

**DISC MAKERS®**

# RECORDING LIVE MUSIC



**EXPERT ADVICE TO RECORD YOUR GIGS**

Written and edited by Andre Calilhanna  
with contributions from Drew Raison and Barbara Adams



Affordable, high-tech recording equipment has changed the face of the home studio, making it possible for musicians and enthusiasts to produce recordings at home that would have been impossible – without significant monetary investment – just decades ago. Of course, having access to equipment does not equate to having the savvy, experience, and acoustic space necessary to record a great product, but the barrier to entry to record demos and even release-worthy home recordings has been significantly lowered by continuing improvements in technology.

The same is true for remote recording. Even in the early days of accessible recording technology – think the ADAT and early portable consoles – the prospect of recording a live show with any degree of control often required multiple recording units chained together, hundreds of feet of cable, a bulky mixing console, and more. This equipment, while a leap forward in portability and ease of use, still took up a lot of space, making transport and set-up in a remote location a challenge.

---

**High-tech recording equipment is smaller, more powerful, and more portable than ever. It is theoretically possible to arrive at a gig with a thumb drive and leave with a pristine stereo recording of your performance.**

---

High-tech recording equipment is smaller, more powerful, and more portable than ever. Combined with the increased use of digital consoles in live music venues, opportunities to record remotely at a live venue or non-studio space are plentiful. It is theoretically possible to arrive at a gig with a thumb drive and leave with a pristine stereo recording of your performance.

Let's qualify that last sentence. Note it says, "theoretically possible." While technology has made it much easier to record remotely, there are many things you'll need to do, and expertise you'll likely need to rely on, if you're looking to produce a quality live recording – particularly if you're looking to record for release.



# IT STARTS WITH A FEW QUESTIONS

## What are your plans for this recording?

Is this to be a CD release for sale online and at future shows? Are you giving the recording away to fans as they exit the performance? Are you going to make this available as a download after the show? Is this for pre-production purposes for an upcoming studio recording? Are you archiving your set to analyze your performance and critique internally? Your intentions for the final product will factor heavily into your equipment needs, choice of location, and the preparation required for your recording.

## What is the arrangement of your act?

Are you a solo acoustic guitarist with one instrument and one voice? A three-piece power trio? An eight-piece band with horns and back-up vocalists? The more complex the arrangement, the more sophisticated your needs will be in regard to equipment, set-up, and expertise.

## What are your options for a venue?

Are you playing in a coffee shop with your own PA? Are you the third of five bands on the bill? Are you headlining a show in a large room? Do you have access to multiple nights in the same venue? What kind of console does the venue have?

The answers to all of these questions will lead to others, and the purpose of this document is to help answer some of those questions and help you plot a course to produce the best live recording possible within your means.

To that end, we've enlisted the help of two Philadelphia-area music industry veterans to contribute their thoughts and expertise to this guide:



**Drew Raison**

Co-owner of [Philly Sound Studios](#)  
and Operator of the Modern Media  
Academy in Philadelphia



**Barbara Adams**

House engineer at [The Tin Angel](#), Sound Engineer  
at [World Café Live!](#), and Professor of Sound  
Reinforcement at Drexel and Rowan universities.

# SNAPSHOT RECORDING

**A bare-bones recording with a portable device is an easy solution that could involve minimal interaction with the live sound engineer.**

---

If you are looking for something very basic, something to use as a tool to analyze your material, performance, arrangements, or the general state of your live show – what Raison refers to as a “snapshot” recording – then a bare-bones recording with a portable device is an easy solution that could involve minimal interaction with the live sound engineer.

Zoom, TASCAM, Olympus, and other manufacturers make extremely portable and affordable hand-held digital recorders with built-in microphones. You can simply put one on a tall mic stand, place it near the mixing area (where it usually sounds the best), and collect a functional stereo recording. Note the tall mic stand: the higher up you can get your recording device, the less chance you have of capturing the vocalizations of the drunk patron who thinks he knows your set. These are also excellent devices to record rehearsals or song ideas when developing material.

But these digital devices can do more than just record via their built-in microphones. With the cabling options provided, you can often plug into a venue’s console (with the cooperation of the live sound engineer), and get a stereo feed of the mix. With 4-channel versions of the same devices, you can get a stereo feed from the board and combine

it with room mics (provided by you), which offers more post-performance mixing options. In some cases, when you combine the direct mix from the front-of-house console with a pair of well-placed microphones, you can end up with a great sounding finished product.

And it’s not just these portable recording devices that have gone digital: many live music venues are investing in digital consoles, and almost all of these have a jump drive (thumb drive, USB drive) or accessible port so you can plug in a USB thumb drive or a hard drive and capture whatever the mixing board is putting out as a stereo feed.

Will this board mix be good enough to release? Maybe. Many variables will determine whether such a recording will be suitable for distribution – including the complexity of your act and sound of the room – but with practice and a little luck, and particularly when you provide yourself some control over the mix after the show, your chances of coming away with a releasable recording improves. But these basic recording techniques are designed more for the snapshot recording concept, and recording for a release is likely going to take a bit more work pre-show, during the show, and in the mixing process.

# HARD PAN THE STEREO FEED

There is a variation of the stereo board feed that can especially serve a solo singer-songwriter looking to release a recording of a live performance. If you can pan the mix hard right and hard left, with your instrument in one channel and voice in the other, you are essentially creating a multi-track recording that you'll have some control over after the show.

"If you're a singer/songwriter, and you're in a venue with a small digital console," says Raison, "you can ask the sound engineer to pan your acoustic guitar hard left and your voice to the right, and you essentially

walk away with a multi-track recording. The instruments are discreet, so you have the ability to dump that stereo track into

your editing system – which could be your DAW, or GarageBand, or even your phone! You can take that stereo file and split it to two mono files, and that gives you the guitar and the vocal discreet from each other. It's a simple way to leave with a multi-track recording that you have control over after the show.

"If you have a four-channel device and can add in additional room mics, you can blend them in and get a pretty fantastic final mix. You can record an entire set, and the next day you can dump it into your

system, mix it, finish it, and use it as promotional material, release it online, or sell it. And if you do this at every single gig, you can amass a catalog of performances and let the good stuff rise to the top. Compile the best performances and recordings and you have an excellent live release on your hands that you can sell on CD or use to get more gigs."

Adams adds that, "At the Tin Angel [a 115-seat venue in Philadelphia], we purchased a [Reflex tower CD burner](#) a couple of years ago, which provides another way bands can make money. Essentially what

I do is take the board mix and duplicate it so fans can leave that night with the recording of the show they just went to. So we offer that to

**If you can pan the mix hard right and hard left, with your instrument in one channel and voice in the other, you are essentially creating a multi-track recording that you'll have some control over after the show.**

everyone who comes to play the Tin Angel, and we charge a small fee for the CDs, and the bands can charge more and make a profit.

"You do have to be open as an artist, because you're dealing with whatever the board mix sounds like, and if you screw up during your performance, that's going to be on the CD. So you have to be able to get past the fact that it's not going to be perfect – and a lot of artists won't do it because they know that if they make a mistake during the performance, it'll be out there."

# MULTI-TRACK RECORDING

**The more control you have of the audio, the better the chances you'll be able to produce a release-quality live recording.**

---

As with a studio recording, the more control you have of the audio after the performance, the better the chances you'll be able to produce a release-quality live recording. That means getting individual tracks for the various instruments and vocalists, as well as some room mics to capture the sound of the room and the crowd.

Many digital consoles offer the opportunity to capture an individual, or discreet, feed of each microphone to a separate track. Depending on how the sound engineer sets up the stage, this could make it possible for you to collect each microphone's signal – each individual instrument and vocalist on stage – separately, direct from the board.

Let's say there are four microphones on the drums, one channel for bass, another channel for guitar, and three channels for lead and background vocals. Many digital consoles are able to provide a send of each input – with one track isolated from the next – so you can access every track individually. Not all digital consoles will have this capacity, less expensive

boards might require a special card to enable that functionality, but getting access to individual tracks is more commonplace than ever before. In addition, many analog boards will allow you to send individual signals, input by input (i.e. mic by mic) to an outside source, such as your recording device or DAW.

But even with this relatively easy access to the individual mic feeds, the issue is often that not every instrument on stage is being mic'd, particularly in smaller venues. The snare drum may be putting out plenty of sound without a mic, there may not be overheads on the kit, or maybe the bass or horns have no line to the board.

In a larger room, you are more likely to have everything mic'd, and therefore you'll be able to get more discreet signals. But in any live recording environment, getting all the signals, including direct outputs from the bass amp and adding mics to collect the sound of the room and crowd, can be a positive (and necessary) addition to your recording.

How you collect and store these signals is one of the many questions you'll need to address, and your solution will depend on the venue's sound board, your system (if you're doing the recording), or your engineer's (if you're outsourcing). If you are going to do the mix in a home studio set-up and have a laptop or portable digital recording device, determining how you'll interface with the board will be part of your pre-show check-in with the house sound engineer.

# MIC SPLITTERS

A mic splitter is a common tool to help an engineer collect signals from the stage. The idea is basic: A mic cable runs from the on-stage microphone to a snake, and from that to the board. A mic splitter gets placed between the mic and the snake, and sends one signal to the snake and the identical signal to another destination – in this case, your recording device.

---

**You'll need to run cables for every mic, have stands for every additional microphone you're providing, and have a way to plug all these inputs into an interface.**

---

As Raison explains: "I have three inexpensive mic splitters, each one is eight channels, and that allows me to get 24 channels to a digital recording system. These splitters were reasonably priced, maybe \$200-300 each. With advance discussion with the house sound engineer, they'll often let us split the stage signals, which allows me to take a feed of every microphone running from the stage. Plus, we can add our own microphones if we need them.

"So if you want to make sure you're picking up the tom toms discreetly, you can put your own mics on there. If the sound person doesn't use overheads – in a small room, cymbals can be really really loud so they may not feel the need to put a microphone



over the cymbals or over the drum kit – but with a recording, it's a requirement. So you can throw a mic or a pair of mics overhead. A room microphone or two also really helps shape the sound. Especially in a large venue with an excited audience."

Of course, you'll need to run cables for every mic, have stands for every additional microphone you're providing, and have a way to plug all these inputs into an interface for your laptop/DAW or have all-in-one recording device on hand, which will add to your expense, equipment needs, and set-up time before the show. Understand that you may need to collect dozens of signals via microphone/instrument cable, which means you'll need to have the means to have inputs and storage for all these signals.

# MEETING WITH THE LIVE SOUND ENGINEER



**Any time you are recording, and if you are expecting assistance or the involvement of the live sound engineer, it is imperative that you meet with him or her before the performance.**

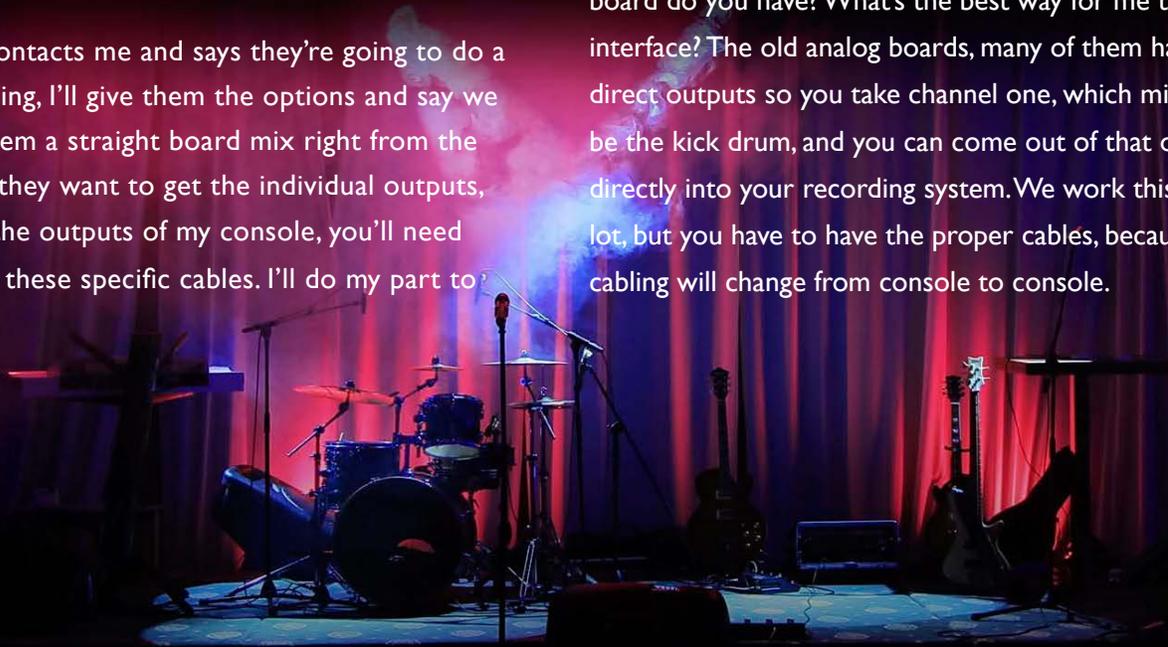
“Typically, when you’re advancing a live show,” says Adams, “you should be doing that two weeks out, just to touch base with the venue and say, ‘This is what I’m coming in with, this is the set up of my band.’ Usually you’ll send an input list or a stage plot and that’ll give us an idea of what we’re working with.

“If you’re planning to record, when you’re advancing the show, say, ‘Listen, we’re going to try and do a live recording.’ You want to give whoever the house engineer is as much advance notice as you can.

If a band contacts me and says they’re going to do a live recording, I’ll give them the options and say we can give them a straight board mix right from the desk, or if they want to get the individual outputs, these are the outputs of my console, you’ll need to bring in these specific cables. I’ll do my part to

make sure they’re prepared, and let them know what they need to bring. So the more advance notice you have, the better off you’ll be the day of show. Showing up the day of the show without any notice, if you plan on doing a recording, can be pretty rude, and it will not get you the results you want.”

“Having the necessary cabling to interface with the soundboard is critical,” confirms Raison, “whether it’s digital or analog. And that’s all based on an advance meeting with the sound engineer. What kind of mixing board do you have? What’s the best way for me to interface? The old analog boards, many of them have direct outputs so you take channel one, which might be the kick drum, and you can come out of that output directly into your recording system. We work this way a lot, but you have to have the proper cables, because the cabling will change from console to console.



 **It may become clear that involving a professional, or at least someone who can act as your recording engineer, will be necessary to provide the results you want.**

---

“And that’s all based on an advance meeting with the sound engineer. What kind of mixing board do you have? What’s the best way for me to interface? The old analog boards, many of them have direct outputs so you take channel one, which might be the kick drum, and you can come out of that output directly into your recording system. We work this way a lot, but you have to have the proper cables, because the cabling will change from console to console.”

“And then there’s the issue of the room itself. Most sound board mixing sites tend to be teeny tiny, and there’s not a lot of space to lay your stuff out. So if you have a laptop and a mic splitter and a this and a that, you’ve got to have a place to put it.”

Understanding the details of the live sound set-up and the layout of the venue – including what electrical outputs are available to you for your recording gear – is an integral part of determining what room you want to record in. What kind of board do they have? What will you need to provide to enable you to get the recording you’re looking for? What will and won’t be mic’d? What kind of cables will you need? Are you grabbing everything from the board? Will you need a splitter? How early will the club allow you to arrive in advance of your show to set up?

As you get deeper into the notion of a live recording, however involved the process, it may become clear

that involving a professional, or at least someone who can act as your recording engineer, will be necessary to provide the results you want.

As Raison puts it: “You have to have someone to do the recording, whether it’s the sound board operator or somebody that you bring with you. If it’s the sound board operator, you need to have that conversation up front, and make sure that they’re on board and you’re going to get a great sounding recording. They need to make certain the outputs of the mixing board are not clipping the recording system, because if you record distortion, distortion is on it for the rest of its existence. Whoever is managing your recording needs to know something about keeping the signal clean and not distorted.”

Make no mistake, the sound engineer’s job is to get the room mix right, and those requirements may be quite different than what you need for your recording. Getting clean strong signals to your recording device, and not having them clip, is of the utmost importance.

It goes back to the fact that having access to the equipment and knowing how to use it effectively are two different things – and experience is a huge factor. Bottom line, if you plan on doing a recording on your own, whatever the intention of the final product, don’t expect to deliver outstanding results the first time you try. It may take a half dozen attempts before you achieve a recording that matches your expectations.

# PERFORMANCE ANXIETY

Of course, a pristine recording of a terrible performance is no better to you than a botched recording of your best night ever. Whatever you can do to promote comfortable conditions for the performers, the better.

In practical terms, this could mean making sure mic placements aren't throwing off the drummer, or additional mics on stage aren't getting in the way. Don't agree to something that's going to change your environment in a disruptive way, and don't decide to change up your arrangements or throw last minute ideas into the performance when you're looking to record.

You are much better off playing to everyone's comfort levels if you expect to record your show. Of course, if you're experimenting with a new percussion part or adding another instrument into the mix and you want to hear what it actually sounds

like in a performance setting, that's an ideal time for a snapshot recording. But if you're looking to record a show for a release, that's probably not the time to introduce a new performer, string section, backing track, or major new element to your set.

And be especially particular when it comes to tuning your instruments. Obviously, tuning your instruments is a prerequisite for every show, but you must be sure every guitar, bass, violin, piano, etc. is carefully tuned prior to the gig when you're recording. In fact, stringed instruments should be checked and tuned as necessary, even between songs, and drummers should do their best to make sure the drums are all tuned and sound good acoustically before the set begins.



**Whatever you can do to promote comfortable conditions for the performers, the better.**



# RECORDING FOR RELEASE

**The idea is to lower your risk and increase the odds of capturing a great performance. The more you do it, the more likely you're going to get it right.**

---

Ultimately, as an artist looking to release a live recording, you need to be flexible, because once you get all the prep work done, you've chosen your venue and got all the equipment set, the band might end up having a terrible night. That's the nature of a live recording.

"If you're doing a recording because you want to release it," Raison advises, "try to do a series of recordings, not just one. If you do it all on one night, as my mom used to say, you're carrying all your eggs in one basket. You drop that basket and all your eggs break. So when we do larger concerts here at Philly Sound Studios, we'll do a one-night, one-time concert, but we usually recommend that we do two or three nights in a row, not because we're expecting technical problems, but sometimes it just doesn't work creatively on stage."

This could mean multiple recordings at the same venue or various recordings from multiple venues. The idea is to lower your risk and increase the odds

of capturing a great performance. The more you do it, the more likely you're going to get it right. Plus, multiple shows take some pressure off the players to have only one shot to dial in a stellar performance.

Hiring a professional is another way of taking some pressure off the performers. If you are an artist or band member recording a live album, hiring an experienced sound engineer can help you and your band mates focus purely on delivering a concert you'll be proud to listen back to for years to come.



# MIXING A LIVE RECORD

**Mixing a live recording requires a different approach than a studio recording because the environment is so different.**

Mixing a live recording requires a different approach than a studio recording because the environment is so different. The very nature of the live room means you don't have control over isolation – especially in a small venue. If you have a four-piece band – a thunderous bass amplifier, a rocking guitar amplifier, and a bunch of drum and vocal microphones – even with discreet tracks from every instrument, you can experience a lot of bleeding from one instrument to the next, or bass and other sounds coming through the monitors, filtering into the other tracks.

“You sometimes have to treat a track to get what you want out of it,” says Raison. “On a big stage, in a big venue, everything is very different. Everything is mic'd, instruments and amplifiers are far enough away from each other that this isn't much of an issue. In small rooms, you have to deal with the situation. But that's half of the art and the creativity of mixing.

“I had a high-stakes live recording I did, and the vocalist had a massive quantity of wedge monitors around him cranked up to 11. But my biggest problem was the crash cymbals being picked up by his vocal mic. Those cymbals are right at mouth level and they're loud, bright, brash, and shrill, and the SM58 microphone picked it up. So when it came time

to edit and mix that project, it became a real dance of automation, to get the cymbals and the vocals to work well together. And there's nothing you can do about that on a small stage – you've got to deal with what you're dealing with for a live recording.”

Adams says “If they advance with me and say, ‘We want to try and do a live CD,’ my typical reaction is, ‘OK, you might want to try and bring in somebody who has the ability to multi-track and take each microphone on a separate track and then mix it down later.’ And that way you can go in and fix things if you want, though it's a little more difficult to fix something that was recorded live. It's not like in a studio where you have isolated tracks. In a live setting you're going to have things that bleed from one mic to another.

“So be prepared knowing you might not be able to fix stuff later. But, if you have the multi-track, you're able to mix more for the recording than for the room. So in that aspect there are a few people who can come out to a venue and take a split where they're recording each microphone to a separate track and they're able to mix it more for the the recording, where I'm concentrating more on what's going on in the room.”

# THE FINAL ANALYSIS



**To achieve your objective, you need to first define what your objective is and then explore your options in regard to venue and equipment to achieve the result you're looking for.**

We've steered clear of specific gear recommendations and equipment lists, because just like in a home studio set-up, the formula you use to obtain your ideal recording environment is personal and diverse, and your remote solution will need to complement your existing home set-up. Just know that to achieve your objective, you need to first define what your objective is and then explore your options in regard to venue and equipment to achieve the result you're looking for.

And though ever more affordable, it can still cost a good deal of money to invest in a high-tech remote recording rig and achieve a high-quality, live, multi-track recording of your act. If you have the

equipment and a crew in place, doing a recording, or a series of recordings, may be feasible and even fairly simple; if you're a basic acoustic act with minimal instrumentation and vocals, your options for recording can be relatively simple to achieve a highly professional result.

But similar to a home recording studio, producing a high-end result for the majority of independent acts will require a mix of the right equipment in the hands of competent individuals who can set up, capture, and mix a multi-track recording, while also providing the support to the venue and the performers to make the event run smoothly and keep the performers on their game.





**Andre Calilhanna** is a musician and writer with three decades of experience on stage, in the studio, and at the computer. He manages the [Disc Makers](#) and [BookBaby](#) blog sites, continuing his 20-year stint as a marketer at Disc Makers.

---



**Drew Raison's** career is founded on the music and production knowledge he's lived for the last 25 years. Concentrating on music production and mixing, Raison works directly with entertainers and artists from a wide variety of genres, assisting them through the complex world of professional entertainment. From his first studio stint at Queen Village Recording Studio in Philadelphia, Raison produced sessions at Studio 4, The Warehouse, and Kajem/Victory before opening Big Sky Audio, a major 4,000 square foot, multi-room recording studio in the Philly suburbs. Raison's latest endeavor, [Philly Sound Studios](#), is a recording studio/live performance venue, which also houses the [South Philly School of Music and Arts](#).

---



**Barbara Adams** is the house engineer at the [Tin Angel](#) and also works as a sound engineer at [World Cafe Live!](#) – both are landmark venues in Philadelphia, PA. Adams also occasionally works as a freelance engineer/system tech for two production companies, and does freelance work mixing FOH for regional bands touring the Northeast and Mid Atlantic states. Adams is also owner and business manager of [BurnDown Studios](#) in Germantown, PA and an Adjunct Professor of Sound Reinforcement at [Drexel University](#) and [Rowan University](#).