

Finishing your Guitar
With
Nitro-Cellulose Lacquer

By, Ron Kirn

New, Revised Edition

Finishing your Guitar
With
Nitrocellulose Lacquer

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Ron Kirn

Everything you need to know to
Finish your guitar
In genuine nitrocellulose
lacquer

A "How To" manual

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About this Book

There are many publications available with great instructions regarding guitar construction. The one problem I have detected in most of them is, they assume you have a complete wood working shop with \$50,000.00 worth of tools. Other assumptions are, you have a professional spray booth for painting your project, and have been applying Nitro-Cellulose Lacquer for years. This is not at all realistic for an amateur accumulating components waiting to assemble a professional player's guitar.

I offer this, so that anyone with a fundamental understanding of basics and a "do it yourself" aptitude can build and finish a great guitar on their back porch or in the garage.

Discussed here are my experiences as I have constructed and finished several solid body guitars similar to those of Fender. As I'm writing this, I am constructing several more. Therefore there may be some miscellaneous ramblings occasionally as I make new discoveries. Some topics are not discussed in detail because they are explained quite adequately in the web sites listed. Please check them out before writing and raging on me.

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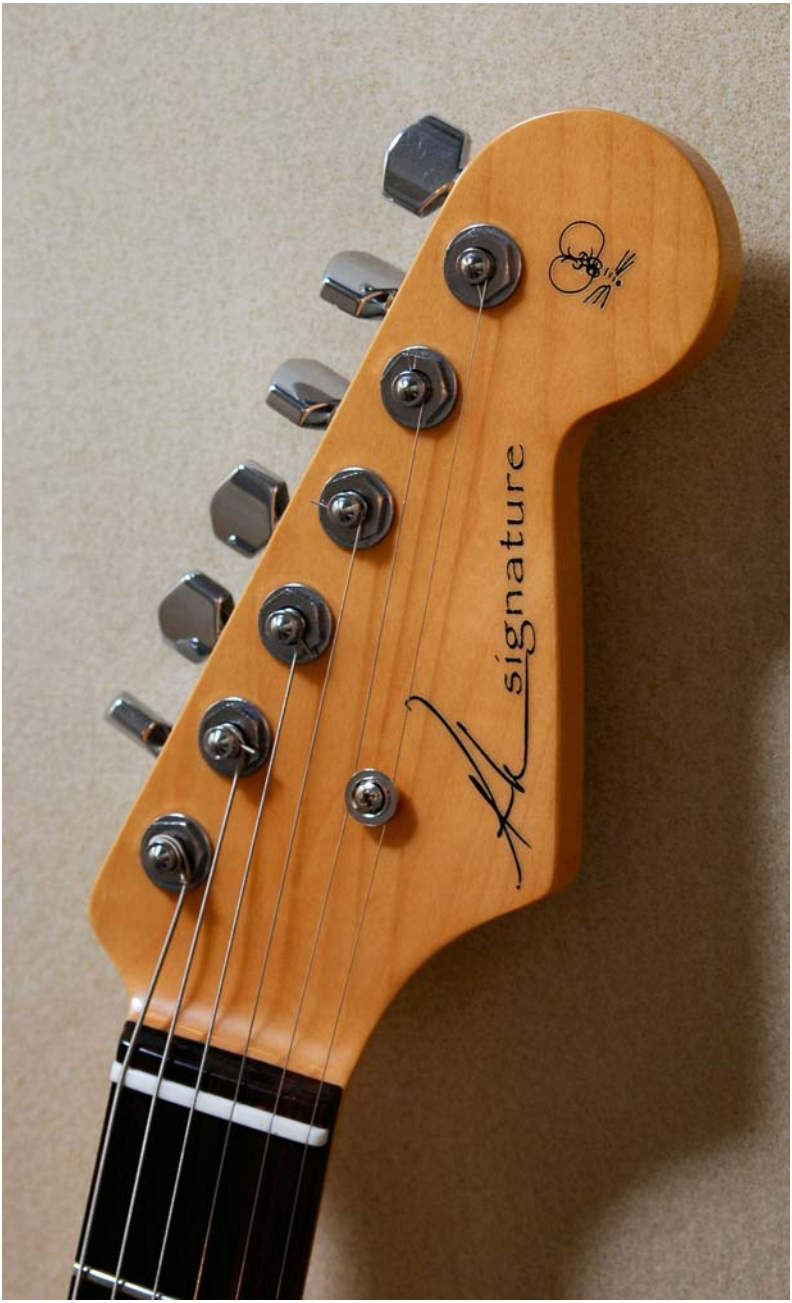
Also:

There exists in the aftermarket, reproduction parts, made well enough to fool all but the best appraiser. I do not recommend you constructing a copy of existing guitars for any other purpose than your own edification.

Constructing a counterfeit of any registered trademark product with the intent to sell, or otherwise distribute, is a violation of State and Federal laws.

Build it, play it, fool your friends, with it, but do not sell it as an original.

You don't want any un-scheduled stays at a Federal facility with a big ugly sweaty roommate that takes a bath every couple of weeks if he needs it or not, a roommate that is looking for a nice young dude to get very, very friendly with. You don't want that do you?



Ron Kirn Signature Guitar

Preface

This is a new edition of the books I had previously written. I have combined the books discussing the application of Nitrocellulose lacquer and the one that introduces a great product available locally in many areas that can be adapted to use as a quick finish for those that are patience challenged. Those books were written over a period of time beginning in the late 80's and carrying through the 90's.

Why so long. Well initially they were quite basic, black and white and just plain info. But as they were circulated, some fell into hands of former Fender employees, and repairmen, many who expressed great relief at what was finally being said.

They began sending me their anecdotes, and other information they thought would add to the information I had comprised. Thus I rewrote, and rewrote again and again, each time adding more of the information that had been sent to me.

Prior to including the tid-bits, I would always check and recheck the source and secure permission before adding anything.

One elderly repair man sent me information on refinishing guitars that was quite well said. It was redundant too much of the information I had composed, but said differently, thus I sought his permission to use it and such was granted.

Over time I have received several mentions that some of the content of my book appeared on other sites. Some of those sites claiming exclusive ownership. This led me to write and re-rite the books several times to eliminate complaints, to no avail. Thus to prevent any further confusion, I have completely re-written it from the ground up.

 Ron Kirn

Chapter One:

WHO THE HECK AM I?

For me the love affair with the guitar began one fall day in what I recall as 1960. I was riding home from Lake Shore Junior High, in the big yellow bus, and my friend David Goddard insisted that I come by his house. He has something he wanted me to hear.

Upon arriving, he fired up the tiny record player, yep, real vinyl records and dropped the needle.

The sound of a guitarist strumming A, A, A, G, G, G, F, F, F, E, electrified me. The sound of Bob Bogle tearing up that Strat, playing Walk, Don't Run, gave me goose bumps. It wasn't long thereafter I had a copy of the album, and was lobbying my Father for a guitar.

David went on to become a great guitarist playing with some of the largest acts in Las Vegas, and his Brother went on to play with the Atlanta Rhythm Section, a top pop group of the 70's.

Anyway, for me it was set, it was guitar, I rapidly forgot about the accordion, ACCORDIAN??? Yep, that lasted about 5 seconds.

Shortly thereafter, my Dad surprised me with a Black and gold sparkle Silvertone from Sears. A perfectly horrible guitar, but had it not been so bad, I would probably never cultivated the interest in working on and building guitars.

It was so bad; I immediately began working on it. The first issue was intonation. I have always had a pretty good ear for hearing discord, and this thing was driving me nuts. So, screwdriver in hand, I began the journey that brought me here, today.

I think even my Dad could tell that, one: I was gonna stay with the guitar, and two: That the Silvertone sucked. I just had to have a Fender.

In a relatively short time, we were all headed to Savannah, Georgia, a Friend of my Dad's played guitar for Xavier Cugat, and had something he thought I'd be interested in.

God! I couldn't believe it, here I was in the back seat of the '61 Pontiac Bonneville, on the way home holding a genuine Strat. He had paid 150 bux for it, which back then was a hellova lot of money, but no where near the 249 a new one cost.

I still remember.... Picking out Penetration on that ride home, which puts the time line somewhere around early '64... but . . . oh boy, when I got home. The first thing I did was find that screwdriver. The Guitar was a sunburst, and I hated sunburst.

Completely disassembled, I soaked the body and neck with the finest

grade Strypeez paint remover I could find, I still remember the house and the carport, outside scraping, then sanding that thing. I can only shudder at how much in today's dollars that little refin cost in intrinsic value. It was a Tobacco burst, so it was old, way old, by today's standard.



That would be yours truly on the left with the
Strat, now Black in 1964.

Well, I played the Strat for a few years, then fell in love with the Jaguar, a Candy Apple red Jaguar to be precise, and traded the Strat, in at Marvin Kay's Music center, and now I had a Jaguar. . . sucked.... Looked great, but sounded like crud.

That lasted until our group started sounding good, then my parents got tired of all the noise, and encouraged me to move to Folk Music, so out with the Jaguar, in with the Martin D 12-20. God, was that thing hard to tune. So within a year, it was gone, and I had a Martin D-35, what a great guitar. Thanks Dad, I know you're hearing me from somewhere. I still have that guitar today.

So that pretty much brings us to today, and the task at hand, finishing your guitar. But before we start squirting, let's get a handle on what we will be using.

Chapter 2

'Sup with Nitro.

First, without getting into the exact chemistry of many finishes available, and used in guitar manufacturing, suffice it to say that they are all basically plastic coatings. Most of them feel like plastic, smell like plastic, and sound like plastic. A few, a very few, feel alive. Nitro-cellulose is the only one of those that can breathe to some extent and be easily applied by an amateur with a bit of coaching.

Pick up a guitar finished with the commonly used catalyzed polyurethane, and it feels like a piece of shiny plastic. Embrace a guitar finished in nitro-cellulose, run your hands over the surface, down the neck, and it feels alive. It feels like, and has the warmth of your lover's skin.

A guitar, a good guitar, is made of wood, an organic material that grew into a mature tree and was selected to spend time as a musical instrument. Nitrocellulose is made from organic material also, and is rumored to enhance the sound of an instrument over time.

Nitro has been around for a heck of a long time. As such, it has been used by quality guitar manufacturers just about since it's inception.

Why? Well I'm sure you all think it's because of the mystic qualities, and how it enhances the sound. I bet you think that a guitar finished with Nitro-Cellulose has the sound of a myriad of angels singing. NOT!!

Far more than the finish alone contributes to the overall sound of a guitar. A guitar is an amalgam of many different aspects coming together. If done correctly the sound is remarkable. The Finish on the guitar is only one of those many aspects.

Nitro was immediately embraced by the guitar industry for one reason in the early part of the 1900's. It dries at warp speed and is one of the easiest of finishes to apply. Period. That cuts labor costs and improves the profit margin. Now the good news.

As those early guitars seasoned, their owners noticed that the sound mellowed. The over-all tone improved. Well darn, the stuff was cheap, it dried fast, was easy to use and appeared to make the guitar sound better, or at least many felt it did. Well what do ya know? There is a guitar Muse. Now that's what you want isn't it?

Let me interject, this here, regarding the sound of a guitar. Many have followed my many postings in the various forums, and know how strongly I stress the point that often we are far more influenced by what we THINK we will hear, than we are, by what we ACTUALLY hear. For instance, if someone shows you two identical guitars and tells you one is

finished in Nitro and the other is done in Poly, and then you play each, most will hear what they think is a better sound from the one done in Nitro. This is a psychosomatic effect. In reality, it would take a rather sophisticated scientific sound lab to detect any real difference.

Nitro is a natural finish. Without getting too technical. Let me just say it's derived from cellulose:

Cellulose: a carbohydrate of high molecular weight that is the chief constituent of the cell walls of plants. Raw cotton is 91% cellulose. Other important natural sources are flax, hemp, (Cool huh?) jute, straw, and wood. Cellulose has been used to make paper since the second century A.D. Cellulose derivatives include guncotton (fully nitrated cellulose), is used for explosives; celluloid (the first PLASTIC); and cellulose acetate, used for plastics, lacquers, and fibers such as rayon. Whoo Hoo, didn't know I was that smart, did you?

I could put more in here about this stuff, but I don't want you to doze off yet. Just know this, Nitro is easy to use, dries pretty darn fast and polishes out like a champ. What more do you need? So, let's do it.

Today there is much hype surrounding Nitrocellulose Lacquer. With rare exception none of the large well known guitar manufacturers are producing guitars finished in the real stuff. That's NONE as in zero of them.

Huh, ya say? But the ad says real nitrocellulose lacquer.

Well welcome to the wonderful world of marketing and how manufacturers and advertising agencies are allowed to use our language.

The Federal Trade Commission determines what a word means in the context of advertising. In this situation the word "real" has NO meaning according to the Federal Government. Now if they had used the word "Genuine" that would have a specific meaning. So just what do they mean by "Real" Nitro.

Cellulose is a component of wood and/or other organic material. It is chemically extracted and used in various products. Therefore if a cellulose component is added to a chemical blend, it can be so called. If it contains cellulose that has been extracted by the nitration of cotton or other celluloid materials it can be called nitrocellulose. It is entirely possible to manufacture nitrocellulose Antiperspirant, Toothpaste, Dish-washer soap, and Seat covers. Get the point.

Further adding confusion, is that today about any sprayed finish is generally referred to as lacquering an object, where as, if it's brushed, its

generically considered varnish. Example, "I'm gonna get a couple of rattle cans of Rust-o-leum and lacquer the patio furniture." Or, "I'm gonna pick up a can of Valspar and a few brushes, and go varnish the deck of the boat." So if you have a water-based binder that contains nitrated cellulose it can be called nitrocellulose, nitrocellulose lacquer if you want to stretch it.

Many of the products being used regularly on very expensive guitars have nothing in common with the lacquers used in the 50's except by the most liberal application of a definition. This is why some "Nitrocellulose" finished guitars feel sticky, or otherwise funky when your hot sweaty hands get to 'em half way through the second set.

Now why would a guitar manufacturer do that kinda crap? Well, in the 80's guitarists were getting really tired of the junk that had been produced through the 70's and 80's, They were reverting back to the "Pre CBS" years, those guitars were finished in genuine Dupont Nitrocellulose as well as Nitro from other suppliers, and the quality, playability and sound of those instruments was associated with nitro. The Manufacturers, who are fast at adapting to whatever is "in the wind" heard that you wanted Nitro, so they began looking for something that could fill the need.

They couldn't use the real stuff, it was way too labor intensive. They had been using poly for 20 years which hardens chemically at light speed, and the manufacturers sure weren't going to hold up production while everyone waited on Nitro to harden. Therefore the search went out to the chemical coatings suppliers for something that could be advertised as Nitrocellulose, but had the production advantages of polyurethane. The mystery goop you see being used today was the winner.

Now in defense, some water based finishes are great. Ferrari uses one on their 1.2 million dollar Ferrari Enzo. But you don't play an Enzo. But as good as they are, they are not now and are never gonna be the same as the finishes used on the guitars of the 50's. Ya don't find that info on the Guitar manufacturer's web sites do ya?

The guitar manufacturers are fast to pickup on the "buzz" circulating among players. As soon as someone mentions some little gizmo does wonders, wham. We are inundated with adds telling how this guitar or that has that exact thingy, and you just gotta have it or you're a looser.

Why am I bothering to write this book then? Well, real genuine nitro is a natural product. It has a feel to it you simply cannot find in synthetic finishes. It feels like the skin on your Grand Daughter's cheek, so nice to touch. You ain't getting that out of Poly. Poly feels like plastic, because that's what it is. Some like it, that's fine, I'm not pointing my finger at

Chapter 3

Who ya gonna call?

'em. It's just some like nitro too, and that's darn near impossible to find today, genuine Nitro that is.

Also, let me mention that there are many offering "genuine" nitro in rattle cans. While many are excellent finishes, none are the same formulation as the Nitro used, in Fullerton, Kalamazoo, or Nazareth, in the 50's and 60's. They cannot be. It's simple deduction. Something has to be added to get the stuff out of the can. So even if they did take some 1962 Dupont Duco, and put it in a rattle spray can, they would have to add some chemical to it to force it back out when you press the tip. That changes the formulation.



The stuff you will need to complete this job can be found in most metropolitan areas. Let your fingers do the walking.

You will need:

Beer, I recommend Amber Bock and a cooler

Paint remover, this is your choice; just buy one that will remove your old finish.

Old newspapers

Rags,

Beer, and more ice for the cooler

Steel Wool, 0000, and 000 (ask the paint store dood)

Sand paper, #180 and 220 dry and 400, 600, 800 wet or dry

Lacquer thinner, several gallons.

Nitro-Cellulose lacquer (pre tinted if you're smart)

Aniline dyes (if you're not smart) (but you gotta be smart to use 'em)

Sanding Sealer

Beer, good beer and a lot of it if you bought the Aniline Dyes

If you can, a small compressor and spray gun.

Did I mention Beer?

The Sand paper, steel wool, and sanding primer can be found at an auto body refinish supply house. And note, not all sandpaper is created equal, don't even think about the cheap shi* you get from the mail order too; suppliers, that stuff it from China or India and is a joke. I strongly urge you to find a local auto body paint supply store, they will carry 3M. It's the absolute best.

Paint Remover, any good painter supply store or many hardware stores can supply this. Get your lacquer thinner from wherever you get your Nitro-cellulose. You can get the lacquer from Stewart McDonald, www.stewmac.com/, The Guitar ReRanch, www.reranch.com/, Luthier's Merchantile, www.lmii.com/, or Sherwin Williams paint's www.sherwin-williams.com/ I use Sherwin-Williams. The number is: 24% Solids Finishing Lacquer, Gloss T75 C 40 530-1262. Also some Lowe's and Ace Hardware Stores carry Deft; it too, is a Nitrocellulose Lacquer

I might note here, those wishing to have the real stuff, consider, the cans of spray nitro are NOT the same formulation as the Lacquers used in the 50's. Those are only available in the raw state, in cans, and will require a spray gun to apply.

You may be able to find additional suppliers, but if these guys don't have what you're looking for. If you are having difficulty, search the yellow paged for Custom Kitchen cabinet shops. They often use Nitrocellulose lacquer and will be able to tell you where they get theirs.

The spray gun can be purchased from a local flea market. There is usually a vendor that carries imported tools. Pay about \$25.00, or I have seen a lot of them on e-bay.

The compressor is the most expensive part, a small one will be at least \$100.00, again check e-Bay or the classified ads. Get your friends to share the expense and paint all their guitars.

Check out Harbor Freight, www.harborfreight.com/ they have the same Heavy Duty spray gun I use for \$18.99. Their cost for the detail gun is \$18.99 too. The 2 horse power 4 gallon pancake compressor is \$99.99. If you get a compressor you must get one that has a tank. Don't ask why, just do it. O K, it equalizes the air flow. Those without a tank will pulse the air flow at what ever cycle the piston is moving. That can make the spray gun spit.

I have been getting catalogues from Harbor Freight for years, and I'll tell ya. The price can change from day to day. In fact, as I'm writing this, I checked the web site; the compressor is \$129.99 there. The catalogue I just got this week has it at \$99.99.

If you're serious about painting guitars, you should have at least 2 spray guns, 4 would be better. I have about 20.

Everything else can be found at any good painter's supply house or automotive paint supplier.

Note this, if you will be using a spray gun and compressor, use a good quality lacquer thinner, the junk available at most paint departments has too much water dissolved in it and will cause you much grief. < read that again. Now, go back and read that again.



Chapter 4

MAKING LOVE TO A BEAUTIFUL BODY.

If you are refinishing a guitar consider this. The paint you are changing to will not do a thing to the tone, nothing, nada, zero, zip. That is, it the real world. Now in the realm of psychosomatic effect, the change can be quite extraordinary. Therefore if the guitar presently has a finish on it, let it become the primer/filler. Fill any dings. I recommend using BonDo, auto body filler available at about any auto parts store, but allow the old finish, if in tact, to become your primer. BonDo is easy to use, hardens in minutes and sands quite easily. If you insist on using wood filler, it should be a lacquer base, and will have to dry for hours before being ready to work, and then it will shrink slightly over the next few months, and leave a slight blemish in the surface long after you thought you were done. Use the Bondo.

If you must, Home Depot and Lowe's has a nice lacquer based filler/putty. It dries in about 1 hour, and sands easily, but it will still shrink slightly. NEVER use that wood putty that looks like sawdust mixed in glue. I think is'd called Plastic Wood. It's much too coarse. My preference is good old auto body filler Bondo mentioned above. It chemically hardens in about 5 minutes. This reduces downtime so you can keep on working.

If there are any pressure dings on bare wood, where something has bumped into the body, try this. Wet with a drop of water, then apply a damp paper towel, then take an ordinary iron, and place it over the ding. This will force steam into the wood fibers causing them to expand. Allow to dry, then sand with the 320, and away you go. This may take a few times on deep dings.

Even if you have a deep ding, one you know will require filler, use the steam method first, this will reduce the size of the ding, thus requiring less filler, less shrinkage, and less cussin' in a few months.

If you insist on removing the old finish, try Strypeeze paint remover. If you can, find one specially designed for Polyurethane. It will remove about anything.

A problem many will encounter when removing a finish is the color of the old paint will become so dilute in the stripper, it can act as a stain and soak back into the limber. It's one of the hazards and one of the reasons I recommend repainting an opaque guitar with an opaque finish. The second is, often an opaque finish is usually applied over what can only be called ugly wood. Cover that stuff up.

Note here that the chemistry necessary to remove old paint and thin lacquer are not particularly user friendly. In fact when I had cataract surgery in both eyes at age 40, the doctors determined that it had been due to my being up to my elbows in that stuff most of my life, so read

the labels and follow the instructions, and cautions.

But, back to the stripper.... Put down a few ones, and she'll give ya an eye full... Oh wait, were talking about paint stripper.... you simply follow the directions on the container, and repeat until the paint is removed.

Note that many of the plastic components used in guitars are plastic, and very susceptible to damage resulting from contact with the solvents used in stripping, so you must be careful to avoid getting the paint stripper, or other solvents on them even for an instant. So protect, bindings and other plastics that may come into contact with the thinner and/or paint removers. < Read that again too.

If you're stripping a hollow body instrument, use old newspapers and/or rags to fill and protect the insides. Some glues used can be weakened by the solvents or the fumes emanating from those solvents, so just be careful.

Once the old paint is stripped, I would recommend going over it with sandpaper. If you will be applying an opaque finish, 220 grit is fine, and will actually work for a transparent finish, but if you are going for that deep shimmering luster in a figured grain, move on to 320 grit, and sand it again, after you think you are through.

Take the sanded body out into the sunlight and allow the shadows to fall across the body, this will allow you to see any slight imperfections that need attention. Take care of 'em and you're ready to roll.

On bare wood, placing a damp paper towel over the body, and Ironing it, allowing the steam to penetrate into the wood will cause much of the grain to raise. Allow to dry a few minutes, then sand again, and the resulting surface will be even smoother, and more resistant to the paint causing the grain to raise.

Chapter 5

Ready to roll....

Now that the body is stripped, if you're going to add stain, be aware that any spot that has been filled will accept the stain at a different rate than the surrounding natural wood. Also any place where some foreign material is will accept stain differently, this includes, but not limited to, blue, old filler, sealer, finish, food stains, or any other substance that is not the wood itself. Therefore it's going to require a great deal of skill or a miracle to get even coverage.

Make you a handle and screw it to the neck pocket area for a body, and onto the heel for the neck. And make arrangements for a place to place the body or neck in a dust-free or reduced dust area. Do it now so you won't be walking around with a wet guitar body in one hand, trying to find a place to place to allow it to dry.

When I do a typical Fender type body, I will give the body a preliminary "wash" with a thinned mixture of dye and the appropriate thinner. Just be certain it's dry before shooting the first coats of whatever you're using.

I will put this thinned color down, then after sealed, mix a "clear coat" that is tinted to the correct shade, and allow that to bring the color up to the intensity needed. If you can locate a Sherwin Williams Chemical Coatings shop, they will sell you an ounce of their universal dye. It is wonderful stuff, it mixes in water, alcohol, or lacquer, ain't cheap though. To find a Sherwin Williams Chemical Coatings shop, stop by any Sherwin Williams paint store and ask 'em where the Chemical Coatings store is located.

But back to the beginning..

If you're finishing a body with a very pronounced grain, like Ash, Mahogany, Oak, etc, paste filler is recommended. I use Bartley Paste Wood Filler, available at woodcraft.com or Google it. Simply choose one and follow instructions on the cans, different makers have different recommendations.

Once you are ready, apply a sealer. Usually a sanding sealer, which is nothing more than a clear, with filler added to make sanding easier. If you are using a transparent finish, the clear sealer is a must, particularly on an open grain lumber like, Ash, Mahogany, Oak, etc.

Once your lumber is filled, then dyed, move on to the sealer. Tip: on very old bodies, often oils will have been applied or will have worked through worn areas in the original finish from skin into the lumber. This will cause "fish eyes" where the paint recoils from a small area leaving an ugly blemish. If this is the case, try giving the body a coat or two of

shellac, yep, good old shellac. In fact Bull's Eye has a Shellac based sanding sealer available at many paint departments, so you kill two birds with one coat.

Once sealed, let it dry for at least a day to properly harden. Even very fast drying finishes like Lacquer will continue to harden over time, so even though it feels bone dry in a few minutes, it remains very soft for a very long time. Try pressing a fingernail into a concealed area . . . see what I mean.

Once dry, lightly sand, I'd say about 220, then apply a second coat, and repeat.

If you're doing an opaque coat, try this, at your local auto parts store, over by the touch-up paint, they will have a gray primer. It's called a Filler Primer. Great stuff, it has a high solids content, which means it build up rapidly, and sands the next day, or later that day, if you start early enough. It sands beautifully, and is a Lacquer product.

If you're getting panicky about all the stuff that's NOT nitrocellulose lacquer. Relax; few know what Leo's Fender did in the 50's and 60's. Here's the process.... Dye wood; apply Fullerplast, which was a catalytically hardened sealer yep much like Poly is today however Fullerplast is NOT a poly. Then if it was a solid color, Dupont Lucite not Duco, was applied. Lucite was the Acrylic lacquer and used for Solid colors as well as Metallics. After that, Clear Nitro Lacquer was applied. So an acrylic filler primer is right on target for chemical accuracy.

Just remember when taking a break, do not lay the seemingly dry work on anything, it must be suspended for several days, otherwise the "dry" surface will pickup an imprint of whatever it was laying on.

Chapter 6

Squirting the goop.

Before you put down a color coat, or the clears, check the body's sealed surface again. It should be smooth at this point, with virtually no grain apparent in the surface. If you are still seeing the grain, apply more sealer, here's how.

Ok, the following pertains to both filler/primer and sanding sealer. Spray a complete coat, and then allow it to flash. Flash means for the sprayed coat to become tacky dry to the touch. Now apply a second coat, and then repeat for a 3rd coat. You're done for today. Go have a beer.

The following day sand the "fuzzys" that the wet coat caused to raise, and sand the surface lightly too, now apply another wet coat. Allow to dry for a short while and repeat. You're done for today. Go have a beer.

By now you will have several coats of sealer or primer on the body, take a small sanding block with some 220 grit paper, and begin sanding, you will probably cut through the sealer to the wood, don't sweat it. Just sand until the entire surface is free of defects, grain, moths, you kid brothers PSP, and anything else that may be contaminating the surface.

Now apply a few more coats, let harden, and sand, continue this until you have a completely smooth surface free of defects, now you should be ready for the final assault.

At this phase, dust and other crud blowing around will become a problem. Try this. Clean the garage, and use your lawn blower to blow as much dust, etc, outside. Let what has become suspended in the air, settle, then blow it out again... Now take the garden hose, and squirt down the floor, washing everything out... now let it dry, shut the door, and allow the suspended junk to settle out of the air for about 30 minutes.

While this is not perfect, it beats most home remedy alternatives. Set up working arrangement to allow the body to be sprayed. I have found it best to spray the upper edged around the neck pocket and horns, then the sides, insert the handle into the support, spray the butt, then coat one side. Remove the body. Flip it over so the wet side is down, and walk away for about 10 minutes. That way, if there is any junk still floating around, it falls on the dry side, and can be dusted off when you return to spray that side.

After a few minutes, the wet side will be dry to the touch, flip it, blow the junk away, and give the side that was dry a wet coat. Flip it over and allow that to dry. Always returning the body to the support with the newly sprayed surface down.

This is the procedure you will follow for every coat, until you're through

shooting the paint. It doesn't matter if you're using spray "rattle" cans, or a compressor and spray gun.

To repeat, Spray top edged around the neck pocket and up to each horn, then each side, insert work handle into holder, and spray the butt, then spray one side, and flip the body so the wet side is down, and walk away for a few minutes.

I would not put down more than 10 coats in a long day, giving it about an hour to dry every couple of coats.

Oh, if you are doing a color, put down the color coat, checking to be certain you have good coverage... also spray a test block, preferable something that the paint cannot soak into, like a piece of glass, plastic, metal, whatever.. We want to create a "worst case" scenario.

Allow the test piece to dry thoroughly. Then give it a good sloppy wet coat of whatever you will be using for the Clear coats. This way you can determine if there are any compatibility problems. Allow it to dry for a couple of hours to give the chemistry a chance to do whatever it's going to. If it's good, you can proceed to the clear. If it has major "issues" you will have to get creative.

If you need to get creative as I mentioned above, spray another test; allow it to dry several days. Now apply a thin clear coat, allow it to dry, and check it, if good, apply another thin coat, and check in an hour. If good, do it again.

What you are doing is allowing the clear to build up, in thin coats so that the solvent can evaporate fast enough so it doesn't soak through the underlying coats. You will apply 15 – 20 coats before you put down a good wet coat. And in this situation, never apply more than 2 good wet coats in a 24 hour period.

For those that are thinking damn.. That's way too thick, I wanna thin coat like they did in the 50's, consider. . .

Nitrocellulose Lacquer continues to shrink for many years. In the first few days it will shrink as the volatile solvents evaporate about 70%. Over the next week, it will continue to shrink another 10% give or take and another 5 – 10% over the next month. Over the next several years it will continue to shrink, to a point, where a coating that was quite thick, is now very thin. Factor in that you will be removing a considerable amount of the lacquer during the wet sanding, and you can see the final finish will indeed be quite thin. Much thinner than that achieved with any of the other more contemporary finishes being used today. So, relax...

Ok, so we've shot the color coat, determined it's safe to apply the clear, and shot a boatload of clear onto the body, over a period of several weeks, I hope.

Now ya gotta let 'er just hang, and I do mean hang. Do not lay the body on anything to harden, despite how dry it may feel. It must be left to harden for several weeks at least, longer is better, not touching anything.

Many hear words like "coat" "wet coat" "dry coat" "orange peel" etc. so let me 'splain.

Coat is just that, a complete coat of even consistency applied to 100% of the surface to be finished. It can be a thin coat, probably resulting in a bit of Orange Peel effect, or a thick coat, which can "flow out" thus reducing the orange peel effect.

A wet coat is a more full coat; it can be determined by observing the reflected lights in the sprayed surface. It will appear smooth and shiny. A wet coat is about one pass with the spray gun away from major runs, so be careful.

A dry coat, is a light mist coat, just barely wet appearing as you observe the reflected lighting in the surface. This type coat can lead to an Orange Peel surface.

Orange Peel, go get an Orange, Lime, Grapefruit, notice the bumpy surface of the peel. You don't want that do ya? That results from the droplets of paint/lacquer being too dry as they hit the surface. They cannot "flow out" joining other droplets, flowing into a smooth wet coat. This is caused by using the incorrect thinner for the weather conditions, or most often, holding the spray gun/can too far from the surface being sprayed. Practice will go a long way toward preventing Orange Peel.

For practice buy a couple of the 99 cent junk rattle cans usually on sale in about any large paint department. Also get one of those little plastic handles that snap on the spray cans. Now just spray away until you get the feel of allowing the paths to overlap, the distance at which to hold the spray tip away from the work to prevent orange peel, etc, etc. For a couple of bux that cheep paint will teach ya bunches.

To see how NOT to spray paint, go to any Auto parts store, sooner or latter some kid will show up with a '83 Mustang he has painted with the rattle cans he got while on sale at Wal-Mart. See the swirls, the obvious laps? That comes from not allowing the coats to go on wet enough to melt/flow together or from trying to make a can of paint intended for

covering 5 square feet of area to cover 25 square feet. Just don't do it that way and you will be OK.

Wet sanding is . . . ta da . . . wet sanding. It requires sandpaper specifically designed for use in a wet situation, it is called "wet or dry" paper and available in grits up to many thousands, you will need some 400 grit and 600 grit. Finer grits aren't really necessary for lacquers.

Not all wet or dry paper is alike. One company's 400 grit can be considerably different from another's. Also the actual ability to "cut" can be significantly different. Over the years I have found 3M paper from your local auto refinishing supply shop is the fastest cutting and longest lasting. The Gator Grit available at a lot of Hardware stores and Lowe's and Home Depot aren't even close. I have tried Mirka, Norton, Klingspor, you name it, 3M is tops, at least for me. You may want to consider buying your most of your supplies from a professional supply shop. Simply because their regular clientele, do not have the time to be foolin' 'round with second quality products. For them time is money, therefore they tend to only carry the most efficient abrasives and products. Such can save hours on a guitar. And many of those guys working in those shops will GIVE you a wealth of information if you refinish their 15 year old Garage Sale special they just bought while you're doing yours.

Many use water as a lubricant when wet sanding. It keeps the particulates of dried lacquer in suspension and prevents them from "loading up" the paper. Loading up is when the particles that have been sanded from the surface, stick together in small lumps and get stuck in the paper, scratching the surface and ruining the paper.

For most I would recommend water, it's a bit less aggressive, but will give you better control. Many pros, me included, will use mineral spirits. It gives a very aggressive cut, and requires constant attention to keep from removing too much of the finish.

What happens is, if you sand through the finish, you can expose the raw wood to the water or mineral spirits. It will soak into the wood fibers, causing them to swell, creating a raised area in the remaining finish. This is a royal pain in the butt to fix. It's easier in most cases to strip the finish and start over. So be careful.

Here's a little known secret, it's not necessary to wet sand, you can use the a finer grit and dry sand, it's just a bit slower because the Lacquer will typically load up the sandpaper, which will require changing it often. Wet sanding, for the most part eliminates this, allowing one small square of paper to last the whole body. You will hear of professionals using the dry sanding method, but they have the correct equipment to do so. Leave that to them.

To begin, I select the initial grade paper, 400 in this case, wet about 25% of the top and begin.

I use a small piece of Corian, or similar countertop material. It is excellent. It is impervious to the solvents, and can be leveled with ordinary sandpaper in moments. To level it, I take a piece of 220 paper place on a clean flat surface, table saw table typically, and dress it until level.

To find scrap Corian, try any Kitchen Countertop Fabricator's shop and ask 'em if you can dumpster dive, they throw away tons of the stuff. It cuts with ordinary tools.

I continue using small, about a 3" diameter, swirling motion to sand the surface level as I watch the reflection of the lights above in the bodies surface.



Once the surface looks uniformly flat, dry the surface thoroughly and check by looking at the surface with something bright reflecting off it.

Here you can see the untouched areas next to the edge. Continue sanding until ALL the surface is uniformly matte in appearance.



In this shot you can see the first quarter still has a bit more sanding to eliminate the remaining “low” spots.



I always try to use a block to sand, even along the edges, This produces a much flatter finish, and simply looks more “professional”

However there are those places where it is simply impossible to get a flat block, so those handy dandy fingers will come into play.



I have been asked, why not simply sand the whole thing with the fingers, by folding the paper into a firm pad.

As the lacquer, Poly, or whatever finish you have applied, never flows out completely level, under the conditions most reading this will be applying it. There will exist minute "hills" and "valleys". The sanding block will bridge the valleys, working the tops of those high spots, the "hills" down until all is flat. At that point it would be ready for the next stage. A Repeat of the previous, but this time with a finer grade of paper.

I do the initial sanding with 400 grit, then the second, with 800. The second, which is also the last for me, is much faster, because the lacquer has been leveled. For the most part, this is simply a quick "going over" to remove the more coarse scuff marks the 400 grit leaves.

Throughout the wet sanding process, cleanliness, within reason, is necessary. The reason, 400 grit paper leaves microscopic scratches, just a few microns across, get a grain of sand between the paper and the lacquer and the resulting scratch will be like the Grand Canyon by comparison.

So once the entire surface is uniformly matte, flat, and sanded it's ready for polishing.

Chapter 7

Isn't that just special?

There are several finishes that require special consideration, Metallics, Candy Apples, Butterscotch Blond, and the Sunburst.

In all, the sanding, sealer and surface prep are the same as discussed previously. The difference is in the color coats, with the exception of the sunburst, I'll get into that separately.

Candy Apples are comprised of a transparent colored coat over a metallic, usually Shoreline Gold, but often Silver can be used too. That is purely a matter of preference, and a test should be performed to insure your final shade is what you were shooting for. The shades of the metallic will alter the apparent color of the Candy, so you're forewarned.

A metallic is made up of extremely fine reflective particles in suspension within the binder. What makes them difficult is regulating the amount sprayed so that the particles will flow consistently. Metallic finishes are very susceptible to the spray swirls and other visual defects that can result from not applying the coat wet enough. Practice on a large area several times to get the feel. If you are using a spray gun, keeping a second handy with thinner in it will give you a chance to assist in this "flowing out". I know many have seen a "home paint job" done on an old car, where the streaky patterns left by the spray can passes really look awful. This is because the paint was beginning to dry before the next pass was applied and the alternating coats could not blend. Professionals avoid this by adding solutions that slow down the drying time, called retarders, here's what you can do.

After spraying a coat of the metallic, if the appearance is not even, spray a coat of a compatible thinner, this will extend the drying time, giving the fine particles more time to flow. If you're not familiar with the process, practicing on a test piece would be a good thing. Remember that word practice, and don't practice on the guitar body.

Some "rattle can" finishes are compatible with lacquer thinner and can be treated the same way. Krylon makes a great color coat and the metallics are compatible with lacquer thinners, so there ya are. Apply the Krylon, shoot it with clear, polish it, and you cannot tell it from a much more expensive finishing system.

Review time. . .

If you're doing a Metallic finish, ya squirt the stuff on, let 'er dry then proceed to the clear coats. Let 'er dry, sand, polish, assemble, play. OH unless you are very good and know what you are doing, DO NOT SAND THE METALLIC color coat, move directly to the clear coats.

If you're doing a Candy color, you apply the metallic, let that dry, then

proceed to the Candy, let 'er dry then proceed to the clear coats. Let 'er dry, sand, polish, assemble, play. Now ain't that easy.

Some will allow the Candy tint to be the final clear coat. I do not recommend this. Because when you get to wet sanding, it's entirely too easy to take the color down unevenly leaving splotchy uneven color. By going the final mile and finishing in a clear coat, you will be sanding that and not effecting the density of the Candy color. The resulting finish will have far more depth, and an even color over the entire guitar.

This is paramount.... Do not try to rush the process, hanging the body in the sunlight is a sure road to disaster. The Sunlight heats up the lumber, causing the internal gasses to expand, they have to go somewhere, and it's not going to seek the way to the neck pocket. It's going to cause a giant bubble, but that's not a biggie, it's easy to fix. First you strip all the finish off back down to bare wood, resand, reseal.... Know what I mean there Verne?

Other little accelerators such as space heaters, sun lamps, hair dryers, any thing that will heat the wood it going to cause you a hellova lotta grief. Doing it Eau Naturelle is the order of the day,

Another tip. Observe the paint manufacturer's recommendations as to ambient temperature, relative humidity, etc. and if your body has been inside in an air conditioned room, allow it to acclimate to the temperature where you will be applying the finish before you allow the wet paint to go on.

Chapter 8

Oh, what a beautiful Sunris*
Ummm. . . Sunburst.



The sunburst begins before the sealer is applied. At least for me, there are other ways to do it, but this is how I get those beautiful gradual blending of the colors.

You apply the colors, from the center out.... Determine what color you want the center, most often yellow.

Seal the grain with your filler of choice, then sand the body thoroughly, check to see if all the grain is filled, if not, do it again.

I dye the wood by wiping it down with the Sherwin Williams Universal dye in denatured alcohol. Leo Fender would dip his early bodies achieving the same results. So I begin with a yellow piece of wood. If it will burst to the very dark chocolate brown edge, I will dye the edges almost black. Let it dry thoroughly.

I add yellow to the sanding sealer and apply that, sanding every few coats and paying attention to the color as the sealer accumulates.

Sand the sealed, dyed body with 220, check to be certain there are no surface flaws. If the sealer has revealed small pricks where the finish has soaked into the body, you can drop fill them. This is where you take a toothpick, dip it into the sealer, then touch the drop to the flaw in the surface. It will dry leaving a small bump.

To work the bump back down level with the surrounding area, take a utility knife blade, place Scotch Tape as illustrated, and using it as a scraper, drag it across the bump cutting it down until the tape is preventing any further cutting action. Now take a small sanding block and sand flush. Fixed... That procedure will handle any future runs too as you approach final sanding.

Assuming the sealed, dyed body has a nice smooth surface, it's time for the burst. You will need two spray guns handy, one with a thin mix of clear coat, the other with the color you want the burst, the traditional 3 step would dictate red here. Mix the color so that it will require several coats to reach the desired color, this makes control much easier.

Shooting AWAY from the center, go around the outside edges, for this first pass, allow the color to work well in toward the center, this is your call, so do what looks good. One of the small "detail" spray guns works great for this, available at Harbor Freight for about 20 bux. An airbrush, does not move enough paint, so it's not a good choice.

Once the first coat of color is applied, mist it with the clear coat. This will dissolve any overspray into the clear, making a smooth, gradual transition from one shade to the next.

Now add the second coat of color. Do not allow it to cover as far in to the center this time. And coat with a mist of clear again.

I will now darken the color toward the shade the final edge will be, I do so by adding a few drops of black dye and brown to whatever color is remaining in the gun. I'll spray a scrap of wood to see how it looks, if good to go, I'll shoot that band, this time even farther out away from the center. Remember to shoot away from the center other wise the overspray will accumulate and darken the brightness of the lighter center.

A second coat will have the outer edged approaching the targeted shade. Mix a bit more red black and brown, test the color on a scrap, then shoot the edges until the required coverage is reached.

Do not forget to shoot the clear between coats and while the color is still quite wet. This will dissolve any overspray, and is how that gradual transition without obvious "bands" of color happens.

If you're doing another color burst, simply change the dyes you are using and repeat the procedding.

At this point, allow to dry for a day or so, then begin the clear coats as were discussed earlier.



Chapter 9.

Ummm ... Yummmm. ... I don't
know if it's the Butter,
The Scotch, or the Blonde.

Identifying exactly what color we're talking about has become a problem. Differing views about what's Amber, Butterscotch, and Butterscotch Blonde abound, so I'll establish some parameters here.

To help understand the controversy, note that Nitrocellulose lacquer reacts to the environment, and particularly the ultraviolet light present in sunlight. This results in the clear nitro taking on a yellowish tint over time, gradually increasing. It is so pronounced that many Sonic Blue Guitars are plain old Lime green today, and the Olympic Whites can become orange. This is further aggravated by the fact that Fender and others used Nitrocellulose lacquers from various suppliers, not just the Dupont Duco, so many are familiar with. Those different formulations would "age" differently from the others. Nitro also comes out of the can with a very slight amber tint, so applying it over a white color coat will turn it ever so slightly yellow.

I mention this to help those not familiar with this characteristic of Nitro understand why there are NO absolutes for duplicating many of the 50 year old colors seen on true vintage guitars.

So here's how I see the colors:

Amber: A clear transparent finish, kind of like you were looking at the wood through a glass of good 'ol Budweiser.



Butterscotch: like you spilled some of Starbucks finest loaded with cream on the wooden table. Not opaque, you can see the grain through

it, but with the coffee 'n cream semitransparent milky liquid influencing the color.



Butterscotch Blonde: Like butterscotch, but much lighter, like the Starbucks was mostly Cream, with a splash of coffee in it.



So to achieve Butterscotch or butterscotch blonde, you begin with amber. I mix amber by adding about 12 drops yellow, and 2 red of Sherwin

Williams Universal dye to a 1 quart spray gun pot. That will be adjusted in accordance with the prevailing tint of the raw wood. It's a starting point only.

So if it's Amber ya want, squirt away, until the color you want is achieved. I always mix colors so that it takes several coats to achieve the target shade. That way I can control it. If you make the color so intense it only takes one coat, if you have to go over a section, you're screwed.

Now butterscotch and butter scotch blonde are done the same way, but can be done one of two ways.

Sherwin Williams has a Pigmented White tint. I mix a touch in clear lacquer giving me a transparent white or a milky white. You can spray the white until you have the appropriate density, still revealing the grain, then clear coat with amber. The darkness of the amber will determine if it's Butterscotch or Butterscotch Blonde.

Or you can mix the white pigment into the lacquer, add yellow + other colors as you see fit until it's the shade you're looking for. Spray that, then clear coat with clear, and you're done except for sanding and polishing.

A word about these colors. I mentioned this above, but I hear a lot of arguments, so I repeat. Nitrocellulose lacquers are acutely sensitive to UV light present everywhere. The UV causes the lacquer to take on a yellowish tint over time. There is no set gradient, it's whatever lacquer, takes on whatever tint, some greenish yellow, others plain old orange. A lot of the colors people are asking for today never existed in the Fender catalogue. They have come into being simply due to the passing of time and the UV's effect on the nitro lacquers.

So, there is no exact correct shade of Amber, Butterscotch, or Butterscotch blonde. And if you are trying to duplicate any 50 year old shade, there is no standard, they all changed color based on the environment in which they were played, and stored.

I can't tell ya how many times someone goes off, because they think a Sonic Blue should be more green, or a Seafoam Green should be more orange. Just remember, sunlight, cigarettes, beer, sweat and blood, all contribute to the colors you see today on guitars made in the 50's and 60's. So keep your target pretty wide and enjoy.

To save your sanity, just remember when trying to reproduce the perfect vintage color, there are no exact shades today. Think of them all as having a touch of a yellow hue due to time and everything else.

Chapter 10..

All wet and sandy.....

By now you have sanded the wood, filled the grain, applied sanding sealer, sanded that, applied more sanding sealer, shot the color, metallic or whatever, did the 'burst, and applied the clear coats. Then let it hang for a month. You're ready to wet sand. So get ya some water and some wet or dry paper....

Why sand the body? Because as you apply the lacquer it will accumulate in an irregular series of hills and valleys. If they're very small, you have an orange peel effect, large ones are more desirable. Wet sanding levels the surface to give you a flat mirror like reflection. To see the difference, go to a local up scale shopping mall, take a close-up look at the finish on a Plymouth Voyager, then the finish on a Mercedes S class, or the finish on a Ford Focus as compared to the finish on a Porsche Carrera. Not to put down the lesser vehicles, but there is a difference.

The only way for you to achieve those smooth mirror-like finishes is by wet sanding. So let's do it.

Most use water, it allows the novice more control, advanced finishers will use mineral spirits. Much faster, but be careful. I warned ya.

Take a small block of something non-porus I use small blocks of Corian (call a kitchen countertop fabricator and ask about scraps.) Small blocks of plexi-glass (plastic) work well to, whatever has a very flat surface about 2 inches square.



Cut the 400 grit Sand paper in to small sections to cover the bottom of the sanding block, wet a small area and in small circular motions, sand

away. You will feel as the paper's grit, acquires "purchase" against the painted surface. Watch the reflection of the wet surface in the lighting above, this will give you an indication of how you are progressing. Be very careful on curved surfaces, the pressure created by the small area at the crown can cause the paper to cut right through the lacquer faster than you can say @!&%\$@.

Working in small areas, sand for a few moments, wipe dry and check your progress. If you still see glossy areas remaining from the final coat, continue sanding. Since it's impossible to get a flat block into the inside curves such as the back tummy contour on Strat like guitars and inside the horns, wrap the paper around your fingertips and sand that way, again be careful on the outside curves like the round-over, etc., you can cut all the way through faster than you imagine.



Once you have a good smooth flat surface with no "glossy" areas remaining, repeat with the 600 grit, this will take less than half the time, you just want to reduce the matte finish to a soft sheen.

It's now time for polishing. There are several systems that can be used. Most use automotive products, and actually A good Cleaner car wax will get you a great shine. A cleaner wax has a very fine rubbing compound contained, so just pout some elbow grease into it and you're done.

More advanced finishers will use a 3 step polishing system in conjunction with a variable speed buffing wheel. That's what I do. You will use the "red" compound first for initial polishing, then change buffing wheels and advance to the "white" which is the final polishing. Change buffing

wheels again then go to the extreme polish, the swirl mark remover, and you will have a gloss like you saw on the Porsche.



I usually give it a coat of automotive wax for protection, then it's time for assembly. That's another book.

Chapter 11

SOMETHING
YOU'RE NOT USED
TO

Let me rag on ya a moment. I know that's not what ya say today but I'm old, so what the hell do I know.

The major difference between a great looking finish on a guitar, excuse me, I mean a great looking Nitro finish and a piece of shi*, is nothing more than practice and patience. Most of you re-doing your guitar will be young, well relative to me, you're young, and not pre-disposed to being patient.

Well now is a good time to practice what you will become excellent at in 40 years; waiting.

Nitro dries to the touch in a few minutes, it will fool you, you will swear it's completely dry. But, try to wet sand it before it has completely dried, and you will be into the paint remover once again. So. . . Hang in there give it a chance to do it's thing and you will have a beautiful guitar.

Oh!!! DO NOT TRY TO FORCE DRY IT WITH HEAT, what a mess that made, (blush). I know Maaco and Earl Schibe bake their cars when they re-finish them, BUT!!! They don't use Nitro-Cellulose Lacquer. Their finishes are specially formulated to be baked.

Ok, here's some free admonition. Ignorant is simply not knowing about something. Example: you're probably ignorant of what the Democrats are really up to, or what's going on at Area 51. Stupid is when you aren't ignorant, but you just ignore the good information you have been given, Example: sniffing the lacquer thinner you will be using, or thinking your parents don't know what's happening is stupid.

My point? You now have all the information you need to do a heck of a nice re-finish on your guitar. Try to invent shortcuts and you're gonna have a mess on your hands. That's because I'm inherently lazy and have tried everything imaginable to shorten the process. Finishing the guitar is still the most labor intensive time consuming part of the whole project. Deal with it. . . positively . . .and you win.

Follow the instructions, and you will find that it didn't take all that long, and it's damn nice looking.

One other little thing. I have seen guys spend thousands on a guitar trying to get a particular sound, and never being happy. The reason they weren't happy is because that couldn't play a lick. The best money you can spend to improve the sound and appearance of your guitar and get the sound you want is spent on quality music lessons and an unbelievable amount of practice. If you can believe how much you are practicing, it's not enough.

A good guitarist can make a piece of crap guitar sound amazing, but give a 20 thousand dollar custom made marvel to an amateur and it's still gonna sound like crap. Practice us far more important than the gear you are playing.

If you have any questions, e-mail me at ron@ronkirk.com or ronkirk@yahoo.com. I welcome your suggestions. Remember, I'm a guitar builder, I'm not an author, I simply wanted to help those of you without \$50,000.00 for a paint booth facility to re do your axe.

Ron

Helpful sites

<http://www.ronkirk.com/> < new. . coming keep checking
<http://www.tubesandmore.com/>
<http://www.carvin.com/>
<http://www.clarkparts.net/>
http://www.guitarnotes.com/links/guitars/guitar_parts1.shtml
<http://www.guitarshoppe.com/customguitars.htm>
<http://www.hipshotproducts.com/>
<http://hoffmanamps.com/>
<http://www.jenkinssoundshop.com/>
<http://www.krank.itgo.com/>
<http://www.mannmadeusa.com/>
<http://www.rgmusic.com/parts.htm>
<http://www.wdmusicproducts.com/>
<http://www.newtube.com/content/>
<http://www.mightymite.com/>
<http://www.grooveland.com/products/>
<http://www.guitarnuts.com/index.php> < Don't Miss
<http://www.towerpaint.com/index2.html>

Chapter 12

Decals and such,

Applying a registered trademark to any fake product is a violation of a book full of laws. If you are applying a decal to your guitar the guitar should be the genuine article. So don't go showing your fake Strato-caster® to your FBI agent uncle bragging about your creation.

I just received a genuine Fender® 1962 decal. It took 4 weeks and a lot of sending photos back and forth to get it. Previously when re-finishing Fender necks, I had used several reproduction decals. I was always disappointed by the quality. When examining them under a magnifying glass, you could see the pixels that gave away the fact that they were reproduced using a computer scanner to create the artwork.

Well that disappointment pales compared to the disappointment I felt after examining the genuine Fender® decals. They also have the pixels and are of much poorer quality than the reproductions. The lesson learned, buy reproductions, they're of better quality and less expensive.

When applying a decal there are several things to keep in mind. First, many of the original vintage guitars had the decal applied last. No clear coat. As a result you will see many today that have been scratched, bug eaten, (they're gelatin) or other wise damaged. Today most of the finer guitar manufacturers apply a clear coat to protect it.

Never apply a decal to un-finished wood. The water will cause the grain to raise, not a big problem under normal conditions, you simply sand it once dry. You can see the problem if a delicate decal is in the way. Apply several coats of lacquer, 4-5, to the headstock with an hour to dry between coats, and allow to dry for a week, wet sand it till the surface is flat. Apply the decal.

Wet the decal in a very slightly soapy water. When it begins to move freely, DO NOT FORCE THIS, slide it from the backing paper to the surface you want it applied to. Take your wet finger and gently, GENTLY!!! Move it around until it is in position. Use a soft tissue, NOT PUFFS, they have oil in them, to dab the excess water from it. GENTLY!!! Move the tissue from the center of the decal outward to force excess water from beneath the decal. Now allow it to dry for 24 hours.

Once the decal is dry, spray a very light coat of lacquer over it and let it dry about one hour. Do not make it too wet, get it to wet with fresh lacquer and the ink can dissolve, inspiring your creative talents to spawn new cuss words. Repeat as many times as needed until there is a thick coat over the decal. You want this thick enough so you can sand the surface until the outline of the decal has disappeared. Of course you will wait for 2 weeks after you finish spraying and before you wet sand. Then you polish the little booger. That wraps up the decal application section.

To install a decal

If you will be coating the decal, I strongly urge you to test the finish you will be using on some test decals before spraying this decal. Some clear finishes will melt this and any other decal. Don't use any clear coats without testing it first!!!

I strongly recommend going to a hobby/toy store and buying some model car decals, or any other kind you can find, you can buy a pot full of them for a couple of bux. Use them to experiment with. You don't want the total destruction of a 25-dollar headstock decal to be a learning experience.

Your surface must be finished that is, painted, lacquered whatever you call it. And clean... real clean. You may want to buff it with some 0000 (4 oh) steel wool, available in any good paint store. **Do not apply a decal to bare wood it, will not stick.**

To apply the decal, you wet it in a saucer of water until the image is loose enough to slide off the backing paper, about 1 minute.

Slide it onto the surface where you want it located. You should pre-wet the area. This will facilitate sliding it into the final position. Using a small artists paint brush, or the rolled up tip of a tissue, position the decal. If it takes a few minutes, keep the decal and the edges wet until the perfect position is achieved.

Lightly, **LIGHTLY!** Dab the excess water from the surface, ensuring you keep the decal in place. When the surface is just about dry carefully smooth out any air or excess water from beneath the decal. I do this by keeping my fingertip damp and slide it across the surface of the decal while applying light pressure. **If an air pocket occurs that you cannot press out, poke it with a small sharp needle; then press it with your finger.**

Allow it to dry over night. <<< I know you're anxious but you have to allow all the moisture to evaporate from beneath the decal. If you don't wait and will be coating it with lacquer, you're about to screw-up an expensive decal.

While it may be used without any further finishing, I recommend applying several light coats of REAL lacquer over the decal. **Do not use the mystery clear spray paint from a hardware store. It COULD melt the decal, in fact, don't use anything without testing it first!!!!**

As a test, go to a hobby shop, buy some model car decals, any decals, and apply them to anything and spray them. If they melt, try another type of spray finish. Ace hardware has a real lacquer in a spray can, it's

not nitro-cellulose, it's an acrylic.

Apply 3-5 light mist coats, allowing 10 minutes dry time between each. Once you have about 5 coats on it, you may apply a medium wet coat; repeat several times with 30 minutes dry time between each. ***Never soak the decal with the clear coat, use light to medium coats only.***

To polish the headstock, allow it to dry for 3 days then use a good cleaner car wax and a lot of "elbow grease"

Originally Fender did not coat the decals after application. That is why you see genuine vintage guitars with the decal damaged. Actually insects ate those decals because they were made of gelatin.

To apply a decal correctly takes several weeks. If you rush it you wind up with a mess.

First I strongly recommend you finish the neck with real nitro-cellulose lacquer. This is available from the suppliers I mentioned earlier in this book. If you can get your hands on a compressed air spray gun, and know what you're doing, you can buy a gallon from Sherwin-Williams in most large metropolitan areas for \$18.00.

Now put down about 10 coats, allowing about 30 min dry time between each. Now set it aside and allow it to completely dry and harden for a week. This is because most paint will dry to the touch in a day, but it takes weeks for it to completely harden.

Once the week has passed you must wet sand it with 400 grit wet or dry sandpaper. Sand until you cannot see any glossy areas.

Now apply the decal according to the instructions above.

After waiting a day, you begin spraying lacquer again. 3-5 very light coats at first, and allow them to dry over night.

Now you can apply about 10 coats as described above. Allow to dry about 3 days then wet sand again, BE EXTREMELY CAREFUL not to sand through the over coated lacquer on the decal. You want to sand until you can no longer see the outline of the decal. You may have to spray another 10 coats, wait 3 days and resume sanding. Once you can no longer see the outline of the decal you put down a few more finish coats, let it dry a week << YES A WEEK... then wet sand again with 600 grit wet or dry. Now polish it with a good automobile cleaner wax. I use Maguire's, in the squirt bottle.

When done, your guitar neck will have the decal contained within the lacquer and the head will be as smooth and a piece of glass, that's what you want isn't it? While it sounds tedious, it is actually pretty easy. Just time consuming.

I Repeat:

I strongly recommend going to a hobby/toy store and buying some model car decals, or any other kind you can find, you can buy a pot full of them for a couple of bux. Use them to experiment with. You don't want the total destruction of a 25-dollar headstock decal to be a learning experience.

Another thing!

If you have finished a neck, the lacquer will accumulate in the tuner machine holes. If you force the tuners in a well dried lacquer finish, the probability of cracking the now brittle finish arises. I use a Dremel tool with a grinding wheel smaller than the hole and carefully ream away the accumulated lacquer buildup. If you think of it, during the first few days the lacquer will still be soft enough so that it may be scraped out of the holes with a small knife.

About Painting

The thought occurred to me that many of you will not have a filtered air paint booth to spray your guitar. In fact about as close as many of you will come is, perhaps, the back porch, Patio in the Midwest, and who knows what the chic avant garde call it in California.

The problem of foreign material blowing into your wet finish may have to be addressed. Therefore, spray in the early morning, or late evening. The wind has a habit of subsiding at these times. Needless to say I hope, do not spray on a windy or rainy day. Other than that, the lacquer dries fast enough so you don't have to worry about junk falling into your finish.

What do you do if something flies onto your wet paint? In the South, if a bug flies in to the paint, don't stop spraying. Finish that one coat, then let it dry. Once dry, use some 600 grit Wet or Dry and sand the bug or whatever out, once this has been completed, resume painting.

In the Midwest, If a little desert sand gets blown in, use the same method as indicated for the South.

The Far West presents another problem. Bugs and sand aren't the problem, it's when you start spraying stuff into the atmosphere a flock of Liberal Democrats may accumulate around to protest your contributing to the decay of the environment.

When they get hyper and start flailing their arms around, one may get stuck in your lacquer surface, I would suggest just keep spraying over them. It will take a few more coats, but the uniqueness of a genuine liberal deep inside the finish of your Strat® will be an awesome conversation piece.

Chapter 13

What color is that?

Nitrocellulose lacquers is THE finish for the great guitars, PERIOD. Even a Democrat and a Republican wouldn't argue that point. I love working with it. Fender, Gibson, PRS, Martin, and anyone else making guitars use it on their finest instruments with a giant caveat discussed earlier in this book. Nitro-cellulose breathes with the wood and actually contributes to the resonant qualities of the wood. Just don't sniff it. Jeeze, you're working on an incredible guitar. It would be a shame to become brain damaged before you can play the first chord. I use Sherwin-Williams. To use it, you have to know how to use a compressed air spray gun. The Wagner's your dad bought to spray the garage door will not work. It's designed for latex. Don't paint your guitar with latex house paint OK? NOT COOL, not cool at all.

Get your lacquer from Sherwin-Williams, check the Yellow Pages. A gallon is about \$18.00 and they can mix custom colors. Or you can buy the pigments at \$1.00 per ounce and mix them yourself Dyes are much more expensive, but one ounce will do several guitars. Do not get it on anything you don't want a permanent stain on, this stuff is intense.

Other equally good nitro-cellulose lacquers are also available from the other suppliers I listed earlier. To spray it you will be mixing it 50/50 with thinner, so get a couple of gallons of lacquer thinner too.

Originally Fender used Dupont DUCO most often which was a nitro-cellulose finish. Lucite was used in many shades also, however it is an acrylic lacquer. Dupont no longer manufactures DUCO, but they do have Lucite acrylic lacquer, almost certainly a different product than that available 45 years ago.

However, if you would like to duplicate the original Fender colors here are the original shades and Lucite numbers. Thanks to Keith Schuler, who worked at Fender In Fullerton from '65 to '72.

Lake Placid Blue Metallic	Lucite #2876-L	'58 Cadillac
Daphne Blue	Lucite #2804-L	'58 Cadillac
Inca Silver Metallic	Lucite #2436-L	'57 Corvett
Olympic White	Lucite #2818-L	'58 Cadillac
Burgundy Metallic Mist	Lucite #2936-L	'59 Oldsmobile
Inca Silver Metallic	Lucite #2436-L	'57 Corvette
Fiesta Red	Duco #2219-H	56 T-Bird
Dakota Red	Duco #2590-H	'58 Cadillac
Blue Ice Metallic	Lucite #4692-L	'65 Ford
Firemist Silver Metallic	Lucite #4576-L	'64 Cadillac
Firemist Gold Metallic	Lucite #4579-L	'64 Cadillac
Charcoal Frost Metallic	Lucite #4618-L	'65 Lincoln
Ocean Turquoise Metallic	Lucite #4607-L	'65 Mercury
Teal Green Metallic	Lucite #4297 L	'64 Lincoln
Black	Duco #1711	All makes
Sonic Blue	Duco #2295	'56 Cadillac
Shell Pink	Duco #2371	'56 Desoto
Foam Green	Duco #2253	'56 Buick
Surf Green	Duco #2461	'57 Chevy
Sherwood Metallic Green	Duco #2526-H	'57 Mercury
Candy Apple Red	Undercoat was Inca Silver 50%, Shoreline Gold 50%	
	Topcoat was Fiesta Red 1/3, Clear 2/3	

The Yellow of the Sunburst was actually a blend of dye and the undercoat called "Fullerplast" (Clear with the yellow stain mixed in)---This was used only on ASH bodies. Alder bodies were stained yellow and the later sunburst sprayed on. "Fullerplast " was named for the company that made it (Fuller/O'Brien) not the city of Fullerton. Still Available @ phone #: 1-800-368-2068. All of these names and numbers were DuPont, but any good paint company can cross-reference and mix a matching color, probably in nitro-cellulose.

Should you want to duplicate one of the above original shades any good nitro-cellulose or acrylic lacquer supplier should be able to duplicate the shades with the numbers above.

If you want to paint your guitar with one of the new colors seen on custom cars, take note. Those finishes are not nitrocellulose lacquer. While they may be available in something called lacquer it is not nitrocellulose lacquer. It is a modern acrylic and not at all compatible with nitro-cellulose. Kind of like saying Barbara Streisand and Yngwie Malmsteen are the same because they're both entertainers. The automobile finishes are available at your local body shop supply. Acrylic Lacquer can be very

expensive with prices starting at about \$80.00 a gallon and require a lot of equally expensive stuff to mix in them.

Chapter 14

Nuthín' quíte like a quíckie.

For those that just want something quick, I'm talking about a week total, and a bit better than the tung oil so many lean to when they just want to get it done and playable, try this.

Ace hardware and Lowe's carries a Spray rattle can of a satin nitrocellulose lacquer, It's called Deft. It's gotta be satin the glossy doesn't sand as easily and requires much longer.

This product has a high content of filler therefore it dries fast, and sands very easily.

Let's go. .

You sand your body as originally described. Then shoot a coat of the Deft Satin. It will dry on a reasonable day in about 15 minutes. Sand it again. Now apply a second coat, repeat this in about 1 hour intervals until you have about 5 coats applied. Allow it to dry over night.

The next day sand again, you might want to begin using a sanding block much like discussed in the wet sanding chapter.

Apply coats again, but this time allow more drying time, the lumber has been sealed and it will take longer to get to a point the satin can be sanded. If you are seeing small pin point dimples, drop fill them as described earlier. After the drop filled areas are fully dry, about a day, sand the entire surface flat, actually a small orbital sander with 320 grit will work great.

Now you're entering the final stage, spray a nice wet coat, allow to dry and apply a second. If you have no flaws to deal with, let it dry and you're done. A really slick Satin finish, and Nitrocellulose to boot. It's that easy.

