

# Mastering Microphone Technique

## Class Notes



presents


## Mastering Microphone Technique

Created by David H. Lawrence XVII

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### This is a Science class.

It's all about the technology.




#### Art

The skill of **storytelling**. How to voice commercials, animation and narration. It's where almost all other voice over classes stop.




#### Commerce

The **business** of the business. How to attract customers, how to show them your wares, how to fill their needs, and how to price and collect your fees.




#### Science

The **technology, tools and digital skills** needed to create and sustain your voice over practice. The science is always changing.


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### Here's the plan for class.




#### Introduction

Mastering Microphone Technique: why an intimate understanding of your most frequently used tool, your microphone, is essential.




#### Lesson 01

Kinds of microphones, how they work, and a glossary.




#### Lesson 02

Microphones you will be using, and their accessories.




#### Lesson 03

Balancing and addressing your microphone. The essentials.




#### 3 Or More Things To Explore


Your homework and other actionable items.



#### Questions and Answers


Save your questions until the end, then fire away.

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## Introduction

Why understanding microphones is essential.


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### It's just a mic. Why worry about being an expert?


Mastering your microphone makes you more money. Here are three reasons why.




✓ **You save the producer time when you know what you're doing:**  
Studio time, engineering, production - being efficient with time is the hallmark of a great talent.




✓ **You know what to expect from the hardware:**  
When you know exactly how to work a particular mic, you can create a stable core voice and brand.




✓ **You can make better spending decisions:**  
It's better to know that there's a \$150 mic that sounds like a \$400 mic than to spend too much. And if you cheap out, you'll get exactly what you pay for.

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## Lesson 01

Kinds of microphones, how they work and a glossary.


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“ When you speak, a diaphragm on the mic vibrates (on all types of mics). ”



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“ Vibrations are converted to **ENERGY** representing sound – on **STUDIO** mics. ”



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“ Vibrations are converted to **DATA** representing sound – on **USB** mics. ”



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“ Microphone pickups are very sensitive to soft sounds, loud sounds, and minute changes. ”



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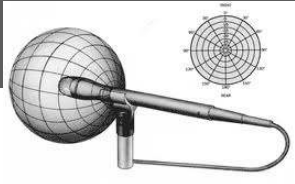
**Other kinds of microphones.**  
There are lots of them. None of these are appropriate for 21<sup>st</sup> century voice over.



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**Pickup Patterns**  
**Omnidirectional:** the mic picks up sounds at equal volumes from all directions.



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**Pickup Patterns**

**Cardioid** the mic picks up sounds in front of the mic, less of the sounds behind.

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**Pickup Patterns**

**Cardioid** the mic picks up sounds in front of the mic, less of the sounds behind.

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**Pickup Patterns**

**Others** omni, cardioid, shotgun and figure-8/stereo. **Cardioids** what we'll use.

Omnidirectional    Cardioid    Shotgun    Figure-8/Stereo

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**Glossary: Frequency Response**

The microphone's ability to pick up different frequencies in the spectrum of human hearing. This is a nice, flat response curve.

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**Glossary: Frequency Response**

The microphone's ability to pick up different frequencies in the spectrum of human hearing. This is a "phone system" curve.

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**Glossary: Analog-to-Digital Conversion**

The process of converting your voice (analog sound waves) to data (digital representations of sound) the computer can use.

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### Glossary: **Shock Mount**

An optional cage for the mic, suspended on elastic bands. Cuts down on vibration from surrounding sources: stand, desk etc.

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### Glossary: **Windscreen or Pop Filter**

A piece of fabric or foam placed between you and the microphone pickup, to minimize pops and other harsh sounds.

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### Glossary: **XLR (balanced) cable/connector**

For studio microphones connecting to older analog consoles.

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### Glossary: **TRS (tip-ring-sleeve) 1/4" cable/connector**

For stage/studio microphones connecting to older analog consoles and patch bays (places to plug in lots of mics).

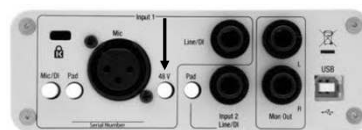
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### Glossary: **USB Bridge/Audio Interface**

Allows XLR and TRS studio and stage microphones to be used with computers. The bridge does the A-to-D conversion.

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### Glossary: **Phantom Power (48 volts)**

An additional power source used by microphones that require electrical energy to operate – usually condenser microphones.

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Lesson 02

Microphones you will be using, and their accessories.

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Our workhorse mic: **The AT-2020 USB Plus (\$170)**

<http://vo2gogo.com/get-at2020usbplus>

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Microphones to lust after.

Someday, right?

		
Neumann TLM103/U87 \$1,200 - \$4,000	Sennheiser MKH-416 \$1,200.00	Shure KSM-44 \$1,000.00

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Microphones to avoid at all costs.


Don't let me catch you even looking in their direction, you got me?

		
Blue Yeti or Snowball Bad A-to-D conversion	Any stage mic Bad frequency response	Anything less than \$90 Cheap for a good reason

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Admonition: Only the AT-2020 USB Plus.



No Snowballs, no Yetis. Four reasons that you should buy this USB mic, and only this USB mic.

	<b>01 Proper A-D converter</b> The analog-to-digital converter is the same one used by ProTools.	<b>02 Headphone jack</b> Lets you monitor in real-time, saving you unnecessary replays.
	<b>03 Volume control</b> Set your volume to a comfortable level, and never have to change it.	<b>04 Balance control</b> Instantly compare what you've recorded with what you hear played back.

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Don't pay for unnecessary pop filters

The Red Sock will do just fine, and for pennies.

		
Foam ball Distances you from the pickup. \$15.	Windscreen Distances you even further. \$50.	The Red Sock It's all you need. \$1.


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**Desk stand or floor stand. It's your choice.**


The desk stand allows for travel, the floor stand allows for flexibility.



**Desk Stand**  
Perfect for most setups. \$12.




**Floor Stand**  
A bit more flexible. \$25.


  
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**“**

Get comfortable using headphones or earbuds. They are essential to good microphone technique.

**”**



  
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**Earbuds or headphones. Whatever's comfy.**

Either way, you'll be saving yourself lots and lots of time, and you'll be a better voice over talent.



**Sony earbuds**  
Lightweight and accurate. \$10.



**Sony headphones**  
Complete isolation. \$80.

  
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Where to get the Sony MDREX10LP \$10 earbuds:

**<http://vo2gogo.com/get-sony10dollararearbuds>**

  
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Where to get the Sony MDR 7506 \$80 headphones:

**<http://vo2gogo.com/get-sonymdr7506>**

  
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**Fun with headphone volume**


Use these two tricks to assist you in performance.


**Turn volume up for an intimate read.**

Your vocal volume will naturally lower to match how you normally hear yourself. Raised headphone volume equals lowered voice volume.

**Turn volume down to raise your voice.**

Likewise, lowered headphone volume equals raised voice volume, as you again try to hear yourself as you usually do.




  
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### Lesson 03

Balancing and addressing your microphone: the essentials.



  
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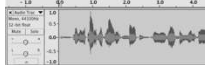




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### Setting the recording level in for the AT2020 in Audacity.

Too low, and you'll raise the noise floor when you normalize. Too high, and you'll distort your sound.

  
  
Too low – 1 out of 10  
Almost no level at all.

  
  
Much better – 4 out of 10  
Nice and fat.


  
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### Balancing your microphone.


Here's the control that lets you match your playback volume level with your recording volume level.

  
Record  
What you hear when recording live.



  
Playback  
What you hear when you play back.


  
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### Balancing the AT2020 USB Plus– Video Demo

David and author Sean Platt balance Sean's microphone.




  
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### 6 Steps to Proper Mic Addressing


What to do when working the mic.


  
**01** Make sure the label is facing you. Not BACK.


  
**02** Don't overpower the pickup – speak across the grille, not into it.


  
**03** Distance: the Scouting salute, not the surfer's "shaka mahala."

  
**04** Listen to previous work when matching, such as audiobook chapters.


  
**05** Use the "bass proximity effect" for intimate reads.

  
**06** Make mistakes so you can learn from them.

  
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### 3 Or More Things To Explore

Your homework and other actionable items.

  
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3 or more things to explore.  
Take what you've learned, explore and learn more, then put that all to work.


- + **Acquire and connect your AT-2020 USB Plus, your stand and earbuds.**
- + **Set your record levels, then balance your record/playback earbud volume.**
- + **Record as many pieces of copy as you can, and listen for room noise.**
- + **Break down and travel with your equipment, then set it back up again.**


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**Questions**  
Fire away. Or send them to [david@vo2gogo.com](mailto:david@vo2gogo.com).

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**Pick a clip to record.**

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