

THE ULTIMATE GUIDE TO RECORDING



LIVE MUSICIANS IN THE STUDIO

Elite Recording Techniques for
Jazz, Funk, Soul & Traditional R&B

RALPH SUTTON



PUBLISHED BY UJAMAA MEDIA

The Ultimate Guide to Recording Live Musicians in the Studio

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Published by Ujamaa Media

First Edition – 2026

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INTRODUCTION

Most recordings do not fail during the mix.

They fail long before that.

They fail when the wrong room is chosen. They fail when the arrangement is not refined. They fail when the wrong microphones are placed in the wrong position. They fail when the engineer records instruments one at a time without understanding how musicians are supposed to sound together.

By the time the mix begins, the damage is already done.

This is why so many modern recordings sound small, flat, harsh, disconnected, or strangely lifeless even when expensive equipment is used.

Too many people begin with software, plugins, presets, and repair techniques.

Serious professionals begin somewhere else.

They begin with the room.

They begin with the musicians.

They begin with the arrangement.

They begin with microphone placement.

They begin with intention.

That is the difference between an ordinary recording and a record that feels expensive, emotional, powerful, and unforgettable.

This guide is not written for casual hobbyists.

It is written for serious artists, producers, engineers, and independent labels who want recordings that compete with the best Jazz, Funk, Soul, and Traditional R&B records ever made.

If you are satisfied with “good enough,” this guide is not for you.

But if you are tired of spending money on recordings that still do not sound like the records you admire, you are in the right place.

For decades, Ralph Sutton has recorded and mixed live musicians at the highest level. His work combines the discipline learned during his years at Motown Hitsville USA with decades of additional experience recording Jazz, Funk, Soul, and Traditional R&B.

The result is not nostalgia.

It is a modern recording philosophy that produces records with depth, width, authority, emotion, and musical realism.

Inside this guide, you will learn:

why most recordings sound small before the mix ever begins

how to prepare the room and musicians correctly

which microphones create size, clarity, and musicality

why fewer microphones often create better recordings

how Ralph Sutton uses AEA ribbon microphones, the Neumann TLM 170 R, the U67, and the U87 to create his signature sound

how to record with both stereo and Dolby Atmos in mind from the beginning

You will also discover something that many people do not want to admit:

Recording is not simply technical.

It is psychological.

Musicians perform differently when they trust the engineer.

They perform differently when the room sounds inspiring.

They perform differently when the engineer knows exactly what he is doing.

That confidence becomes part of the record.

And when the wrong engineer is chosen, the opposite is also true.

The musicians feel uncertain.

The performance becomes smaller.

The recording becomes harder to save.

Money is wasted.

Time is wasted.

And the final result never fully becomes what it could have been.

That is why serious artists do not choose an engineer based only on price.

They choose the engineer based on whether that person can help them create a record worth keeping forever.

The pages that follow will show you how Ralph Sutton approaches recording live musicians and why that approach continues to matter.

If, while reading this guide, you realize that your project deserves more than an ordinary recording, visit RalphSutton.com.

Because great records do not happen by accident.

They happen when the right musicians, the right room, and the right engineer come together at the right time.

THE MINDSET OF RECORDING LIVE MUSICIANS

The first mistake most engineers make is believing that recording is primarily about equipment.

It is not.

Equipment matters. Microphones matter. Consoles matter. Preamps matter. But none of those things matter as much as the thinking behind them.

A mediocre engineer with expensive equipment still creates mediocre recordings.

A great engineer can walk into almost any room, understand what matters, and make a record that feels alive.

That is because recording live musicians is not simply a technical process.

It is a way of thinking.

When I record musicians, I do not capture isolated sounds. I capture relationships.

The relationship between the drummer and the bass player.

The relationship between the piano and the room.

The relationship between the horn section and the rhythm section.

The relationship between the musicians and the emotional intention of the song.

Most recordings sound small because the engineer approaches every instrument separately.

Kick drum.

Snare drum.

Bass.

Guitar.

Piano.

Vocals.

One track at a time.

One plugin at a time.

One isolated decision at a time.

Then they wonder why the record never feels like a performance.

The reason is simple:

Music is not made from isolated parts.

Music is made from interaction.

When I record Jazz, Funk, Soul, or Traditional R&B, I begin by asking a different question:

What is the emotional center of this song, and what must I do to preserve it?

Sometimes that means recording several musicians together.

Sometimes it means leaving a little bleed between microphones because the bleed creates realism.

Sometimes it means using fewer microphones instead of more.

The modern world teaches engineers that more is always better:

- more microphones
- more tracks
- more editing
- more plugins
- more repair

I do not believe that.

In my experience, more often creates confusion.

The best recordings usually come from clarity, intention, and discipline.

That is one reason I often prefer fewer microphones placed carefully in the right position.

I would rather use one microphone in the perfect position than three microphones in the wrong position.

I would rather hear the room than destroy it.

I would rather record a real performance than spend days trying to manufacture one later.

This is also why I begin with the room.

The room is not an inconvenience.

The room is not something to eliminate.

The room is part of the sound.

When the room sounds right, the musicians play differently.

They hear themselves differently.

They become more confident.

The performance becomes larger.

The recording becomes easier.

When the room sounds wrong, everything becomes harder.

The musicians struggle.

The engineer compensates.

The mix becomes a rescue operation.

Many people spend thousands of dollars trying to fix in the mix what should have been solved before the first note was recorded.

That is expensive.

It is also unnecessary.

A serious recording begins before the first microphone is placed.

It begins with:

- the arrangement
- the musicians
- the room
- the emotional goal of the song
- the engineer's ability to hear the finished record before it exists

That last part matters.

A great engineer does not simply react.

He hears the destination before the journey begins.

Before I walk into a session, I have already spoken with the producer, artist, arranger, or label about the song and the emotional direction of the record. Whenever possible, I have heard a rough demo, rehearsal recording, piano-vocal, or discussion of the arrangement.

By the time I walk into the room, I already know whether I want the drums to feel intimate or explosive. I know whether I want the horns to feel elegant, aggressive, or cinematic. I know whether the vocal should feel close and personal or larger than life.

Those decisions shape every microphone choice, every placement, every balance, and every recording decision that follows.

This is why serious artists should be careful about choosing an engineer based only on price.

A cheaper engineer may cost less at the beginning.

But if the recording never feels right, if the musicians lose confidence, if the mix becomes a repair project, and if the record still does not sound the way it should, the cheaper choice becomes the expensive choice.

The right engineer saves time.

The right engineer protects the performance.

The right engineer understands what the record needs before the musicians even begin to play.

That is the mindset required to record live musicians at the highest level.

And everything else in this guide begins there.

PREPARING THE ROOM BEFORE THE SESSION

Before I place a microphone, I prepare the room.

Most engineers spend too much time thinking about equipment and not enough time thinking about where the equipment is being used.

The room is not a background detail.

The room is an instrument.

If the room sounds wrong, every microphone hears the wrong thing.

It does not matter how expensive the microphone is.

It does not matter how many plugins you own.

It does not matter how advanced the DAW is.

If the room works against the music, the recording begins with a disadvantage.

That is why one of the first things I do is walk through the room and listen.

I listen for:

- reflections
- dead spots
- harsh frequencies
- low-end buildup
- where the room feels exciting
- where the room feels controlled

I want to know where the music naturally wants to live.

Many people make the mistake of putting every musician in the most convenient place.

I do not do that.

I place musicians where they sound best.

The drums may need to move.

The bass amplifier may need to move.

The piano may need to move.

The horn section may need to move.

Sometimes a difference of only a few feet completely changes the sound.

I have seen engineers spend hours changing microphones when the real problem was the position of the instrument in the room.

The room always comes first.

When I record drums, I want the room to help create size and depth.
When I record horns, I want the room to help create blend and authority.
When I record strings or piano, I want the room to support detail and emotion.

That is one reason I often prefer a room with character rather than a room that is completely dead.

A completely dead room may feel controlled, but it often produces recordings that sound small, dry, and uninspiring.

I want enough control to shape the sound—but I also want enough life in the room to create realism.

That balance matters.

The same idea applies to separation.

Many modern recordings are built around complete isolation.
Every instrument is separated.
Every microphone is isolated.
Every musician is alone.

Sometimes that is necessary.

But complete isolation often removes the very thing that makes live music exciting.

A small amount of controlled bleed can create glue.
It can make the musicians feel connected.
It can make the recording feel like a performance instead of a collection of individual tracks.

I do not fear bleed.

I control it.

If the drummer and bass player are meant to feel connected, I allow the room and the microphones to capture some of that relationship.

If the horn section is meant to sound like a section instead of four isolated players, I allow the room to help create that blend.

The goal is not perfection.

The goal is musicality.

This is also where I begin thinking about room microphones.

I use room microphones carefully and intentionally.

I do not use them because “everyone uses room mics.”
I use them because they create depth, dimension, and what I often call sonic glue.

For room microphones, I often prefer ribbon microphones because they capture space in a natural, elegant way.

One of my favorite approaches is using AEA ribbon microphones placed at the right distance to capture the relationship between the musicians and the room.

Those microphones do not simply record ambience.

They record size.

They record authority.

They record the feeling that the musicians are truly in front of you.

That difference matters.

It is one reason some recordings immediately sound expensive and others do not.

Expensive sound is rarely created by price alone.

It is created by understanding how the room, the musicians, and the microphones work together.

Before the session begins, I also think about sight lines and communication.

Can the musicians see each other?

Can they feel connected?

Can they hear each other naturally?

If the musicians cannot communicate, the music suffers.

I want the musicians to feel confident, relaxed, and inspired.

That often means creating a room setup that supports performance—not just convenience.

The right room setup creates better performances.

Better performances create better recordings.

Better recordings require less repair.

That is why preparation matters.

Many people want to rush into recording because they are excited to begin.

I understand that.

But every minute spent preparing the room saves hours later.

The musicians perform better.

The recording becomes easier.

The mix becomes more powerful.

And the final record becomes what it was meant to be.

That is the difference between recording sound and producing a record.

RECORDING THE RHYTHM SECTION

The rhythm section is the foundation of the record.

If the rhythm section feels weak, disconnected, or uncertain, everything built on top of it becomes harder.

The horns will not feel as powerful.
The vocal will not feel as confident.
The arrangement will not feel as deep.

That is why I do not treat the rhythm section as a collection of separate instruments.

I treat it as one musical organism.

When I record the rhythm section, I am listening for:

- groove
- interaction
- authority
- space
- emotional direction

I want the drummer and bass player to feel connected.

I want the guitar, piano, Rhodes, or Hammond B3 to support that relationship without fighting it.

Before recording begins, I speak with the producer, artist, arranger, and musicians about the purpose of the song.

Is the groove supposed to feel intimate?

Aggressive?

Elegant?

Loose?

Precise?

Those decisions shape everything that follows.

A Funk record may require the drums and bass to feel tight, dry, and immediate.

A Jazz ballad may require more room, more air, and more emotional space.

A Traditional R&B record may need the rhythm section to feel rich, warm, and larger than life.

I do not use the same setup for every song.

I build the setup around the emotional goal of the record.

That is one reason I prefer to record as many rhythm instruments together as possible.

When the drummer, bass player, piano player, guitarist, and percussionist perform together, they influence one another.

The groove becomes more natural.

The phrasing becomes more musical.

The record begins to breathe.

Many modern recordings lose this because everything is recorded separately.

The result is often technically correct but emotionally empty.

I would rather preserve the feel of a great performance than create a perfect but lifeless recording.

That does not mean I avoid overdubs.

I use overdubs when they help the record.

But I want the foundation to come from real musicians responding to one another in real time.

That foundation becomes impossible to fake later.

Drums and Bass Must Feel Like One Instrument

The most important relationship inside the rhythm section is between the drums and the bass.

If those two instruments feel disconnected, the entire record feels smaller.

When I work with the drummer and bass player, I pay close attention to:

- pocket
- note length
- attack
- tone
- dynamics

I want the kick drum and bass guitar to support one another instead of competing.

Sometimes that means adjusting the bass amplifier.

Sometimes it means changing where the drummer places the kick drum beater.

Sometimes it means changing the arrangement.

The answer is not always EQ.

The answer is often musical.

When the rhythm section is working correctly, the record immediately feels more expensive.

That is because people do not simply hear groove.

They feel it.

My Approach to Bass

For electric bass, I almost always blend a direct signal with an amplifier.

The direct signal gives me clarity, definition, and low-end support.

The amplifier gives me weight, personality, and air.

I do not choose one or the other.

I use both because together they create a more complete sound.

For the amplifier, I often use a combination of a dynamic microphone and a ribbon microphone.

I like the Sennheiser MD421 combined with an AEA Nuvo N22 ribbon microphone because it gives me both attack and fullness.

For upright bass, I often prefer the Neumann TLM 170 R because it captures the size, warmth, and natural detail of the instrument without exaggerating harshness.

When the opportunity calls for a more classic, dimensional tube character, I also like the Neumann M 149 Tube, especially on high-level players such as Stanley Clarke where nuance, depth, and authority must translate without compromise.

Most people record bass to be heard. I record bass to be felt.

The goal is to feel the instrument as part of the emotional center of the record.

Guitar, Piano, Rhodes, and Hammond B3

The supporting instruments inside the rhythm section must create space without crowding the arrangement.

Too many recordings sound cluttered because every instrument is fighting for attention.

I do not want that.

I want each instrument to have a purpose.

For electric guitar amplifiers, I often use a Sennheiser MD421 with an AEA N22 ribbon microphone.

The MD421 gives me presence and attack.

The ribbon microphone gives me body, warmth, and realism.

Together they create a guitar sound that feels complete.

For acoustic piano, one of my favorite microphones is the Neumann TLM 170 R.

I often use a high-low approach inside the piano so I can capture both the body of the instrument and the detail of the performance.

Rhodes Must Create Texture and Movement

For Rhodes, I think about texture.

The Rhodes often supports the emotional identity of the song.

Sometimes I want it to feel soft, wide, and elegant.

Sometimes I want it to add movement and warmth without taking attention away from the vocal or horns.

But I do not approach Rhodes as a simple stereo instrument.

I approach it as an environment.

Direct Sound Is Only the Beginning

I prefer to record the Rhodes MK8, and I take a clean stereo direct signal using a Radial J48 Stereo 2-channel active direct box into the console.

That direct signal gives me:

- clarity
- definition
- harmonic detail

But by itself, it is not enough.

It sounds correct...

But not complete.

Creating True Organic Stereo

To create a truly dimensional Rhodes sound, I move beyond the direct signal.

I use a pair of Fender '57 Custom Twin-Amps (2x12-inch, 40-watt tube combo amps).

I run the Rhodes through both amplifiers and mic them, along with the room.

This is where the sound begins to transform.

Now I am capturing:

- air
- movement
- interaction with the room
- and natural stereo width

Spacing Creates the Image

Depending on the song and the sound I am creating, I physically space the amplifiers:

- 3 feet apart for tighter, more focused stereo
- 6 feet apart for natural width
- 9 feet apart for a larger, more dimensional image

That spacing changes how the sound arrives at the microphones.

And that changes how the listener perceives space.

This is not a plugin.

This is physics.

The Result

When the miked amplifiers are blended with the direct signal from the MK8, the result is something entirely different.

Not just stereo.

Not just width.

But depth.

Movement.

Presence.

A Rhodes that feels alive inside the record.

Why This Matters

Most people record Rhodes to be clean.

I record Rhodes to exist in the same world as the musicians.

That is the difference.

And when done correctly, the sound is beyond comparison.

The Hammond B3 and Leslie are different.

The Hammond B3 is such a large, powerful sound that I usually record it as an overdub.

Unless the B3 is one of the primary lead instruments of the song, I do not want it filling the room during the rhythm section tracking because it changes the entire sound of the space and can create more bleed than I want.

When the B3 is meant to be featured, however, I may record it during the basic tracking session because its interaction with the rhythm section becomes part of the personality of the record.

The same idea applies to percussion.

I only record percussion during the rhythm track if it is truly part of the bed of the groove.

Because percussion can be pervasive, loud, and difficult to control, I want to be intentional.

If I include percussion during tracking, it is usually:

- congas
- bongos
- timbales
- occasionally vibraphone

In those situations, the bleed is not a problem.

The bleed becomes part of the groove, part of the excitement, and part of the identity of the recording.

There are also occasions where I record nearly everything at once:

- rhythm section
- Hammond B3
- horns
- guide vocals
- sometimes even final vocals

But that type of session only works when the musicians are exceptionally well prepared, and the project has been designed specifically for that approach.

That is the world of a major recording project with musicians who can truly play.

In that environment, one mistake may require the entire band to begin again or at minimum, everyone must begin playing 8 to 16 bars before the punch, so the room, the bleed, and the ambience continue naturally.

That level of recording is demanding.

But when it is done correctly, the result can feel extraordinary because the entire record is built from one real performance.

Again, those decisions come from the song and production style.

Everything comes back to the song and the musicians.

The Rhythm Section Must Sound Like a Record Before the Overdubs

One of the biggest mistakes I see is engineers who believe they can fix everything later.

They record the rhythm section quickly and assume the horns, vocals, strings, and mix will solve the problem.

That is backwards.

The rhythm section should already sound like a record before the first overdub is added.

If the rhythm section already has depth, movement, confidence, and emotional direction, everything else becomes easier.

The horns sound larger.

The vocals sit naturally.

The mix opens up.

But if the rhythm section feels weak, everything added later feels like an attempt to hide the weakness.

I do not build records that way.

I build the foundation first.

Because when the foundation is right, the rest of the record almost begins to mix itself.

RECORDING DRUMS

The drums tell the listener how the record is supposed to feel.

Before the vocal. Before the horns. Before the arrangement is fully revealed.

The drums tell the listener whether the song is intimate, aggressive, elegant, cinematic, dry, wide, emotional, or powerful.

That is why I do not record drums as a collection of individual pieces.

I record the drum set as one instrument.

The kick drum, snare, toms, cymbals, and room must all work together.

If the individual microphones sound impressive but the drum set does not feel like one instrument, the recording fails.

That is the first mistake many engineers make.

They become obsessed with the close microphones.

They listen to the kick by itself.

They listen to the snare by itself.

They listen to the toms by themselves.

Then they wonder why the drum set never feels real.

I begin somewhere else.

I begin with the drummer, the room, and the emotional purpose of the song.

Before I place a single microphone, I ask:

What does this drum performance need to feel like?

A Funk record may require the drums to feel tight, punchy, and immediate.

A Jazz record may require more room, more movement, and more natural detail.

A Soul ballad may require the drums to feel elegant and emotional.

Those decisions shape everything.

THE DRUMMER MATTERS MORE THAN THE MICROPHONES

The most important part of the drum sound is the drummer.

A great drummer with average equipment will almost always sound better than an average drummer with expensive equipment.

Touch matters.

Dynamics matter.

Consistency matters.

If the drummer does not know how to balance the kick drum, snare, cymbals, and toms, the microphones cannot solve that problem.

I listen carefully to how the drummer plays the room.

Some drummers naturally create size.

Some drummers naturally create intimacy.

My job is not to fight that.

My job is to understand it and capture it.

MY PHILOSOPHY: FEWER MICROPHONES, BETTER PLACEMENT

I do not believe in using more microphones simply because I can.

I use the number of microphones the record actually needs.

Many engineers place microphones everywhere and create a complicated drum sound that becomes difficult to control.

I prefer fewer microphones placed intentionally.

Every microphone must have a purpose.

If a microphone does not make the drum set better, I remove it.

That is one reason I often begin with:

- overheads
- kick drum
- snare drum
- room microphones

Then I add additional microphones only if the music requires them.

Because the overheads and room microphones often create the real sound of the drum set.

The close microphones simply support that picture.

MY DRUM MICROPHONE APPROACH

Each song requires different microphones.

I do not believe there is one perfect drum setup.

The correct setup depends on:

- the style of the song
- the drummer
- the room
- the dynamics
- how much detail or size the record requires

For the kick drum, I often use two microphones:

- a Sennheiser MD421 inside the kick drum for attack and definition
- a Neumann U47 FET outside the kick drum for size, depth, and low-end authority

Together they create a kick sound that feels complete.

For the top of the snare drum, I often use either:

- a Shure SM57
- or a Sennheiser MD421

The choice depends on the song and how much weight, attack, or openness I want.

For the bottom of the snare, I use an AKG 451 with the -10 dB pad engaged and the 150 Hz roll off switched in.

That gives me the snares, snap and detail while keeping the sound controlled.

For toms, I often use a Sennheiser MD421 on each drum.

But if the song requires more openness, more color, or more detail, I may use Neumann U87s or U67s.

Those microphones are especially effective for Jazz drumming with more hand work, brush work, and dynamic playing.

A great Jazz drummer does not simply hit the drums.

He shapes the sound through touch, velocity, and control.

The microphones must respect that.

For overheads, I often use AKG C414 XLII microphones.

I also like AKG C12 microphones because of the musical presence they add between 4 and 8 kHz.

When I want a more open, vintage, and organic sound, I may use AEA N8 ribbon microphones.

Because the AEA N8 is a figure-8 ribbon microphone, it captures the drum set and the room in a way that feels wider, more natural, and more alive.

That can be especially powerful on Jazz, Soul, and more spacious recordings.

On rare occasions, I use only three microphones:

- left
- center
- right

That approach requires a remarkable drummer.

The drummer must have exceptional control of velocity, dynamics, and balance.

The drums must be tuned correctly.

Jazz drummers often describe this by saying the drums must “talk.”

When the drummer, the tuning, and the room are right, a three-microphone setup can create one of the most natural and beautiful drum sounds possible.

It sounds like a performance instead of a technical exercise.

I am a drummer’s engineer.

Drums and piano are my favorite instruments to record because they reveal everything:

- touch
- dynamics

- emotion
- musicianship

When those instruments are recorded correctly, the rest of the record becomes easier.

ROOM MICROPHONES CREATE SIZE

One of the biggest differences between an ordinary drum recording and an expensive-sounding drum recording is the room.

If the room sounds right, the drums sound larger, deeper, and more emotional.

That is why I pay close attention to room microphones.

For stereo recording, one of my favorite room microphone techniques is using three Neumann M49 microphones:

- left
- center
- right

I also use the same concept with AEA R88A ribbon microphones when I want more vintage tone, more warmth, and a true ribbon character.

The AEA R88A is a stereo ribbon microphone with a Blumlein figure-8 design, which allows me to capture a natural, balanced image of the room and the musicians.

What makes this microphone powerful is not just its tone, but its ability to reproduce space in a way that feels organic and believable.

It gives me a classic, vintage ribbon sound while preserving the depth and realism of the recording environment. The placement of these room microphones is not random.

There is mathematics involved.

I begin at the center of the kick drum and measure toward the true center of the room.

The exact distance depends on:

the size of the room

the style of the song

the tempo

the amount of space I want the drums and musicians to have

Once I determine the position of the center room microphone, I then measure outward for the left and right microphones, so the room image remains balanced and realistic.

When these microphones are placed correctly, they do more than record ambience.

They create a sonic picture of the room.

They capture:

- the drums
- the bass
- the piano
- the guitar
- the bleed
- the movement of the musicians in the room

That picture becomes part of the record.

It creates the psychoacoustic illusion that the listener is standing in the room with the musicians.

That is one reason so many classic recordings feel larger, deeper, and more emotionally real.

The room microphones are not simply documenting the room.

They are documenting the experience.

This is also why overdubs become more complicated.

Once the room microphones establish the original sonic picture, every overdub must respect that picture.

The horn section, background vocals, percussion, or additional instruments must be placed in a way that matches the original placement of the musicians from the tracking session.

Otherwise, the illusion disappears.

That is where things become both difficult and extraordinary.

When everything matches correctly, the final record feels like one performance captured in one room even when parts were added later.

That is the art of recording.

It is also one of the ideas that eventually leads naturally into immersive recording and Dolby Atmos.

Stereo can already create a remarkable illusion of space when the room is captured correctly.

Dolby Atmos simply expands those possibilities even further.

That is a subject I explore separately in my advanced Dolby Atmos recording guide.

BLEED IS NOT THE ENEMY

Bleed is not the problem.

In many great recordings, bleed is what makes the instruments feel connected.

The drum set is one instrument.

So, if the snare appears in the kick microphone, or the toms appear in the snare, that is not an issue.

Of course, the snare will be in the overheads.

Of course the toms will live in the room microphones.

That is how the instrument exists in real space.

Many engineers fight to eliminate every trace of bleed.

I do not.

When everything is isolated, the kit stops sounding like a performance.

Controlled bleed creates:

- connection
- depth
- realism

It allows the drum set to behave as a single instrument instead of disconnected parts.

Those subtle relationships are what the listener responds to—even if they cannot explain it.

I am not chasing isolation.

I am building connections.

THE DRUM SOUND SHOULD ALREADY FEEL LIKE A RECORD

Before I move on to the bass, guitar, piano, horns, or vocals, I want the drums to already feel like a record.

I want the drummer, the room, the microphones, and the balance to create a feeling immediately.

If the drums already sound exciting before the mix, everything else becomes easier.

But if the drums sound weak, disconnected, or lifeless, the rest of the session becomes an attempt to repair the damage.

I do not build records that way.

I build the drum sound from the beginning, so it already feels intentional, powerful, and emotionally right.

Because when the drums feel right, the entire record begins to come alive.

RECORDING PIANO IS LIKE RECORDING AN ORCHESTRA

The piano is one of my favorite instruments to record because it contains almost everything:

- rhythm
- harmony
- melody
- attack
- sustain
- emotion

A piano can whisper.

A piano can roar.

It can feel intimate and fragile, or it can feel powerful and cinematic.

That is why I never approach the piano with only one microphone setup.

The setup depends on:

- the song
- the arrangement
- whether the piano is supporting the track or leading it
- how much space the piano should occupy in the record

For acoustic piano, I often use a high-and-low microphone arrangement with Neumann TLM 170 R microphones.

The lower microphone allows me to capture the weight and authority of the lower register.

The upper microphone captures the articulation, attack, and personality of the right hand.

When blended correctly, the result feels balanced, elegant, and alive.

Sometimes I want the piano to sound very close and intimate.

Other times I want it to feel larger and more orchestral.

When I want more size and more of the room, I will allow the room microphones to become part of the piano sound.

That is where the same psychoacoustic principles apply.

The piano is no longer only a piano.

It becomes part of the room and part of the emotional experience of the song.

Just like the drums, the piano must feel as though it belongs inside the same sonic picture as the rest of the musicians.

When that happens, the record begins to feel real.

HORN SECTIONS MUST SOUND LIKE ONE VOICE

A horn section is not simply a group of individual instruments.

A great horn section sounds like one voice made up of several musicians.

That is why I do not record horns by thinking only about individual microphones.

I think about:

- blend
- perspective
- placement
- and how the section should feel inside the record

By the time I am recording horns, I already understand the direction of the song.

Whether I am working with the artist and arranger from the beginning or brought in specifically to capture the section, I listen carefully to the track and make decisions that support the music.

If needed, I will confirm intention with the producer or arranger but I am not waiting for direction.

I am shaping the sound.

Microphone Choices That Support the Section

For trumpet, I often use:

- Neumann TLM 170 R
- Neumann U87

These microphones allow me to capture the power of the instrument without introducing harshness.

For trombone, flugelhorn, euphonium, or tuba, I often use a Neumann U67.

These instruments require size, warmth, and depth and the U67 delivers that naturally.

For alto saxophone, tenor saxophone, and clarinet, I use a combination of:

- Neumann U87

- Neumann TLM 170 R
- AEA A440
- AEA NUVO N8

The choice depends on whether I want:

- more bite
- more smoothness
- or more of the room

Ribbon microphones are especially effective on saxophones because they soften the aggressive edges while preserving the emotional content of the performance.

The Room Creates the Blend

When I record a horn section, I am not just capturing instruments.

I am capturing interaction.

I often use a spaced pair of AEA A440 or AEA NUVO N8 ribbon microphones to capture the stereo image and what I call the sonic glue.

Those room microphones do more than capture ambience.

They allow the individual players to become one section.

That is what makes the section sound expensive.

They capture:

- the movement of air
- the blend between players
- the reflections of the room

Those details create the illusion that the listener is standing in front of a real horn section.

A Real-World Example

A clear example of this approach can be heard in my work with the Gerald Wilson Orchestra on *New York New Sound*, particularly on the recording of “Viva Tirado.”

Working with Gerald Wilson as the arranger and Stix Hooper as the producer, the goal was not to isolate each instrument it was to present the section as a unified voice.

The blend, the space, and the interaction between the players were all captured as part of the performance.

That session reflects what I am describing here:

A horn section that does not sound assembled.

It sounds like one voice moving together.

Sessions like that are not about capturing parts, they are about capturing a legacy in motion.

The Philosophy

If a horn section sounds too isolated, too separated, or too perfect, it often stops sounding real.

I am not interested in perfection.

I am interested in emotional truth.

That is why I allow the room and the natural interaction between instruments to remain part of the recording.

That interaction creates:

- depth
- life
- and realism

And most importantly, it creates records that feel like records not computer files.

BASS GUITAR MUST FEEL LIKE THE FOUNDATION

The bass guitar is not simply another instrument in the arrangement.

It is the foundation.

If the bass feels weak, undefined, or disconnected from the drums, the entire record loses its authority.

That is why I make certain the bass and the kick drum feel like they belong to the same musical conversation.

Not technically.

Musically.

Before I record a bass player, I listen to the song.

I ask:

- Should the bass feel deep and supportive?
- Should it feel aggressive and rhythmic?
- Should it sing?
- Should it disappear into the track and simply make everything feel better?

The answers determine everything.

Electric Bass – Depth, Punch, and Authority

For electric bass, I almost always record both a direct signal and the amplifier.

The direct signal gives me:

- clarity
- definition
- low-frequency authority

The amplifier gives me:

- personality
- movement
- air
- emotional weight

When those two signals are blended correctly, the bass becomes something you don't just hear.

You feel it.

The Role of the DI Box

When I choose a DI box, I am not just looking for a clean signal.

I am capturing the character of the instrument.

A great DI box gives me three things:

Clean Signal Transfer

A proper DI sends a pure, noise-free signal into the recording chain.

No hum. No buzz. No ground loops. Just music.

Preserved Tone and Dynamics

The attack, the body, and the decay of the note must remain intact.

If the DI dulls the transient or weakens the low end, the instrument immediately feels smaller.

Impedance Matching

Most instruments were not designed to plug directly into professional recording equipment.

A DI ensures the instrument and the recording system work together correctly.

Without that, the tone becomes weak, and the performance loses its authority.

Active vs Passive – Making the Right Choice

I choose between passive and active DI boxes based on the instrument.

Passive DI Boxes

- Best for active basses and synths

- I like Radial JDI
- Often built with transformers that add subtle character
- No power required

Active DI Boxes

- Best for passive basses and vintage instruments
- I like Radial J48
- Require phantom power or battery
- Capture more transient detail and extended frequency range

The choice matters.

Because the DI is not just a utility.

It is part of the sound.

Amplifier Capture

For the amplifier, I am listening for weight and personality.

I often use:

- Neumann U47 FET
- Neumann U67
- or other microphones that capture the cabinet correctly

Sometimes I place one microphone close and another farther back.

Because distance affects:

- phase
- depth
- impact
- and emotional feel

There is mathematics involved.

But more importantly there is listening.

Acoustic Bass – Wood, Air, and Emotion

Acoustic bass is different.

It is not just low end.

It is:

- wood
- strings
- fingers
- air
- and the room

I often allow more of the room to remain in the sound.
Because that is what makes the instrument feel real.
An acoustic bass should never sound like a frequency.
It should sound like a presence.

The Real Goal

When I record bass, I am not simply capturing sound.

I am capturing:

- depth
- punch
- authority
- and the emotional center of the record

When the bass is correct, the listener may not know why the record feels powerful.

They simply know that it does.

When it is wrong...

Everything feels smaller.

Vocals Must Carry Truth and Authority

The vocal is where the listener decides whether they believe the record.

Before I place a microphone, I have a conversation with the artist and producer about intentions.

I want to know:

- Is the vocal meant to feel intimate and close?
- Should it feel powerful and forward?
- Is it vulnerable, aggressive, elegant, or cinematic?

Those answers determine everything that follows.

Microphone Choice Is Emotional, Not Trend-Based

I choose microphones based on how they present the human voice in the context of the song.

My primary tools often include:

- Neumann U67
- Neumann U87
- Neumann TLM 170 R

The U67 gives me warmth, body, and a musical thickness that flatters many voices.

The U87 gives me presence and familiarity a sound people recognize immediately as "record quality."

The TLM 170 R gives me control, detail, and neutrality when I want to shape the tone more precisely downstream.

I am not chasing hype. I am choosing a voice for the voice.

I also select other microphones based on the vocalist and the style of the song.

If the record calls for a vintage vocal character, I may use an AEA R44C. That microphone immediately places the voice in a 1940s–60s world Jazz, Blues, and Crooner records where the tone feels classic, intimate, and authoritative.

For a true crooner sound, I often reach for a Neumann U47. It delivers size, authority, and a sense of presence that feels larger than life without becoming harsh.

For Jazz vocals, I may use a Neumann M49. It allows me to capture nuance, depth, and a natural musical balance that sits beautifully inside the track.

When I want air and shimmer, I may use an AKG C12. It opens the top end in a way that feels elegant rather than brittle.

One of my all-time favorites is the Telefunken ELA M 251. It gives me an open, silky, lush vocal that feels finished even before the mix begins.

The U67 remains one of my go-to microphones when I want weight and thickness in the vocal.

The U87 is a microphone I used extensively on Rick James, and it remains a reliable choice when I want presence and familiarity.

And today, the TLM 170 R is often my modern go-to. It is powerful, controlled, and captures the vocal with remarkable clarity and minimal coloration.

All of these microphones require proper mic technique from the vocalist.

Distance, angle, and control of dynamics become part of the performance.

A great microphone will not fix poor technique but in the hands of a skilled vocalist, it will reveal everything that makes the performance great.

The Chain Must Protect Performance

The signal path should preserve what the artist is doing not change it beyond recognition.

I prefer clean, musical gain staging with compression used as control, not as a crutch.

If I use compression on the way in, it is subtle and intentional just enough to keep the performance consistent without removing dynamics.

Because dynamics are part of the emotion.

The Room and Positioning

Just like instruments, vocals exist in space.

Distance from the microphone matters.

A slight move closer changes intimacy. A slight move back changes size and air.

I coach position as part of performance:

closer for intimacy

slightly back for power

controlled movement for dynamic shaping

Pop filters, reflection control, and the immediate environment are adjusted to keep clarity without removing life.

Headphone Mix Creates Confidence

A great vocal performance requires confidence.

The headphone mix must support the singer.

I make sure the artist hears:

enough pitch reference

enough rhythm section

enough of their own voice

When the headphone mix is right, the performance improves immediately.

When it is wrong, the artist struggles and the takes suffer.

Comping and Integrity

I capture multiple takes when needed, but I am always listening for the take that feels like a performance not a construction.

Comping is used to present the best version of the performance, not to manufacture one.

If the emotion is not there, no amount of editing will fix it.

Background Vocals Must Support, Not Compete

Background vocals should enhance the lead, not distract from it.

I think in terms of width and placement:

tighter stacks for focus

wider stacks for size

Microphone choice and distance may differ from the lead to create separation and depth.

The Goal

A great vocal recording does not sound processed.

It sounds inevitable.

It feels as though the artist is standing in front of the listener, delivering something real.

When the vocal is right, the record connects.

And when it is not... nothing else can save it.

Overdubs Must Match the Sonic Picture

When I build a record, I am not stacking sounds.

I am preserving a picture.

The picture is created on the tracking date:

the room

the placement of the musicians

the relationship between instruments

the way the microphones capture that space

Once that picture exists, every overdub must respect it.

If it does not, the illusion breaks.

The Rule: Match the Original Environment

When I overdub instruments that are part of the rhythm section, I recreate as closely as possible the same microphone environment used on the original tracking date.

That includes:

room microphones in the same positions

similar distances from the source

comparable gain structure

consistent spatial perspective

If I am overdubbing percussion, I set up the room microphones exactly as they were during the rhythm tracking session.

The goal is simple:

The listener should not be able to tell that the percussion was added later.

It should feel as though it was always there.

This approach also applies to other acoustic instruments:

guitars

additional piano parts

acoustic textures

any instrument that interacts with air and space

If the original track captured a real room, the overdub must live in that same room.

Acoustic vs Synthetic Sources

This principle applies most strongly to acoustic sources.

Instruments that produce sound in the air percussion, guitar amps, piano, horns must match the sonic environment of the original session.

Synthetic instruments are different.

synthesizers

drum machines

programmed elements

These do not rely on room interaction in the same way.

They can be placed more freely in the stereo field or treated as separate layers.

However, if I choose to amplify or reamp a synthetic sound, I bring it back into the physical world.

And once it enters the room, it must follow the same rules.

Reamping as a Creative Tool

Sometimes I reamp signals deliberately.

A clean DI track can be sent back through an amplifier or speaker system and recorded in the room.

This allows me to:

add air

add dimension

match the spatial identity of the record

When I do this, I treat the reamped sound like any other acoustic source.

It must sit inside the same sonic picture.

Why This Matters

Many recordings sound disjointed because overdubs are treated as separate events.

Different rooms. Different microphone approaches. Different perspectives.

The result is a record that feels assembled rather than performed.

I do not build records that way.

I build records that feel unified.

When overdubs match the original environment:

the depth remains consistent

the space feels believable

the record feels like one performance

That is the difference between a collection of tracks and a finished record.

And the listener can feel that difference immediately even if they do not understand why.

WHY MOST MIXES FAIL BEFORE THEY BEGIN

Most people believe the mix is where a record is fixed.

It is not.

The mix reveals what was done during the recording process.

If the foundation is weak, the mix cannot make it strong.

If the relationships between instruments are unclear, the mix cannot create clarity.

If the room, placement, and performances were not handled correctly, the mix becomes a rescue operation.

I do not build records that way.

The Mix Is Not a Repair Shop

When I begin a mix, I am not trying to solve problems that should have been solved during tracking.

I am enhancing decisions that were already made correctly.

The difference is significant.

A well-recorded track allows the mix to move forward with intention.

A poorly recorded track forces the mix to constantly compensate.

That compensation leads to:

- excessive EQ
- over-compression
- unnatural space
- loss of dynamics

And a record that feels smaller instead of larger.

Balance Before Processing

Before I reach for any EQ or compression, I focus on balance.

Level and placement determine more about the mix than any plugin ever will.

If the drums, bass, piano, guitars, horns, and vocals are balanced correctly, the record begins to feel right immediately.

Many engineers skip this step and begin processing too early.

That creates complexity where clarity should exist.

I build the mix from the foundation up.

The Sonic Picture Must Remain Intact

Everything established during recording must remain intact during mixing.

The room. The depth. The relationships.

If I destroy that in the mix, I destroy the record.

That is why I respect the original sonic picture.

I enhance it.

I do not replace it.

Space Is Part of the Music

Space is not something I add at the end of a mix.

Space is already present if the record was captured correctly.

Reverb, delay, and ambience should support the existing space not compete with it.

If I add too much artificial space, I lose the realism of the recording.

If I add too little, the record can feel flat.

The goal is balance.

Dynamics Create Emotion

A mix without dynamics is a mix without emotion.

I do not compress everything into a narrow range just to make it loud.

I allow the record to breathe.

That breathing creates movement.

That movement creates feeling.

And that feeling is what connects the listener to the music.

The Real Truth

When a record is captured correctly:

the mix becomes easier

the decisions become clearer

the result feels natural

When it is not:

the mix becomes difficult

the decisions become reactive

the result feels forced

That is why most mixes fail before they begin.

Not because the engineer does not know how to mix.

But because the record was not built correctly from the start.

And once that foundation is compromised, everything that follows becomes harder.

The Advantage of Doing It Right

When you approach recording the way I have outlined in this guide, you give yourself a significant advantage.

The mix becomes an extension of the recording not a correction of it.

And that is where records begin to sound the way they are supposed to sound:

Clear. Deep. Powerful. And emotionally real.

If you want your records to feel that way, you cannot wait until the mix to begin thinking about them.

You must begin at the very start.

PSYCHOACOUSTICS: CREATING THE ILLUSION OF BEING IN THE ROOM

A great record does more than play back sound.

It places the listener inside an experience.

When this is done correctly, the listener does not think about microphones, speakers, or headphones.

They feel as though they are in the room with the musicians.

That feeling is not accidental.

It is the result of deliberate decisions based on how human hearing works.

That is psychoacoustics.

The Brain Listens for Clues

The human ear does not simply hear sound.

The brain interprets location, distance, depth, and size using subtle cues:

- timing differences between left and right
- level differences
- early reflections from walls and ceilings
- the relationship between direct sound and room sound

When these cues are captured correctly, the brain builds a believable picture of space.

When they are inconsistent, the illusion collapses.

Direct Sound vs. Reflected Sound

Every sound you record contains two elements:

- direct sound (the instrument itself)
- reflected sound (the room)

The balance between these two determines how close or far the instrument feels.

More direct sound = closer, more intimate. More reflected sound = farther, larger, more cinematic.

I do not guess at this.

I decide it before the microphones are placed.

That decision is then reinforced throughout tracking, overdubs, and mixing.

Consistency Creates Believability

If the drum room, the bass, the piano, the horns, and the vocals all suggest the same space, the record feels real.

If each element suggests a different space, the record feels assembled.

That is why I match the sonic picture across overdubs.

It is not only a technical choice.

It is a perceptual requirement.

The listener's brain is constantly checking for consistency.

When it finds it, it relaxes and accepts the illusion.

Depth Is Built in Layers

Depth is not created by one effect.

It is created by layers of information:

close microphones for detail

mid-distance microphones for body

room microphones for space

Each layer contributes to the final image.

Remove one, and the picture becomes flatter.

Balance them correctly, and the image becomes three-dimensional.

Timing Matters

Very small timing differences shape how we perceive width and depth.

A few milliseconds can change whether something feels centered, wide, or detached.

This is why microphone distance and placement are critical.

It is also why I avoid careless phase relationships.

Phase is not an abstract concept.

It directly affects how solid or hollow a sound feels.

The Role of Dynamics

Dynamics are part of spatial perception.

When a performance breathes, the room responds.

When everything is flattened, the sense of space disappears.

That is why I protect dynamics from the beginning.

Because dynamics are not only musical.

They are spatial.

The Result

When all of these elements are aligned:

the room makes sense

the instruments belong together

the depth feels natural

the performance feels alive

The listener does not analyze any of this.

They simply feel it.

That is the goal.

Not perfection.

Believability.

Because when a record is believable, it connects.

And when it connects, it lasts.

What Separates a Recording from a Record

A recording captures sound.

A record captures a moment that people want to return to.

That difference is not created at the end of the process.

It is created from the very beginning.

It is created in:

the conversation before the session

the preparation of the room

the placement of the musicians

the choice of microphones

the discipline of performance

the consistency of the sonic picture

And it is protected all the way through the process.

Most people focus on results.

I focus on decisions.

Because the right decisions, made at the right time, create results that feel inevitable.

Records That Last Are Built, Not Assembled

There is a difference between assembling tracks and building a record.

Assembled tracks may sound impressive for a moment.

But records that are built with intention:

hold up over time

reveal more with each listen

create emotional connection

Those are the records people keep.

Those are the records people study.

Those are the records people reference when they want to create something meaningful.

Your Advantage Moving Forward

If you apply what you have learned in this guide, you will begin to hear music differently.

You will begin to recognize:

when a room is helping or hurting the recording

when microphones are placed with intention or by habit

when a performance is being captured or constructed

when a mix is revealing the record or trying to repair it

That awareness is your advantage.

The Next Level

Everything in this guide is focused on capturing the record correctly.

The next level is finishing that record in a way that preserves its depth, clarity, and emotional impact.

That is where mixing becomes a continuation of the recording process not a correction of it.

And for those working at the highest level, the same principles of space, depth, and realism extend even further into immersive formats, where the listener is no longer in front of the music, but inside it.

Those are subjects I explore in more detail in my advanced guides.

Final Word

If you are serious about your music, you now understand what's required.

Great records do not happen by accident.

They are created by people who understand what matters and refuse to compromise it.

If you want your records to feel:

- clear
- deep
- powerful
- and emotionally real

Then the process must reflect that from the very beginning.

Work With Ralph Sutton

Ralph Sutton works with artists, producers, and labels who are intentional about how their records are captured and brought to life.

If you've read this far, you already understand what your record needs.

Visit RalphSutton.com to book a session or consultation.

Continue Your Development

For deeper technical application and working methods, explore the extended professional edition of this guide.

For advanced study in mixing and immersive audio approaches, including Dolby Atmos, additional publications are available through Ujamaa Media.

Build the record with intention.

And finish it at the level it deserves.