SOUND

Microphone Pop Filter

- A pop filter, known as a pop shield or pop screen, is a noise protection shield used for microphones. Generally, people use it in a recording studio. It helps to decrease popping sounds that the mechanical impact of fast-moving air creates from plosives during recorded speech and singing. These enable you to keep the saliva off the microphone during recording.

- **Types of Pop Filters:**

- Two types are available, including nylon mesh and thin metal. The genuine version of the tool is nylon mesh type, and people have been using them for decades. These generally run around $20 on average, relying on the company you will purchase.

- People use these to stop plosives. These are the blasts of air coming from the mouth while using words with hard letters, such as B's, P's, T's, etc. It causes a loud blast of air to go to the microphone's capsule. As a result, it can cause overloading unpleasantly. In addition, it can create the sound "pop" at that point in the word.

DAW

- A digital audio workstation (DAW) is music production software that allows users to record audio on a personal computer. DAW software works on both the Mac and Windows operating systems. It is used for audio recording, audio editing, MIDI editing, mixing, and mastering, among other functions. DAW software powers sessions in professional recording studios and home studios alike.

- A digital audio workstation functions by converting analog audio—which arrives via an external audio interface—into a digital sequence that can be processed on a computer. This audio information appears visually on a computer screen either as sonic waveforms (bars representing MIDI commands) or as music notation on a staff. You can then manipulate this sound data by interacting with it on the screen.

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- **Functions of a Digital Audio Workstation?**

- Digital audio workstations offer a wide array of functionality.

1. 1. **Record and edit audio**. DAWs feature audio sequencers that let users record multiple tracks and play them back simultaneously. You can then cut, copy, and paste audio waveforms much in the same way you can move text in a word processing program. Tracks can easily be muted and crossfaded into one another. At any point during the editing process, the digital files can be played back as analog audio through speakers or headphones.

- 2. **Play virtual instruments**. Using MIDI commands, you can control virtual instruments that replicate the sounds of acoustic instruments like the piano, violin, cello, clarinet, guitar, bass, and drum sets. Musicians typically control these virtual instruments using external MIDI sequencer keyboards. Various synths—which do not replicate acoustic instruments—can also be controlled by MIDI keyboards.

- 3. **Experiment with audio effects**. Digital audio workstations typically offer various effects processing features for your audio files. Effects such as delay, reverb, tremolo, compression, EQ, and echo tend to come standard on a DAW. Some producers also use third-party virtual studio technology (VST plugins) for particular effects. For instance, you might use your DAW's compressor but use a third-party plugin for reverb sounds. It's also usually possible to set up custom automations to create volume fades, panning effects, and other forms of audio processing.

1. 4. **Mix and master audio tracks**. Some music producers take audio tracks recorded by someone else, import them into their DAW, and then mix those files and add final burnishing effects.

2. 5. **Work on sound design and non-musical audio**. A digital audio workstation works for any type of audio—not just music. Some sound designers, ADR engineers, audio editors, and voiceover artists use the same DAW programs used by top music producers.
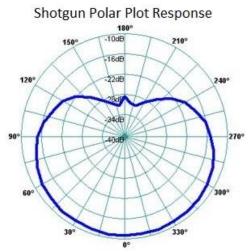
- **Types of Digital Audio Workstation**

- Many types of digital audio workstations exist in today's retail market.

1. 1. **Avid Pro Tools**: For decades, Pro Tools has been a popular choice for recording high-fidelity audio. Recent versions of the program feature robust MIDI functionality, but Pro Tools built its name in audio recording, editing, and sequencing.

2. 2. **Ableton Live**: This popular DAW has many adherents in the electronic music and hip-hop scenes. It offers a highly intuitive workflow for creating drum loops and adjusting beats on the fly.

3. 3. **Image-Line FL Studio**: Previously known as Fruity Loops, FL Studio offers many functions, but it is particularly favored by producers of electronic dance music (EDM). If you base your musical compositions around prerecorded loops and drum sounds as opposed to recorded audio, FL Studio may be the best DAW for your needs.

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- 8. **Audacity**: Audacity is a free open-source audio editing program. It has far fewer capabilities than paid DAWs, but it functions on many platforms—including Windows, Mac, Linux, and Unix-style systems.

SHOTGUN MICROPHONE

- A shotgun microphone is a highly directional microphone that must be pointed directly at its target sound source for proper recording. Shotgun microphones use unidirectional microphones to achieve this high beam of concentration on the sound source to record the sound. Being that they use unidirectional microphones, they pick up sound well when the sound source is directly in front of them but begin to pick up the sound worse (much lower) when the sound source is moved to the sides and rear. A shotgun gets its name from the fact that the body of the microphone is shaped like the barrel of a shotgun, and just like a shotgun, the microphone must be aimed or pointed directly at its target source in order to effectively to pick it up.

Shotgun Polar Plot Response

- **Uses of Shotgun Microphones**

- Common uses of shotgun microphones are for talks or speeches in meetings, conferences, and lectures. In scenarios such as these, the speaker does not need to hold a microphone and speak into it or wire a microphone on his body in order to record his speech or lecture. He can just stand and talk at a distance as long as he talks to the front of the shotgun microphone. This way, the speaker can just focus on talking during his lecture without the cumbersomeness of having to have a microphone on him. So a shotgun microphone is advantageous in any situations where distance speaking will occur and the speaker will stay in a vicinity where he talks in front of the microphone, such as a professor lecturing throughout a class who stands centered in the classroom throughout his talk.

MIXDOWN / DOWNMIXING

- **Final output of a multitrack recording**

- The final output of a multitrack recording is known as the mixdown. This is the last step before mastering, where the finished mix is prepared for the medium where it will be released.

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AIFF

- The AIFF (Audio Interchange File Format) is an uncompressed audio file format developed by Apple in 1998, but is based on EA IFF 85 (Standard for Interchange Format Files developed by Electronic Arts), a wrapper format used on Amiga systems. This file format comes up with a standard for storing sampled sounds.

- An AIFF file is an audio file saved in the Audio Interchange File Format (AIFF). It contains high-quality audio stored in an uncompressed lossless format. AIFF files may also be saved as .AIF files or .AIFC files (if they are compressed).

- **MP3** files and many other common audio files, AIFF files are **uncompressed**. Because AIFF files' data is not compressed, AIFF files typically contain higher-quality audio than similar MP3 files. However, the files also take up more disk space since they store more data.

CUBASE

- Cubase is a digital audio workstation for professionals and beginners, especially those who like to **experiment with MIDI instruments**.

- It has a comprehensive library of virtual musical instruments and digital tools for physical instruments.

- It's a **customizable DAW** with multiple choices for the smoothest MIDI composition experience. Here's what you can do using Cubase.

- Cubase allows you to create a digital template that works for you and facilitates creating pre-organized tracks for faster production without affecting the quality.

- The keyboard commands allow for fast and seamless navigation and switching between sessions and tracks, saving time while producing complicated compositions.

- The MIDI editor allows users to **edit and manipulate** various MIDI parts simultaneously.

CUBASE

- It combines the features of a digital audio workstation with analog components.

- The chord tracks can be used to harmonize audio and MIDI tracks simultaneously.

- It has **multiple plug-ins** for every music genre.

- It can be used to create custom actions for organizing your tracks.

- It's a solid and versatile sequencer for an affordable price.

XLR CABLES

- An XLR cable uses three pins and has a circular connector. It is designed to be a more secure <u>audio cable</u> for use in live audio recording and professional recording sessions. XLR cables commonly are used with microphone technology to communicate the signal to a receiver.

- XLR cable's ability to deliver a balanced signal means the audio received has less unwanted noise and less outside electrical interference. You get more preservation of audio quality with an XLR cable and when combined with their ability in long-distance communication, this is what makes them such an apt voice-capture cable.

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AUDIO SYNCHRONIZATION

- "Synchronization" is an all encompassing term used in digital audio which refers to the various processes of keeping all "slave" digital devices locked together following the timing data from the "master" device. It is an extremely vital, although somewhat complicated process which is crucial to the operations of today's complex digital studios. In digital audio, there are two types of synchronization, generally referred to as "digital audio synchronization" and "time code synchronization". Both types of synchronization should be thought of as working independently of one another, but do often work hand-in-hand to provide the proper interaction between digital devices in a studio.

- Digital audio synchronization can be considered synonymous with sample rate. It is a timing reference which keeps sample accurate sync between digital devices keeping them running together, locked at the same speed. Every digital device needs to reference a clock source (either internal or external) in order to trigger its internal operations. An A/D converter, for example, uses the clock rate as a timing reference to know when to take a digital sample of the analog wave form.