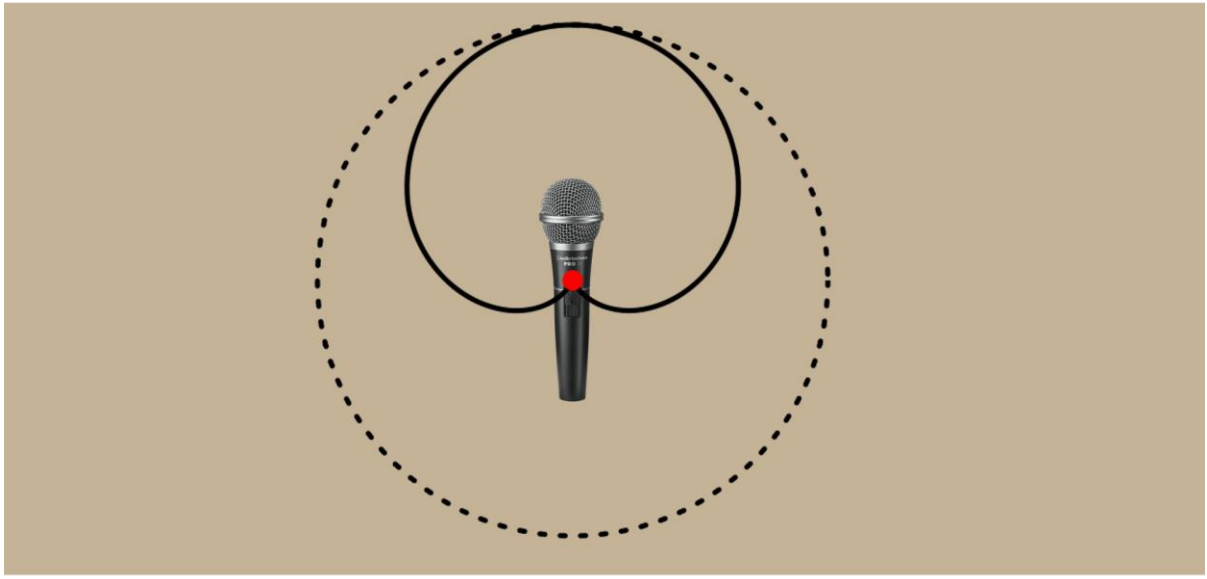


Omnidirectional mics as the name suggest pick up sound from all directions.

Great for when you are recording moving subjects or ambient sound.



## Cardioid mics

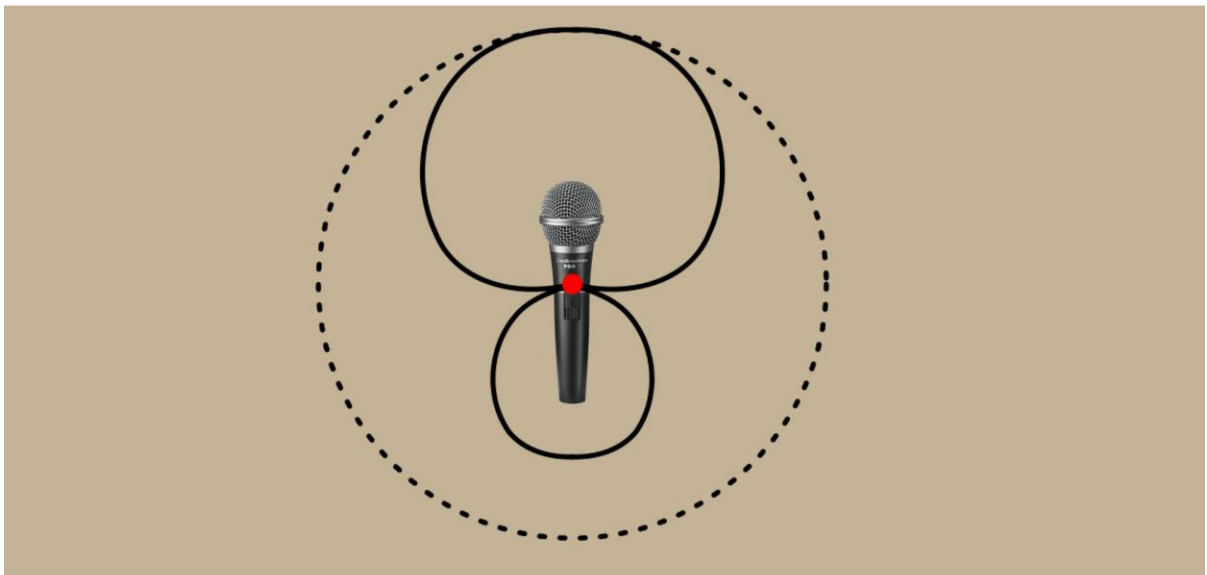


Cardioid mics are great all purpose mics.

Its is a directional mic meaning that it picks up sound coming from a certain direction.

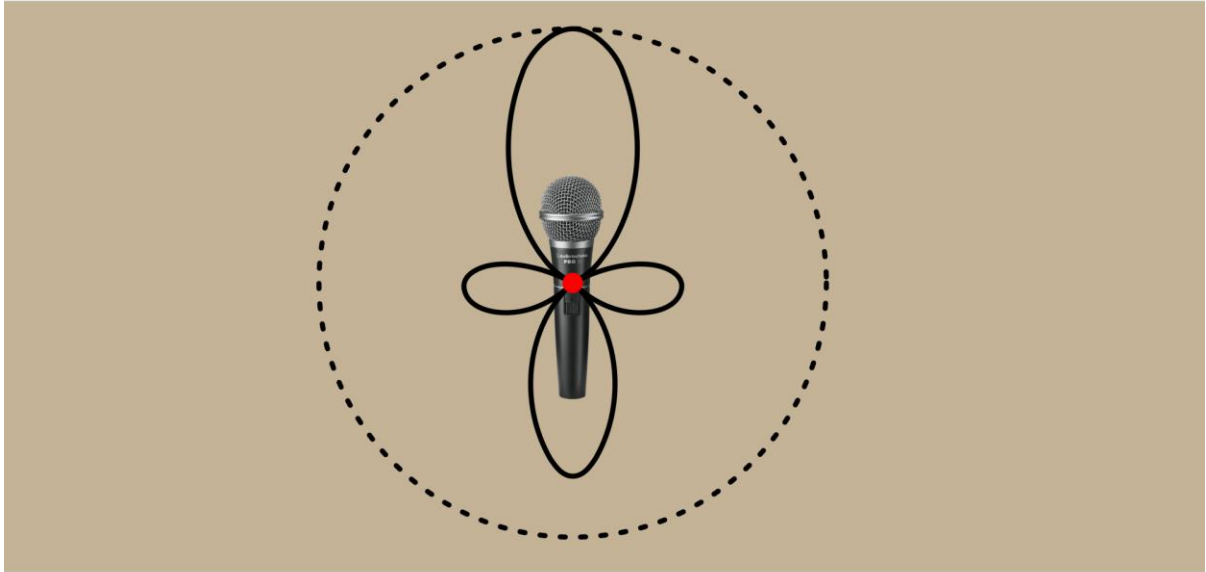
The pattern is so minimal background noise enters the mic. Especially if you are in a controlled environment.

## Hyper/Super Cardioid



A bit more of a specialist mic for recording instruments

## Shotgun



Typically used at the end of a boom mic

This meant that very sensitive to sound from the front and rear, but almost completely deaf on the sides.

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## Cables:

### 3.5mm Jack

## Audio cables

- 3.5 mm jack
- Unbalanced



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This is a 3.5mm jack connection. I'm sure absolutely everyone is familiar with this (earphones etc)

It's an unbalanced cable.

**Unbalanced-** there are 2 wires in this cable

1. Ground/Neutral
2. Carries the audio signal

Unbalanced are more susceptible to interference & noise

## XLR Cable

### Audio cables - XLR cables

- Professional Standard
- Adapters for Dslrs available
- Balanced – less interference



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Professional standard cables used in live music, studios, live tv broadcast etc

Most DSLR wont have a connection for an XLR cable but you can get adaptors.

Balanced: 3 cables

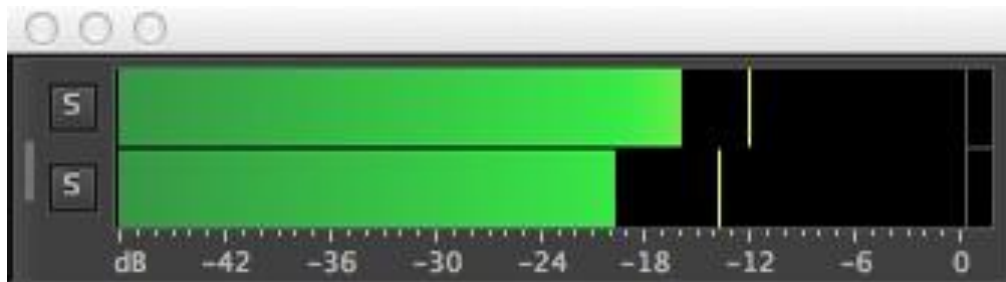
1. Ground/Neutral
2. Cable to carry the signal
3. Second cable same audio signal but out of phase

Out of phase: to put it simply one cable flips the audio signal the opposite way. (Very simplified explanation)

The reason for this is so if any noise or outside interference effects the sound when they are put back in Phase at the end the noise is cancelled out.

So balanced cables are better to use over long distances and they have less noise and interference Vs. unbalanced

## Levels:



Some things to note about levels.

Beware of the red zone

If the volume/level is too loud you get distortion

If they are too low, you get a hissing sound

-20 dB to -12 dB: if you keep your level between these it leaves you with headroom in case of a sudden spike in volume you've less chance of getting distortion.

You need to monitor the sound levels while recording, to make sure they are at the desired level, there is nothing worse than shooting a piece or a scene and there be audio issue, it's extremely difficult if not impossible sometimes to fix audio issues.

## Sound Effects:

Almost every sound in a movie was not there when filming.

Shooting on location or in the studio it's impossible to record all the minute sounds that are going on in everyday life.

Example scratch your head. Hear that sound? A microphone would not be able to pick that up.

Mainly on a shoot we focus on the dialogue, which that can even be re-recorded in the studio and laid over the footage. (known as looping)

These small sounds bring a scene to life (added in the post production).

## There are 3 main categories we are going to cover.

1. Ambience
2. Library
3. Foley

### **Ambience:**

Ambience is a psychological cue for a space. So we can use this to set our scene.

For example, a busy restaurant.

*Recording a minute of the ambience of the location will make your editing easier, you will have something to refer to, it helps with audio transitions.*

### **Library Effects:**

- **Buy commercially**
- **Some sites will have free effects**
- **Sound effects we cannot record ourselves**

These are sounds that we cannot record ourselves so we need to purchase them. So sounds like;

Explosions

Gun Shots

### **Foley:**

Jack Foley came up with the idea to record sound effects on a separate track.

Him and his team would act out the sound effects to match what was happening on screen.

Coming up with brilliant ideas such as breaking celery in half to create the sound of bones breaking.

Crumpling plastic wrapping as the crackling as a fire.

Sounds like, footsteps, bones breaking, fire etc

Thank you

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