

## Recording

It is an important and popular, yet misunderstood fact that recording must be done with high quality equipment to be good or usable.

Just as with mixing, clean mixing and knowing your EQ and compressors is a good start, but nobody ever said that breaking the "rules" were not allowed.

Understanding what is good recording practice never harmed anyone, but only when knowing good practice can one take advantage of it and twist it.

Ben Burtt, one of the greatest sound designers of all time, made it clear to me, when he was telling about how he created certain sounds.

Before that I believed in authentic audio and it was just a matter of using the right equipment, which would then lead to good authentic recordings which could then be used with just as convincing results and things that were manipulated to death and not authentic where basically cheating and not real. I guess I was a bit of an audio ecologist then, by accident, because I certainly do not agree now.

Ben Burtt, has shown that spaceships are microphones out the windows of cars, lasers are electric cables which short circuit, smashed tv's, recorded, re-recorded, filtered, re-recorded and then added some magic.

Realise that as a sound designer, knowing the equipment and how to use it, allows you to know what your recording might sound like and by knowing that, or thinking of that to begin with, will allow for great sounds to be created.

*In the chapter on Rassool and A Mothers Inferno, you can see some of my personal examples of sounds created for small student game productions, during two of my three DADIU productions (Danish Academy of Digital and Interactive Entertainment).*

Today, digital recordings are storing the data given the system, because of the frequencies and waves caused by the sound in the physical world.

A translator is needed, a converter. whenever a microphone or other type of transducer is hit by a sound or wave, the signal goes from the physical world into the electrical world.

Recording this electrical signal allows us to store it and re-play it. With modern computers we can then twist and turn it to death of countless manipulation..

A digital recording, converts the electrical signal into information about where the waveform is right now, which then allows for storage and playback as well.

There are many discussions on where a recording should be placed in the digital spectrum, and some believe that taking use of the full bit depth and recording at max volume is the right way to do it, making sure it doesn't distort of course. Going above 0dB FS..

Some believe that when recording at 16 bits, this is necessary, but when recording at 24 bits, you should record at an average of -20dB FS. This makes sure that you have plenty of headroom before distorting and you still get the high quality of the 16 bits.

I believe that we can then argue and probably agree upon, that as high quality a recording as possible, is the way to go.

Not saying the 32 bits and 96 or more kHz should be the way forward, but recording in formats like

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that, makes it easier not to distort, get more quality in terms of frequencies and tiny details in your recording, and you can always after the recording format the sound to a lower format, which would be pointless the other way around.

Personally I prefer to record at 24 bits and 96 kHz, because I believe that such a high quality recording, when manipulated, such as being stretched, lowered in pitch, hightened in pitch etc. Etc. Makes better results, and then saving it in the format needed for your game engine or 48 kHz and 24 bits for film post production, is a good and healthy approach.

I not only believe it, I can hear it as well.

And using your ears is of course as always the best debugging tool we have.

But aestetically there is no need for all this, because if you are seeking an authentic sound of the old school – where low quality is needed, then recording at high quality and trying to reach the sound of low quality may be more difficult than at first glance.

Recording at old tape recorders, having magnetic tapes stored in moist surroundings for years before playing them back again, may have an aesthetic purpose and may give you just the sound you need which the high "quality" digital recording might not have given you.

Don't be fooled by high quality microphones, they only sound good if used properly, a 10.000 dollar microphone may be equally crap compared to the cheap 1 dollar microphone you found in your cereal package one morning or the microphone in your phone, can be of great use if you need this type of quality or audio perspective, instead of as said before, recording at high quality and then reducing the quality.

Of course if you are not sure, then the high quality recording is better, because it can be manipulated which the low quality one cannot as much, so knowing the sound aesthetics of your recording devices is a good starting point.

When recording, take into consideration which microphone you are using, as just written.

But also the characteristics of the microphone, does it have a low cut? Or a padding option, which allows for louder sounds to be recorded without distorting the microphone or digital system itself.?

When recording a certain sound, think of if this is really the sound you want.

The sound of a jet taking off, may sound great, but not depict the type of jet taking off sound you are seeking – so think of different recordings, that may sound similar but yet very different.

One of my many projects throughout my career, was my Ba. Project of electronic music composition. I decided to find some aestetically pleasant sounds within the human body when being manipulated, as well as in animals.

I did some quite weird things to get these sounds, but the results where beautiful. But the first thing taken into consideration, was of course, how do I actually record these sounds?.

I swallowed a DPA 4060 microphone, hooked up to a Sound Devices 788T and took a ride on the bus and the metro here in Copenhagen. The results are actually the sound of the bus and metro, through the filter of my own human tissue. The sounds are very drone like and muffled, but yet they contain sounds from all over the spectrum and after the recordings, I decided to experiment with their pitch, reversing them and the results where some really nice quality drones.

I created a stereo microphone out of a pair of iPod headphones, putting them together with some

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plastic kitchen wrapping and stuck it up my rectum, and connected the headphones to the input of my Zoom portable recorder, and took a walk on the ferry between Aarhus and Sjællands Odde in Denmark, a 1 hour out ferry trip recording the sounds of the ferry from my inside. Most of the recording is useless, but some of it reveals some very very beautiful sounding drones, some which I later used in some of my productions.

I wore a pair of Sennheiser HD-25, and set them into the microphone input of my soundcard and went to the dentist.

I created a small piezo disc "microphone", and with some gum attached it to the upper part of my mouth, and then pressed record and had the dentist do his work. Creating some really high pitched sounds and some weird noisy sounds from the touch of the gums.