The Loop Head Peninsula Digital Academy

Zucca Films

Digital Training Institute

astoneco

WEEK 4

# Essential Camera and Sound Recording Techniques

This project receives financial support from:

Clare Local Development Company

LEADER

The European Agricultural fund for rural Development: Europe investing in rural areas

Tionscadal Éireann 2040

# Good Filming Technique

Holding your camera.

Change your shot sizes when you can.

Avoid using the zoom, move closer to your subject.

Film with manual exposure

# Holding your camera

Find the position thats most comfortable for you.

Use what’s around you to rest on.

Use a tripod.

Make your own, rest the camera on something.

THE SCREAM
IRISH FILM
Loach on Loach
Lynch on Lynch


Reasonably good sound
Common problems + how to solve
simple kit
PHILIP PULLMAN
BOOK OF DUST
PHILIP PULLMAN
BOOK OF DUST


David Mitchell
THE BURIED GIANT
IRISH FILM

# Mostly…avoid using the zoom

Zooming will create a lot of shake when you’re holding the camera.

Smart Phones don't have great zooms - you quickly lose picture quality.

If you must zoom, use a tripod or something else for support and don't zoom too much.

Smart phones are not good for wildlife photography.

# Why we use Camera Moves

Adds energy to your film

Filming something that's in motion

Can help with storytelling

Can add interest to your camera work.

It’s really down to personal taste

# VIDEO: **Camera Moves**

# Manual Exposure

Exposure is the amount of light hitting the camera sensor.

To be correctly exposed the camera needs a certain amount of light to represent the what you're seeing accurately.

# Demo: Exposure

# Using Available Light

Decide what's important and make sure you can clearly see it.

Don't film in areas where the light is poor - move if the light is bad or move your subject around.

Check out your location in advance at the same time of day you intend to film - lighting conditions may change over the day.

Get the weather forecast - yr.no is great for very time-accurate forecasts.

# Using Available Light Outdoors

Avoid recording in harsh, direct, midday light when the sun is overhead - your camera sensor will have difficulty managing exposure for both highlights and shadowed areas.

# Using Available Light Outdoors

Cloud cover will give you a more diffuse, softer light.

For interview - look for areas in the shade to place your subject - the edge of a shaded area should give you enough light to expose your subject and avoid harsh directional light.

# Using Available Light Outdoors

Shoot in the direction of the light - ie with the light shining on the scene (unless you are after a specific effect - eg silhouette).

# Using Available Light Outdoors

Magic hour is the hour leading up to sunset or just after sunrise (extended in summer time) when the light is very soft and warm. Everything looks better in this light.

# Using Available Light Outdoors

There’s also the ‘blue’ hour just after sunset or before sunrise when there is light in the sky but the sun isn’t visible - good for getting a nighttime feel, but it’s still possible to expose. Need a clearish night.

# Using Available Light Indoors

Check the location in advance and find a good, bright position to set up filming. As with outdoors, position your subject so the light is falling on them.

# Using Available Light Indoors

Windows can be a good source of light but watch for very directional sunlight (which can create conditions similar to outdoors) - you might need to use curtains or blinds.

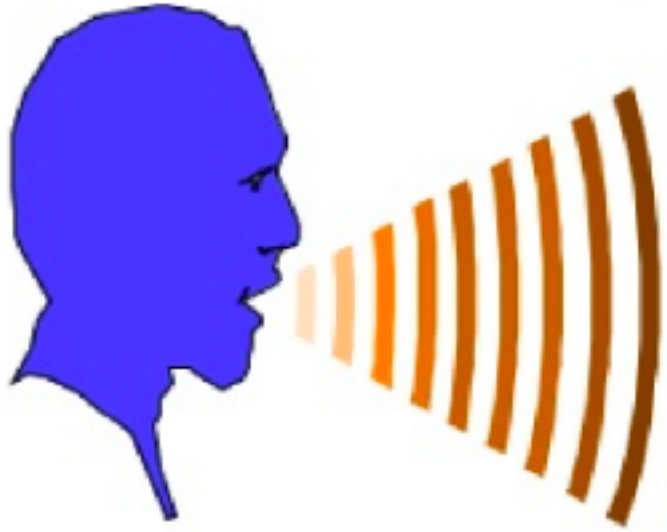
# Using Available Light Indoors

Use additional light sources like lamps if you need more light.

# Sound Recording

# How Microphones Work

When a sound is made air molecules move in waves outwards from the source of the sound.



Over distance, the strength of the sound waves reduces (dissipates).

# How Microphones Work

A microphone uses a fine metal filament to translate the movement of air molecules into an electrical signal. This becomes your audio signal.

**There are 3 types of microphone used to record sound for video:**

**Omnidirectional -** records equally from all directions (the mic in your phone is likely omnidirectional).

**Cardioid -** Records sound around but not behind the mic (lapel/ lavelier mic, handheld mic)

**Shotgun-** Records more in the direction in which it is pointed (directional mic).

# Recording v's Hearing

When we listen we are good at filtering out background noise and focusing on what we want to hear.

That's a mostly unconscious process that we are engaged in all the time.

Microphones are unable to mimic that process, so what we hear on our sound recordings will often contain a surprising amount of noise.

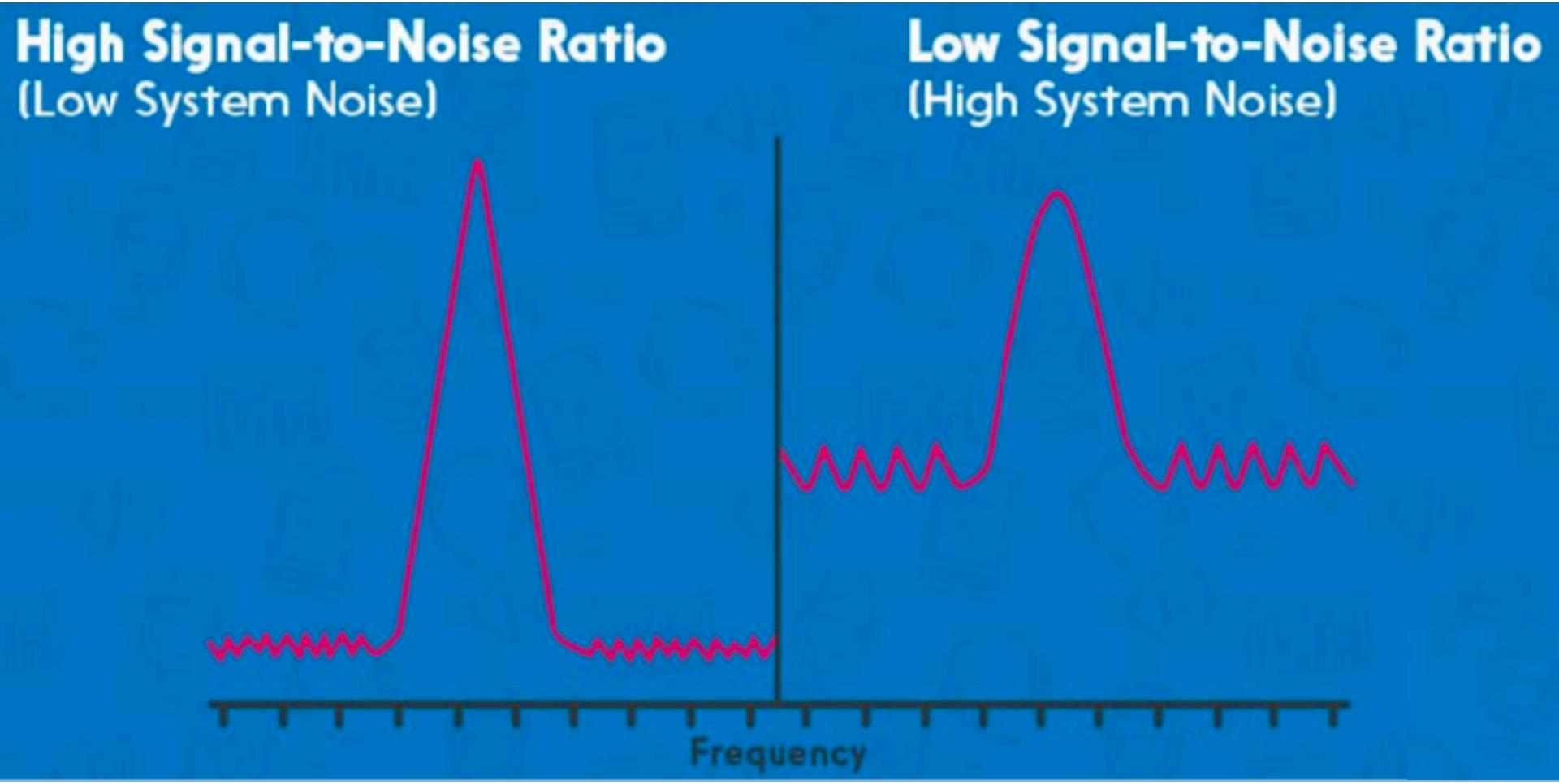
The recording process itself also generates noise.

# Signal-to-Noise Ratio

**Signal** - Sound which is intentional and desired.

**Noise -** Unintentional and sometimes unwanted sound. Noise is present in almost every environment and is also generated by the recording process.

Every recording will contain both signal and noise. The aim is to get as strong a signal as possible with a low level of noise. This is called your signal-to-noise ratio.


High Signal-to-Noise Ratio
(Low System Noise)
Low Signal-to-Noise Ratio
(High System Noise)
Frequency

# Signal to Noise Ratio

**Once the audio is recorded the signal-to-noise ratio is locked.** We can turn up (boost) the signal, but this will also boost the noise.

We can filter out some noise in post-production, but that process will also filter out any signal that exists on the same frequencies, so it can only have a limited effect.

It’s better to get a high signal to noise ratio at the recording stage.

# Signal to Noise Ratio

The closer the microphone is to the source of the signal the louder the signal will be in relation to everything else.

Also consider what other noises are in the location - move away from refrigeration units, fans etc - just turning your microphone to point away from the source of these sounds can make a big difference.

**Generally speaking you want to get the microphone as close as you can to the source of the signal.**

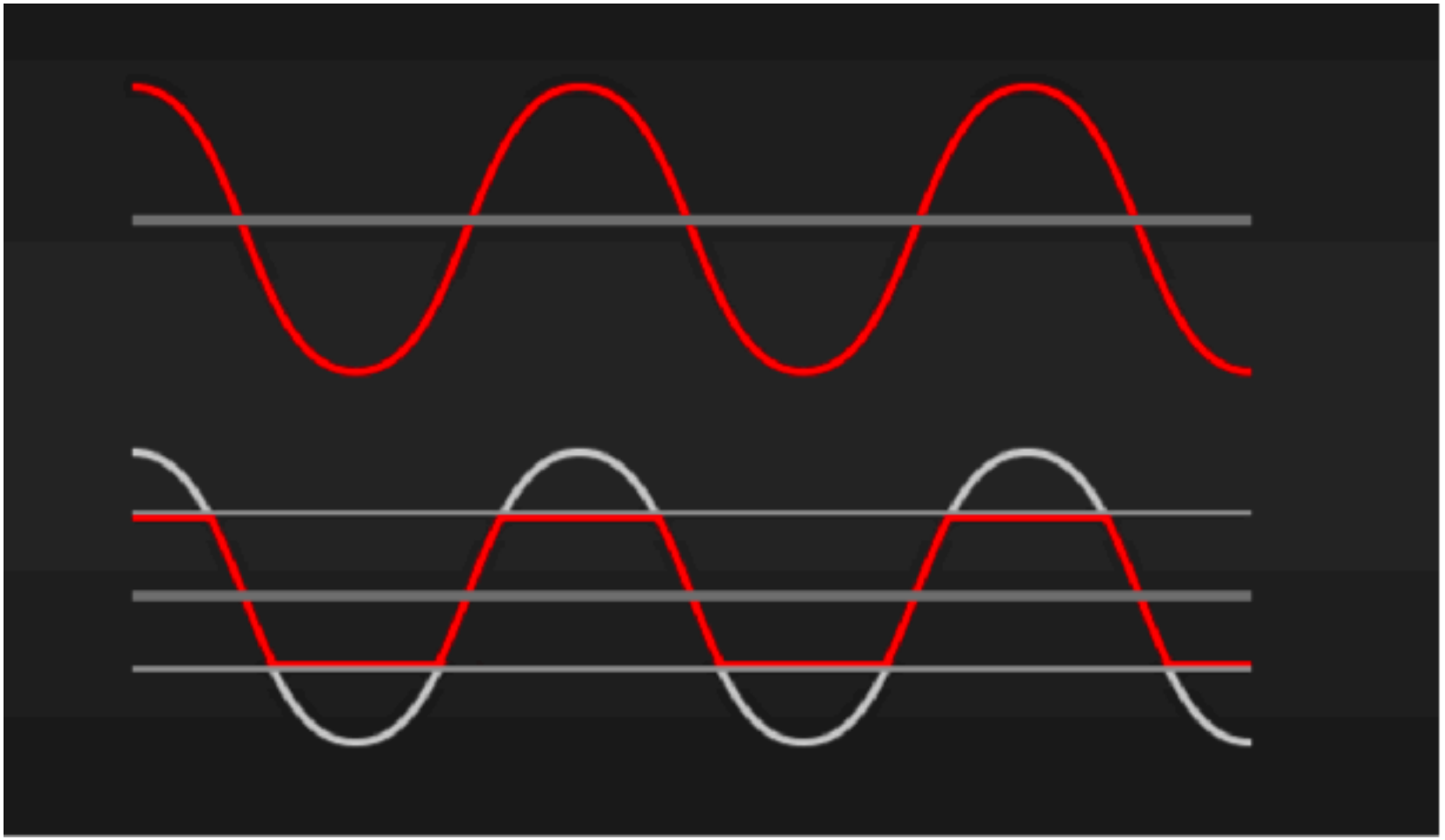
# Peaking

The digital audio recording only has a certain range of values available - ie it can only record signal up to a certain level.

Once the sound goes above a certain level it ‘clips’ the audio wave and records a flat signal.

This registers as distortion and it’s not possible to recover the ‘lost’ signal in post-production.

You need to keep your audio levels below the level of peaking or distortion.



# Monitoring Your Sound

In Filmic Pro or MAVIS you can see the audio meters on the screen and an indication of where they are peaking.

Listen on headphones as you are recording (if this is possible on your phone).

If not, record a little bit and then listen back - any problems will be clearly audible on playback.

# Why Monitor Your Sound

If something is going wrong you can hear it as it happens.

- Rustling - movement of clothes, jewellery, rings.
- Wind
- Sound of operator on the camera, or any noise generated by movement of cables.
- Messages or notifications on your phone.

**Exercise:** Record some narration in different locations & listen back to the ambient sound.

**Exercise:** Locate the mic on your phone, record your voice with the phone in different positions & listen back.

# External Mics

**Lavelier/Tie mic**

- Can be wired (tethered to the camera) or wireless.
- Mic needs to be close to the speaker's mouth.
- Cardioid microphone - records in front but not behind - does not pick up much environmental sound.
- Good for interview or PTC.

**Demo:** How to use a lavelier mic.

# External Mics

**Handheld Mic**

Good for interview or PTC where it's acceptable to see the mic in shot (news-type reports, vox-pops).

Cardioid microphone - needs to be very close to the speaker's mouth.

Does not record much atmospheric sound.

# External Mics

**Shotgun Mic**

Good for recording a balance of atmospheric sound and whatever it's pointed at.

Needs to be pointed at the speaker's mouth for the best result.

Good for general filming - events, b-roll etc and interviews in controlled (low noise) circumstances.

Can be mounted on the camera, so that it's recording whatever the camera is pointing at.

**Demo:** How to use a shotgun mic.

# Recording Interview Sound

For any voice recording - PTC/interview - the position of the mic in relation to the speaker is key.

If you are using the phone mic only, you need to be very close to the subject.

# Recording Interview Sound

If you are using a wired or wireless lavelier mic the camera can move away from the subject, but the mic should be close to their mouth.

# Recording Interview Sound

If using a shotgun mic it should be pointed directly at the mouth of the speaker and needs to be relatively close.

# Recording Outdoors

Microphones work by capturing the vibration of air molecules on a very fine filament. This makes them very sensitive to any type of movement or vibration.

Any touch or movement on the mic or cable during recording is potentially captured as a distortion of the audio signal.

Likewise wind or rain hitting off the microphone can distort the recording.

# Recording Outdoors

If the wind is light you can use a shield/wind sock for your microphone, or shield it with your hand, body or clothing.

A certain amount of wind-noise may be acceptable, depending on the subject, but for longer interviews in very windy conditions consider finding a very sheltered spot, or recording the interview as a separate element, in another location.

# Recording Outdoors

If there is something in the environment that is making a lot of noise and you can't get rid of it, another option is to get a shot of it instead and incorporate into your scene.

# Recording PTC/Narration Indoors

In addition to the environmental sound indoors the mic is also going to pick up the echo of your voice as it bounces off the surfaces in the room.

The more hard surfaces in the room the more pronounced this effect.

Pad hard surfaces with soft material.

If you are just recording VO/narration consider using a small space like a wardrobe or a room with a lot of soft surfaces. You can also hang a fabric over yourself.

# What We Covered

Good filming practice and camera moves.

Exposure using manual exposure

Working with available light indoors and outdoors.

How microphones work.

Recording with your phone mic.

Recording with an external mic.

Common sound issues and how to deal with them.

# Q&A

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THANK YOU!

# See you on the next session…

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