



## TECHNOLOGY REPORT ON MICROPHONES

Trish Levido, Feb 2013

One basic rule of recording is that the recording cannot possibly produce better sound quality than the microphone is capable of delivery. Recording quality begins with the microphone.

The OHAA NSW current recommendation is for the Rode M3 microphone (\$149 Turramurra Music up to \$240r.r.p.). After considerable research this microphone is still considered to be excellent quality for the cost.

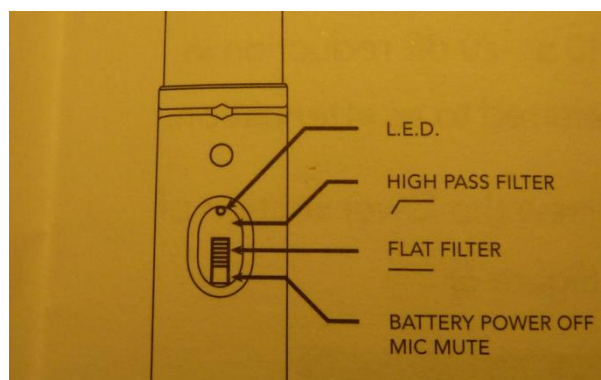
The Rode M3 is a condenser mono microphone with a cardioid pattern to record.

This microphone can be powered from an internal 9 volt battery which you would insert before use; if you have a Zoom H4n or a Tascam DR-40 or other recorder offering phantom power, then a battery is not necessary, unless you prefer not to use up the recorder's power. The amount of power to power the microphone is extremely low, however. Whether inserting a battery or using phantom power, the microphone has to be switched on with the slide switch on the handle near the top of the microphone. When using a battery to power the microphone, the L.E.D. light above the slide switch will give a single flash of about 1 second to indicate that the battery is good and the microphone is working. This light only stays on when the battery is running low. Otherwise the light is not illuminated when the microphone is in use, nor does it come on when using phantom power. NOTE: In the bottom position of the slider, the microphone does not work because it is muted when using phantom power, or if using the internal microphone battery, the battery is switched off.

(For those using the Zoom H4n scroll to Input settings on the menu >select phantom power > 48v before the interview). If you turn the Zoom H4n off and back on again, you will have to reset this to 48volt as it is not saved as a default setting.

Pad Switch. This is located behind where you would put a 9 volt battery in the handle of the microphone. There is a switch with various options - leave this set at '0'.

On/Off Filter switch, found on the handle. Normally you would use the microphone with this switch in the middle position ('Flat Filter'). In some circumstances, such as where you are getting interfering low frequency sound such as traffic noise or loud air conditioning noise, etc., you may find you get better results by putting this switch in the top position ('High Pass Filter'), which will lessen the impact of that noise. In addition you may find with the High Pass Filter that you have 'clipping', also that the tonal characteristics will be affected by this, so it is wise to do a test recording then listen to the sound both with the Flat Filter setting and the High Pass Filter setting,



before deciding which is appropriate.

The advantage of two table mounted 'shot gun' or hand held type microphones for an oral history is that you can put the microphones as close to both the interviewer's and the interviewee's mouth as is physically comfortable – usually about a hand span away from the mouth. This usually gives the best quality recording. Once the microphones are placed in the best possible position, the Zoom H4n and the Tascam DR-40 will allow you to raise or lower the recording input volume on the individual microphones by selecting whichever mic. (1 or 2 on the front of the recorder) and then using the record level, '+' or '-' on the right hand side of the recorder. It is very easy and unobtrusive to slide this up or down according to the input volume during the interview. This can be advantageous when you start off with a timid interviewee who tends to speak in a soft voice and sits as far back from the microphone as possible, at the beginning of the interview. As the interview progresses, the interviewee soon forgets that the microphone is in front of them (as you are making eye contact with them) and before long you will find that the recording volume may have significantly increased and even started to 'clip'. This is evidenced when the recorder 'flashes' with either '1' or '2' on the recorder, to let you know that your volume input is too high. There is no need to move the actual microphone during the interview.

In addition to 'shot gun' hand held or table mounted microphones there are 'lavalier' or 'lapel' microphones and you may be tempted to use these. These are not recommended for oral history according to trusted websites such as <http://transom.org/?cat=6> who say: 'avoid the temptation to use lavalier microphones, at least for interview recording. Clipped to a lapel, or hanging around the neck, the lavalier microphone is in a less-than-ideal position for good voice pick-up. When they turn their heads you can lose volume'. Additionally, if the subject is moving around, clothes and cables will likely add unacceptable noise. Also, this type of microphone can easily be damaged due to interviewee suddenly standing up or moving around.



Also consider the use of a windscreen, pop filter or sock when recording, particularly when recording outside. These filters sometimes come as an accessory with the purchase of a good quality microphone or recorder and are necessary to achieve a good quality recording when you are faced with background noise such as air-conditioners; old motors (e.g. refrigerators); traffic; wind or other noises such as popping sounds (caused by the sudden intake of air with the microphone being too close to the speaker's mouth) during an interview.

The 'cardioid' pattern of the Rode M3 microphone does pickup sounds on the sides as well and could therefore be used as a single mono microphone, although this is not recommended by OHAA NSW. The National Library as well as the State Library recommends the use of two microphones for oral history recording.

Finally, as found in [www.oade.com/Tapers\\_Section/faq-mic.html](http://www.oade.com/Tapers_Section/faq-mic.html) One basic rule of recording is that the recording cannot possibly produce better sound quality than the microphone is capable of delivery. Recording quality begins with the microphone.

For more information on audio-basics, recording equipment and microphones:

<http://digitalomnium.com/>

For a really good in depth description of all Microphone frequently asked questions you need go no further than: [http://www.oade.com/Tapers\\_Section/faq-mic.html#C2](http://www.oade.com/Tapers_Section/faq-mic.html#C2).