

I'm Doug Fearn and this is My Take On Music Recording

Most of us record in a studio, or some improvised space at home that we have set up as a studio.

But there are occasions when leaving your studio and recording on location is necessary, and other times when it is desirable.

I'm not talking about the gigantic recording vans, which are essentially a control room on wheels. Most of us do not have access to anything like that. But we might haul some of our gear to a performance venue, or perhaps a place with nice acoustical properties, in order to capture a concert or superior sound for a project or for an overdub.

An example of the latter would be going to a larger space to record horns, strings, or a choral ensemble, which would not fit in our usual recording space, or, even if you could fit them in, the sound would not be appropriate.

I have had a recording studio since 1969, except for a few years when I started the equipment manufacturing business, and in the years before my studio opened. During those non-studio periods, I did mostly location recording. Or I took projects to another studio.

I learned a lot, recording on location. And although it can be a lot of work, the results can be very interesting and rewarding. I hope to give you some practical advice on recording outside the studio, which may be helpful to you.

For four years, from 1965 to 1969, all my recording was on location. I lived in a small apartment, and soon learned that it sounded lousy. It was impractical to do any significant acoustical treatment, and besides, I had neighbors on four sides.

Recording back then required moving a lot of large, heavy equipment. I had an Ampex 350 tape machine that was originally mono but I converted it to stereo. I used vacuum tube mic preamps and a homemade mixer when I needed more than a pair of mics. For simple recordings, I could use the mic preamps in the Ampex machine, which sounded pretty good.

My first good pair of condenser mics were Neumann KM84s, but I also had RCA 44 ribbon mics. Add to that some large boom stands and the long cables from the mics to the preamps and you soon had quite a lot of stuff to carry. I could fit this all into my Volkswagen beetle, although there was no room for a passenger and not much room for the driver either.

With that gear, I would travel to the location and set up for the recording. Soon, people started paying me to do this, and I had a wide variety of projects to do. Most were musical performances, but others were lectures or plays, and even once, a boxing match. Other oddball projects included dedication ceremonies, book readings, weddings, protest demonstration speakers, and street performers.

It's difficult to imagine this wide variety of jobs today, when studio-quality digital recorders fit in the palm of your hand, and even a smartphone can provide decent quality. But back then, if you wanted something recorded, you had to use expensive, heavy equipment, and know how to use it. Or you hired someone who had the gear, and the skills, to do it for you.

The various venues were endlessly fascinating to me, and taught me much of what I know about acoustics. Some were terrific spaces with excellent reverberation characteristics. Most were not, and that provided me with challenges to get things to sound as good as they could.

I recorded in concert halls, churches, auditoriums, sports venues, community spaces, outside, and even a few at people's homes.

One thing I learned was how to manage the direct-to-reverberant ratio, through mic placement. Is it too reverberant? Move the mic closer to the source. Too dead? Move the mics farther away. In a lousy acoustic space, you had no choice but to close-mic everything.

If there was a bad reflection from a hard surface in the space, use the mic directional characteristics to minimize that. That's where I learned the power of the ribbon mic side nulls.

Later, after many years of studio ownership, I sold that facility to focus on the equipment design and manufacturing business. I never stopped recording, however. But for a while, it was all location recording, until I built my present studio.

Some of the more memorable spaces included a huge sports arena that was sometimes used for musical performances. The stage was in the center and the space had a very long reverberation time of many seconds. It was nice reverb, too, and it was well-suited to some kinds of music. It made an enormous-sounding record, but it also tended to muddy-up everything.

Another project, a solo piano recording, was in a community center outside of New York. Usually I had an opportunity to scout the location and get a sense of what it was like and formulate some ideas on how to best use the space. But on this project, I did not see the space until I arrived.

I was immediately discouraged by what I found. It was a large, rectangular room that could hold hundreds of people seated at tables. The floor was concrete and the walls were painted cinderblock. The ceiling was concrete. Can you imagine a worse place to record?

Fortunately, I had an hour before the performance to try some different mic'ing techniques while the artist was rehearsing. I found my Neumann SM69 stereo mic worked best, using an X-Y pattern rather than my usual Blumlein. The mic had to be closer than I would normally place it in this situation – about 6 feet from the piano.

Actually, the recording sounded very good – one of the best piano recordings I had ever heard. I did not expect that. It sounded pretty awful to the audience, but the recording was spectacular. I learned that no matter how long you have been recording, there are still surprises, good and bad.

Equipment-wise, location recording is much simpler today. You might get by with just a laptop, a converter, a pair of headphones, and the mics.

I never liked being in the same room as the performance while recording. That setup has *some* advantages, like being able to talk to the performers easily and naturally, and short mic lines. But those advantages are overwhelmed by the fact that you really cannot tell what you are getting until you play it back. Maybe not a terrible option if it is an actual session, but it can be disastrous if it is a performance and you only have one shot at getting it right.

My preference is to be far enough away from the performance that I cannot hear the music. That means in a separate room somewhere in the venue. I have done many location recordings in churches, and the kindergarten always seemed to be where I end up. I think they purposely locate a church kindergarten far enough away that an unhappy child will not interrupt the service.

Monitor speakers or headphones? Ideally, you would have a space with decent acoustics to monitor what you were getting and you could use near-field speakers. That isn't always going to happen, so sometimes I use just headphones. It helps if you have a good idea of how your headphone sound will translate into speakers.

Now that you are set up far from the performance space, you have to run mic cables. And that can be a major pain and very time-consuming. Most of the location recording I've done did not require many mics. Depending on the situation, it might be as simple as a stereo main pickup. To that I might add a pair of spaced omnidirectional mics to capture more of the ambience of the space, if it was a good-sounding room.

My usual setup for the past 30 years or so has been a Blumlein pair of ribbon mics about 20 to 30 feet from the performers, depending on the size of the venue. To that, I add a pair of B&K omni condensers along the outer walls and about halfway back in the space. That is usually not good as a main pickup, although sometimes it sounds great. Mostly, I use the omni mics to blend in a bit of spaciousness, if needed.

An alternative I have used for the "room" mics is an X-Y pair, far back in the venue, and aimed at the back of the space. I want to be at least 30 feet from the back wall, so this arrangement is not practical in many locations.

Sometimes you need spot mics, especially if the performance is not well-balanced to begin with. This isn't always due to inexperienced performers. Sometimes the "stage" area is too small to accommodate the performers and they have to spill out beyond the central area. Or the leader may want an odd arrangement that looks better to the audience, but creates balance problems. An example would be an orchestra behind a large choral ensemble. That features the singers, but the orchestra sound is muffled by the wall of people standing in front of them. Why anyone would think this is a good idea is beyond me, but it is typical of the challenges you might face.

I like to use ribbons for the spot mics, although they can be too large in some situations and then a small-diaphragm condenser may be a less-intrusive alternative.

Remember that your spot mics are going to have a large time and phase difference from your main pickup. You cannot set up like it was in the studio, with mics on every instrument or section. See what the main pickup is lacking and only add the mics on those sounds that are getting lost.

It may be possible to slip the spot mic tracks back in time to match the main pickup, but I have never had success doing that. It never sounds right to me.

In the mix, you will have to keep the level of the spot mic down. You want just enough to augment the main pickup. Too much of those mics will ruin your recording. It's tempting to blend too much in because those mics often sound really good on what they are picking up. It's much easier today with many tracks available, so you can make balance decisions later. In the old days, those decisions had to be made at the time of the recording, with no way to change it later.

Most clients say they want the recording to sound just like it does to an audience member. You have to interpret what they say they are looking for and do what is necessary to make a compelling recording. A recording made from a seat in the audience never sounds good to me. Most often, optimum mic placement will be 8 to 15 feet above the floor.

If you are looking for a studio type of sound, you will use multiple, close mics, and that means a lot more mics, stands, and cable runs. Generally not practical in a performance, but works well for a string or horn overdub in a nice acoustic space.

Sometimes you cannot place mics where you want them, because there isn't a location for the mic, or it would interfere with the audience or block their view. Hanging mics from the ceiling can work well in this situation, but it can be a lot of work. Don't forget to bring a big ladder.

Now it's time to run your mic lines. I always start at the mics and route the cables to the equipment. That way, any extra cable will not create a tripping hazard for the audience and performers. That said, I usually coil at least a few feet of cable under or around the mic stand to allow for a bit of movement, should it become necessary.

Giant snake cables with many pairs might seem like a good solution, but those cables are thick, and you may run into problems if you have to run the cables through or under doors. And they are difficult to protect from foot traffic and are likely to be a tripping hazard.

I usually used an assortment of 2-pair or 4-pair cables, which are much easier to manage.

Be sure to bring miles of gaffer tape. You will need to tape down your cables anywhere someone might trip over them. And run your cables where people are unlikely to step on them. That cable may not fail that day, but stepping on any mic cable will shorten its life.

I prefer to use very tall mic stands, which give me a range of heights to place the mics. Most of those stands have a tripod base, which can be hazardous to people, so put some bands of brightly-colored tape around the mic stand legs to make them easier to see.

Sometimes you can block off a row of seats to keep people away from your stands. If you can't do that, then, worst case, someone will get hurt, but a more likely problem will be people hitting your stands at a

bad moment. That will ruin your recording. And don't let any part of the stand touch the seats. Use shock mounts for all mics, especially if there is a wood floor.

And you do have business liability insurance, don't you?

"On location" usually implies a public space, which is likely to be in a location that the public can easily reach. That means streets and noise. There is only so much you can do about that. I've had recordings ruined by a pack of motorcycles roaring down the street. Recording in the evening may be quieter if you have the option.

Even in a quiet location, if there is an audience, they will make noise. Even if you or someone else makes an announcement that the performance is being professionally recorded and please keep quiet, they won't be. It seems someone will always cough during the quietist passage.

And if it's not coughing, it could be their cellphone ringing, pinging, or even vibrating. HVAC can also cause noise problems.

Challenges for sure.

But not every location recording is a performance, so you might be able to record at a quiet time of the day or week, without an audience.

I once did a small choral ensemble recording in a church in Valley Forge National Park. It was in the evening and the park was closed to visitors. The church was very quiet inside and we had no noise issues at all. There was no audience. It was strictly a recording session. That's the ideal location recording situation for quiet music. You do not often have those kinds of conditions.

Ideally, you would be able to set up everything you need to record and have the performers play for you, perhaps at a rehearsal. That's usually not possible. Even if you could experiment during a rehearsal, it is unlikely that you could leave everything set up prior to the actual recording session. And it might also be a security risk for your expensive equipment.

But if you can set up, and experiment, but still have to take the equipment down, take some pictures so you know how to put things back where they were. If you are lucky, there will be a rehearsal just before the performance, where you might have time to fine-tune your mic placement and get a sense of the levels. As you probably already know from studio recording, the actual performance is likely to be 10dB louder than the rehearsal, so set your levels accordingly.

Well, you're all set up, everything works, it sounds good, and you're ready to record. What could possibly go wrong?

Your AC power, for one thing. If you are set up in an old building, the AC wiring may be in bad shape. It could even be dangerous. There could be lots of electrical noise from defective wiring. Bring plenty of extension cords, heavy-duty, grounded ones, so you can search around for a quiet source of power. Old buildings often have ungrounded outlets, so bring an adapter.

And make sure your AC connection is secure. Tape the plug in place, if possible. And then put a chair or table in front of the outlet to protect the connection.

Bring plenty of backup gear, too. I never made a location recording that did not have a second recorder capturing the performance. In the old days, it was a cassette machine backing up a reel-to-reel machine. Later I used a DAT machine instead of the cassette deck. These days, a portable digital recorder will give you a high-quality backup.

If you can, run a couple of extra mic lines, just in case you have a cable problem at the last minute. And bring some extra mics. Microphones are pretty reliable, but if the venue is outside, or very damp, your condenser mics may be noisy from the high humidity. Have a ribbon or dynamic mic ready to substitute if there is a problem.

And always bring along a trusted second engineer. Setting up something like this by yourself may not be practical, given the time you have available.

Even with all those potential problems, recording on location can be very satisfying and interesting. Some of my favorite recordings of all time were made on location. You may be in a place of exceptional acoustics. And often a performance is enhanced by the presence of the audience, even if they aren't as quiet as you would like.

Another appealing aspect, at least to me, is that recording a performance is a once-and-done thing. There are no re-takes, overdubs, or editing. That will likely result in some less than perfect performance elements, but the energy of a live performance often makes that irrelevant.

Be prepared for a very tiring day, especially if you have to park far from where your gear needs to go. At least you're not lugging big reel-to-reel machines these days.

This is My Take On Music Recording. I'm Doug Fearn. See you next time.