



## Tutorial 04 Location Recording 101 The basics to recording sound in the field

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### Overview

Audio equipment can be very expensive, although in recent years new technology has made it much cheaper than in the past, as well as improving the quality of the gear. Generally I would spend at least half my budget for equipment on a good microphone. This is the point at which sounds are captured and skimping on costs here can really make a difference later. However getting out and learning to record sounds is just as important as having good gear, so until you can afford to buy a super microphone starting with a handheld recorder with built in microphones allows a you to instantly gain experience in location recording.

Figure 1. The R09 made by Edirol Roland

The R09 is a fairly sturdy handheld stereo digital recorder. It runs on two AA batteries and uses SD memory cards for storage. It has various useful features and is a good entry level recording device.



It is important to start by understanding what factors can affect sound recordings. The two main problems are wind and vibrations. Wind can be a big problem when recording outdoors. Not being able to use a good recording of a truck because of a big rush of wind can be disappointing, but it can also be avoided. Some devices come with their own wind protectors, and it is also possible to buy special wind protectors, although these can be expensive. It is also possible to create a simple home made wind protector, regardless of what recording device or microphone you are using.

Go to any material shop and look through the furry materials they sell to make soft toys. You want to find one that has quite long fur, but that has thin backing. If you have a lot of choices or are really not sure, then take your recorder with you and wrap a bit of each of the cloths over the microphones and speak into the mics recording your voice (For each cloth state the type of cloth you are speaking through so you can identify the best choice when you listen back to the recording). The cloth that allows the clearest recording through but that still has long fur is the best choice.

Buy a small patch of appropriate cloth then fold it and sew up two sides to make a small pocket. Then slide the pocket over the recorder to create a cheap wind shield fluffy cover. You can cut holes in it to access controls and display screens, but be careful to leave the microphones with a good cover against the wind. This could work equally well over an actual microphone, just make a smaller pouch.

Figure 2. R09 inside Rycote fluffy

This windshield is a general fluffy windshield designed for a microphone. It is also the perfect size to slide the entire R09 inside. Once recording levels have been set and the device is recording it can be slid into the cover to protect the microphones from unwanted wind noise.



The issue of vibrations is another potential problem. This can be reduced either by holding the recorder carefully, or placing it down somewhere when recording so its not moving. The device could also be attached to a camera tripod, or a proper microphone shock mount if you have the budget. Other tutorials on advanced recording techniques will go into more detail regarding noise reduction and other recording equipment.



Figure 3. R09 with external Shure Beta 58A dynamic microphone

The R09 can also receive a signal from an external microphone through the 15mm mic input plug. This allows for specific microphones to be used for unusual circumstances.

## Preparation

There are various aspects to location recording that are important and useful to remember. These are in no particular order.

### 1. Before you go out check your equipment.

- Are your batteries fully charged, or at least charged enough for your purposes?
- Do you have extra batteries just in case?
- Do you have space on your recorder? Be it tape, DAT, memory card, HD or whatever.
- Does your mic need a battery for phantom power? Is it charged?
- Do you have everything you are likely to need? Micro phone, cables, phantom power supply, batteries, recorder, carry bag, microphone stand, headphones, wind-shield.

These might all seem so amazingly obvious, but at some time or other I have forgotten to do all of the above. Seldom more than one thing at a time, but if you are doing a professional session and you are conscious of schedule, recording wish list and how to get where you are going it can be really easy to forget any number of things. If you can afford to have a set of headphones dedicated to location recording that just sits in your kit bag then that's great. Most of the time I share mine between location recording and using for my laptop. It can be easy to gather everything together and head off to find on location you forgot your headphones. It can be just as easy to forget any of the other items. Always carrying extra batteries in your kit bag is a great idea. I have a horrible habit of leaving my microphone powered on and so the batteries inside for phantom power usually only last me one trip.

Minimising what you need to take with you is one of the best ways you reduce the chance of forgetting gear. A simpler setup can often be much easier to deal with in all ways. Following are the two main setups I have used for location recording just to illustrate the difference.

## Old setup

- Relevant mic in shock mount.
- Cable from mic to phantom power box
- Phantom power box
- Cable from phantom power box to DAT
- Portable DAT
- Headphones
- Carry bag for DAT
- Extra batteries for DAT x 3
- Extra batteries for phantom power box
- Boom pole if necessary
- 4 x DAT tapes to get 6 hours recording



Figure 4. Old Recording gear setup.

The phantom power box attached to the boom pole weighed about the same as the Zoom H4 that is my current recording device. The black bag contained the portable DAT recorder, extra batteries and other pieces of gear. It weighed approximately 5 kg.

## New setup

- Relevant mic in shock mount
- Cable from mic to Zoom F4
- Zoom F4 mounted on boom pole
- Headphones
- Two extra AA batteries for Zoom
- 1x 4 gig memory card for 5.5 hours recording



Figure 5. Setup as of April 2009

The entire recording device, cables and microphone are all attached to the pole. This is not only lighter to carry but much easier to maneuver and makes running after trains or animals or recording while rollerblading actually possible.

The difference in weight is about a 4:1 ratio in favour of the new gear. Not only is it smaller, lighter and easier to wield, but I have less things to take and so less things to forget.

### 2. *Take everything you need, nothing else.*

Again this gets a little easier to determine with some experience. I used to carry round rolls of gaffer tape and a screw driver and a torch and lots of other stuff in an attempt to counter any possible circumstances that might arise. This is a good approach in theory, in practice it means you're loaded down like a pack mule. This is problematic for two reasons. Firstly you get tired and frustrated easily. Going that little extra to get the perfect sound seems like a lot more effort when you are trying to carry an entire studio's worth of gear on you. Secondly, and I think more importantly the more stuff you are carrying the harder it is to move without sounding like a military band on the march. Clunking, clinking or squeaking really doesn't help you when you are trying to record. Again, it might seem obvious, but I say this because I have gotten home to find my recording all have an ever-present background jingle from some piece of kit or extra strap dangling from my kit bag.

It is possible that gaffer tape and pliers might be useful if you are setting up to record a live gig and you need to position mics in unusual places in a hall. In that case, you are probably taking a fair bit of gear anyway and might even be driving. So having your repair kit with you is probably a good plan. But when you are going out and walking around simply to record at a particular location, keep the gear simple or plan ahead for what you need.

### 3. *Be patient. Be prepared.*

This is probably one of the most important things to consider when recording and there are a lot of reasons why patience pays off. Firstly you need to be a little patient in getting out to the location in the first place. Do some planning, have a think about what you are recording, what environment you think you will be in and how long you expect it all to take. Planning for a recording session is basic project management and it is just as important and often just as difficult as any other project. Plan your schedule, your travel route and how you are going to go about recording your material.

Waiting for a right sound can make all the difference between an average day and a great day. Don't just grab the first bird call you hear. Give it time, maybe the thing you are wanting to record is going to land on your head, or maybe the guy in the background mowing his lawn is nearly finished. Waiting for the right moment is as important, if not more so, in sound recording than it is with photography because there can be lots of sources of contamination.

Once you are recording, be even more patient.

As a general rule I will try and record at least a minute or two of material even when I think I have perfect circumstances. As an example, for a frog sound that you need 5 seconds of, that is being generated by a single frog with no background interference; record at least 60 seconds of material. Its much easier to cut down 60 seconds for the perfect 5 second sample than to find out there was a fly buzzing in the left channel and you need to go out and do the whole thing again. Also think of what you might possibly need in the future. When you have the perfect frog, record as much as you think you might need for the next ten projects with frogs in them (not to mention anyone else who might find your 60 seconds of perfect frog useful).

### Self Control

Stand still. No really, stand still, completely, for 120 seconds. Go on, try it, right now. Stand up, get a watch, and stand completely, absolutely, totally still for 120 seconds. It's not as easy as it sounds, but it can be really important when recording. For example: perfect frog sound, seven seconds into recording. You shift your weight just to make yourself a bit more comfortable. Two things could happen. Not only could you end up contaminating the recording with the sound of the grass under your feet being crushed as you shift weight, but to a frog underground it will sound like Imperial Walkers on the north ridge. LOUD! Having the patience to stand absolutely still for several minutes can be really hard, but it can also contribute towards getting a really good recording.



Figure 6. Positioning

This is a very good example of positioning issues. The shotgun mic is mounted on a tripod and placed next to the target to record impact sounds. This is for obvious safety issues.

The R09 is being used to record the closeup sound of the bow being fired at the target. This position was chosen to avoid distracting the archer, it was however not the best position as his body interfered with the sound of the bow being received by the microphone. I subsequently repositioned myself in front of the archer after making sure this would not cause a distraction.



When recording, what you are attempting to do is capture the source of your desired sound completely, and most importantly, cleanly. Any other sound that is generated at the same time is potential contamination. It may be possible to edit out by trimming, or filter out by EQing the raw material, but it is always best to record a beautifully clean sample in the first instance if possible (this can save hours of time in post production). This is also one of the hardest things to do in location recording. In a studio it is fairly straight forward to generate the sound and record it in isolation. In the real world it takes a bit of skill, a lot of patience and huge amount a sheer good fortune to get a clean take. If you know that you yourself are adding no extra possible sounds to the environment then it is one less thing to worry about. On that note it is worth mentioning that good quiet sneakers are a good choice for footwear, and soft cotton or woollen clothing is also a good choice. Nylon, leather, PVC and similar clothes can generate a lot of noise when you move around in them. Also leave your loose change at home and keep your key chain as simple as possible.

There are several useful guidelines that can improve the process for recording out of doors.

## Position

Look at your target in the same way as if you were going to take a photo of it, but in this case you are not looking to frame a nice picture, you are looking to frame a good sound. Most microphones have some level of directionality, that is, an angle where they pick up a signal the strongest, and a dead area where the signal will be weakest. Approach a sound source and point the microphone at the strongest point of the sound source; also position yourself so that any unwanted sounds fall into the microphone's dead zone so they are less likely to be recorded. This might be other sound sources, wind or even your own footsteps if you need to be moving. Also remember that the human body is quite good at absorbing sound, if you place yourself between the microphone and any unwanted sounds, you can reduce their impact on a recording.



Figure 7. Recording quiet animal sounds close in Alpacas in Neerim South Victoria



Figure 8. Recording a slow moving vehicle with mid volume  
VA 1956 Diesel engine at Queenscliff Victoria

## Proximity

It is also important to know how close to stand to a sound source. The target sound needs to be a good strong signal; you should set your input levels so the target sound is very strong. If the target sound is recorded too low, later when you increase its amplitude in the sound editor you will also be increasing all the background noise as well. Try and record a signal that is strong in your target sound and low in all other sounds. Getting as close to the sound source as is practical and safe is a good way to achieve this, but also be aware that the sound may change. A truck that is idling will get much louder when it starts to move, don't set the input levels so high that they cannot increase without distortion if the sound alters. If the sound source is something that is constant and that you know wont change, like a running river, then it should be safe to set the input levels nearly to maximum. Also realize that sound can change dependant on your position relative to them. For a good example of this try recording a car; the sound near the exhaust pipe will be quite different from the sound near the engine, or the sound inside. The closer to a running engine you are, the more you will hear individual details such as the movement of the fan belt and other mechanical components. As you move further away these sounds blend together more.

## Input levels

Setting input levels can also depend on knowing exactly what it is you want to capture. For example, standing on the roof of a building recording a passing thunderstorm. This is most probably an opportunistic recording session unless you are very well organised and have been chasing storm warnings and weather patterns. More likely, a crack of thunder alerted you to an opportunity to record some good material. There actually two opportunities in this scenario and sometimes they can be mutually exclusive. Should you want to capture as much material as possible at a good level you would wait for a general crack of thunder and adjust your input levels appropriately to capture a good strong signal that is just below peaking.

Although the fighter plane in the next image was far louder than the diesel engine in the previous image, it was less of a risk to record as it was not going to move and its output level was not going to change. The engine, however, came from a distance where it was fairly quiet and passed within a couple of meters of the microphone. As a result the levels altered considerably. These factors need to be considered when thinking of position, proximity and input levels.



Figure 9. Recording a stationary vehicle with extreme volume  
USAF Super Hornet at Avalon Airport Victoria

This will allow you to record a good series of thunder samples as the storm moves across your location and you can record the most of the material available. If however you have a very rare event of a crack of thunder going off directly overhead the sheer volume will completely max out your equipment and you will miss the opportunity to capture an incredible sound. The alternative is to set your levels far lower on the chance that the giant thunder crack may occur and as a result all the other material is captured at a much lower level which may result in noisy samples when adjusted at a later date.

The example doesn't need to be thunder, it applies to anything. Setting levels to capture a good strong signal from an ambient event risks anything of greater amplitude being lost through distortion. Continuously altering the levels to try and capture both, in my experience, tends to be the worse choice as often the material for both elements is unusable. Using two recording devices at different levels can solve this problem if you have the budget, but it is also difficult to monitor two devices constantly.

If you are trying to capture stereo recordings then two devices is probably a good alternative. If a mono recording is acceptable then assuming your device supports this function you can set a different input level for both the left and the right channels. Having a cable that splits from a mono microphone and inputs to two channels of different input levels allows for soft sounds to be recorded at a high level, while the second channel records a duplicate signal at a lower level, so should a loud event sound occur the lower input channel should capture the sound without exceeding the input capacity. The final option is to decide which element you need to record and set the levels appropriately and stick to them. Other material that is either too soft or too loud will be discarded when the material is edited for use.

Trial and error and experience will help a lot here. Recording many different events under different circumstances will greatly increase your understanding and experience with recording.