

Fine. So you've got the whole video thing going until some snot-nosed kid crits you on your "bad" sound. It may seem simple but sound is actually a very complex thing and plays a major part in your film. Just like video, it too can be extremely frustrating to work with, especially if you don't have the best equipment. This tutorial is a crash course for Independent Filmmakers with a low, or zero, budget, in recording sound on-set as well as basic audio editing. It will not cover XLR connectors or more advanced forms of recording audio, but many of these principles will still be relevant.

I DON'T UNDERSTAND (JARGON):

Jack: *No, not your neighbour. In audio this is the component the plug goes into. Also often referred to as "Female".*

Mini 3.5mm Stereo: *The jack and plugs used on most camcorders supporting external microphones. Also known as "Phono".*

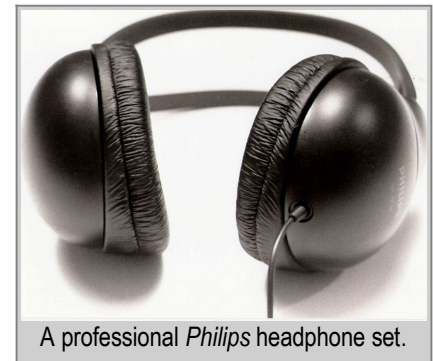
XLR: *High quality audio connectors providing higher quality sound than the conventional 3.5mm mini jacks (this will not be covered in this tutorial).*

Minidisc: *A small digital recording device manufactured by Sony.*

WHAT YOU'LL NEED:

If you don't yet have any of the following then try purchasing, hiring or loaning them:

- A microphone designed to be used with a camcorder and your input (in this case mini 3.5mm jack).
- A nice set of headphones.
- An extension (plug-wire-jack). I wouldn't recommend going over 5m and try and get one that is "Shielded".
- Tripod or boom pole to hold your microphone (See heading: "Boom Poles & Tripods").
- Free software known as "Audacity" (See heading: "Cleaning in Audacity")
- A slate-board for when recording with more than one camera (See topic: "Audio Sync")



A professional *Philips* headphone set.

GETTING STARTED:

First off you need to make sure your camcorder is capable of supporting an external microphone. A simple "Mic-In" jack will confirm this. This would usually be a Mini 3.5mm stereo jack on the side, looking very similar to a headphone jack. On that note, a headphone jack is also required to monitor the sound, just keep in mind that many manufacturers share their A/V outputs with the Headphone jack.

If you don't have a camcorder with a microphone input then an external recorder (such as a flash recorder or "MiniDisc") is also a possibility. I wouldn't recommend it though, as it will extend your editing time considerably (one will need to sync all the audio)

Another thing to remember is that there are mono microphones. If this is your case then you'll find that audio is only being captured through one channel (Left or Right). It is possible during editing to remove the empty channel and edit in Mono, but if this fails then attempt to purchase a mono to stereo converter. Alternately only purchase (or loan) a stereo microphone and don't be afraid to ask to test the microphone before purchasing.

BOOM POLES AND TRIPODS:

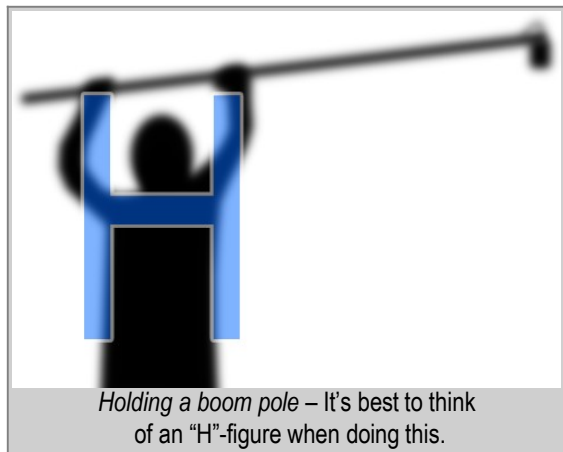
Try to avoid attaching the microphone to the shoe of the camcorder, it'll pick up as much motor noise as the onboard mike. Most camcorder microphones can fit onto the accessory shoe as well as onto a tripod. Where possible try to attach the mike to a separate tripod. This will reduce any irritating noises caused by a boom pole operator's movements. Unfortunately this cannot always be done and a boom will be required. One can easily create a boom pole if needed. A wooden rod, rubber grip, tripod attachment, foam (for insulation of sound) and duct tape is the easiest route, but there are many other DIY ways of creating a boom pole:

- http://www.indymogul.com/episode/imwe_20070727
- [http://www.instructables.com/id/Easy-Boom-Pole-for-Under-\\$30.00!!!](http://www.instructables.com/id/Easy-Boom-Pole-for-Under-$30.00!!!)

Alternatively you could just purchase one but they can become pricey...

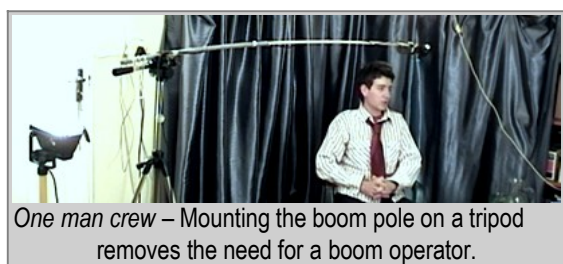


The easiest route to go – a tripod-mounted microphone.



Tips on boom poles and tripods:

- Boom poles conduct sound so avoid any movements when recording is in progress, especially if you are the boom operator.
- Make sure you don't bump into anything as this could seriously damage the microphone.
- Attach the wires to the boom and on walls (for tripods) etc. so as to avoid them bumping or rubbing and making a noise.
- Hold the boom up with both hands, creating an "H"-like figure (See the illustration).
- Don't forget to continually monitor the sound with a headphone set.
- When using extensions avoid any strong magnetic fields. Also avoid bring the mike into close proximity to lights. Even overhead fluorescent lights can cause a nasty hum.
- In most instances the tripod or boom should be placed above and aimed down to the subject.
- Mounting the boom pole onto a tripod removes the need for a boom operator (See the illustration).

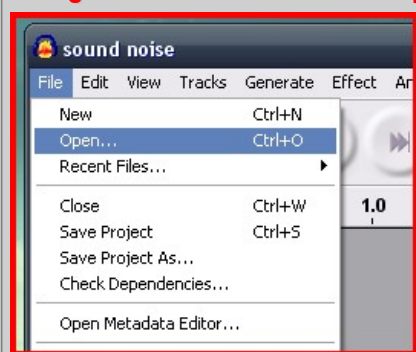


CLEANING IN AUDACITY:

One problem with lower quality and less durable audio equipment is "noise". During recording and editing you will most probably notice a slight static in the background. This is normal (unless it is completely overwhelming) and will most likely increase with extensions (especially un-shielded).

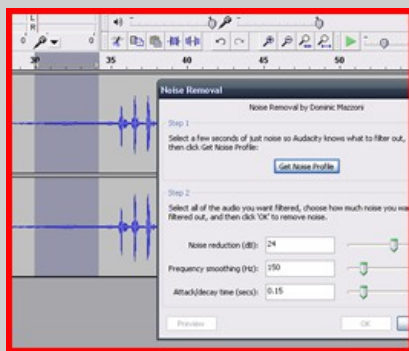
One may remove the noise using a feature in the open-source free audio-editing program "Audacity" which can be downloaded at: <http://audacity.sourceforge.net>

Using Noise Removal in Audacity:



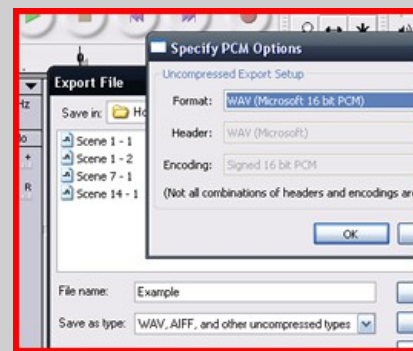
STEP 1:

Once you've finished editing render just your sound track out as a "WAV" file. Then start Audacity and open the audio file.



STEP 2:

Select a piece of your track that has just noise and open the noise remover under the effects menu. Get the noise profile. After that select the whole track and hit the "OK" button.



STEP 3:

Once you're satisfied, export the audio as a "WAV" file. In your editing program replace your old soundtrack with the clean version.

Make sure that just before every take you record some of the noise otherwise you won't be able to get a "noise profile".

AUDIO SYNC:

If you're filming with more than one camera or you're using an external recorder (such as a flash recorder or "MiniDisc") then, without the right procedures, your audio and video will be out of synchronization. The easiest way to fix this is to use a slate or clapper board. See <http://en.wikipedia.org/wiki/Clapperboard> for more information on slate and clapper boards.

Slate boards can also be easily constructed:

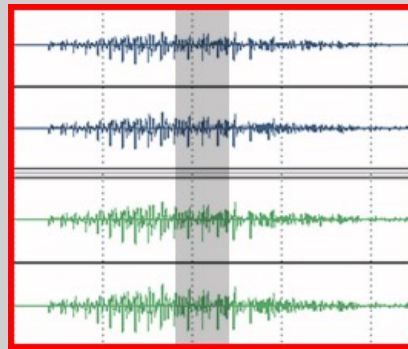
- <http://www.indymogul.com/post/7893/wesleys-weekly-how-to-clapperboard>
- <http://hv20.com/showthread.php?t=16890>

Basic Audio Synchronization:



STEP 1:

Write in all the details as usual. If you're using more than one camera specify which one will be the audio master. If you're using an external recorder make sure it's recording. Then drop the top section down of the clapper to create the "Clap" sound.



STEP 2:

Once you've captured your audio, align your streams according to the "Clap" sound. For external audio you can use the camera's onboard audio as a reference or the actual video footage of the clapper.

SOUND EFFECTS AND MUSIC:

If you are able to play an instrument or know of someone with that talent then consider recording some music for your film or project. One can also record your own sound effects. This is something that requires very little talent, a simple audio program such as "Audacity", and a computer microphone.

If all else fails, free music and sound effects are available online. The best places to find them would be at:

- http://www.vtkproductions.com/dar_soundfx.htm
- <http://www.pacdv.com/sounds/index.html>
- <http://freesound.iua.upf.edu>
- <http://fxhome.com/sounds>
- <http://incompetech.com>
- <http://www.jmtr.com>
- <http://www.mobygratis.com/film-music.html>

Just some general tips on recording and using music and sound effects:

- Make sure you understand the license. One could end up with legal problems if the license is not fully read and understood.
- Rather try to download free "royalty-free" music. In this way you are not obliged to pay a cent.
- Give credit. Even if this is not compulsory it is good etiquette and won't hurt.
- If there is a donation feature consider dropping a few bucks into the old hat.
- Send an email to the composer or creator letting him/her know where to find the final film or project containing the pieces or effects.
- If you are recording or composing your own music consider sharing them with the rest of the independent filmmaking community.

Visit <http://www.vtkproductions.com> for useful links and filmmaker downloads!