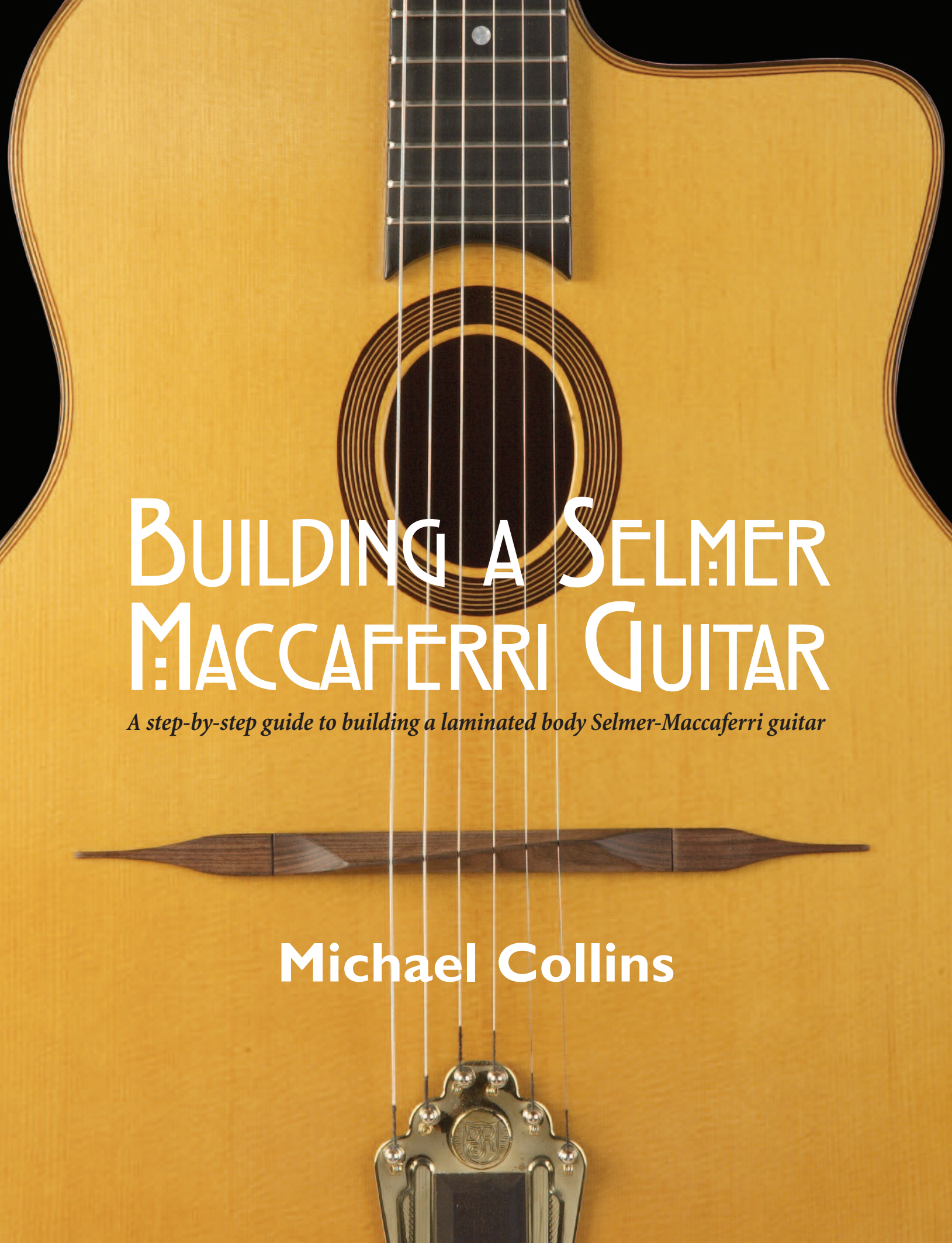


Building a Selmer Maccaferri Guitar

A step-by-step guide to building a laminated body Selmer-Maccaferri guitar

Michael Collins

The Heel

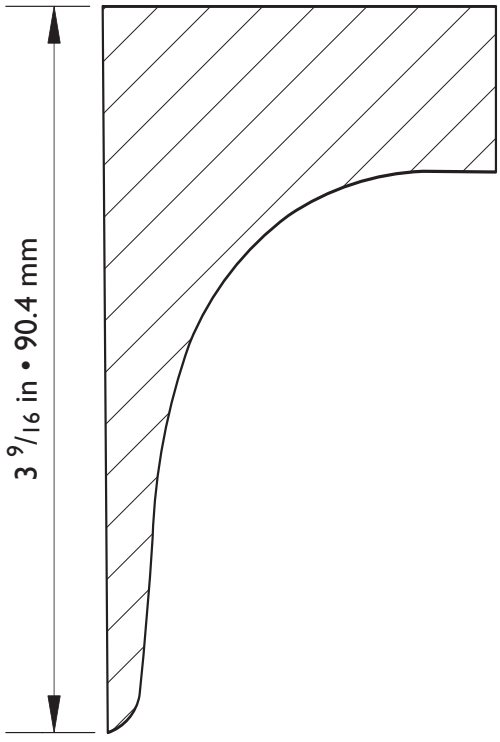
The heel should now be prepared to be glued to the neck shaft. Using the neck template, transfer the curve of the heel to the side of your block. The block must include the extra depth for the dovetail.

Rough-cut the curve of the block on the band saw to reduce some of the waste you must carve later.

The sides of the oval hole block should be tapered so the top is $2^{1}/_{4}$ in•57.1mm and the base is $1^{3}/_{4}$ in•44.4mm. The sides of the D-hole block should be $2^{7}/_{16}$•61.9mm at the top and $2^{1}/_{8}$•53.9mm at the base. These tapers must reference the centerline of the block to keep everything in order.

Once the heel has been correctly roughed out, glue it into position on the neck shaft. Use two clamps and prevent the block from slipping out of position as you set the clamps.

Allow the entire glue-up to dry for a minimum of one hour.



13.25:
The heel.
Scale = 100%

13.23:
The neck shaft side template is used to layout the rough shape of the heel block. Use the full size diagram supplied when you make your side template.

13.24:
The heel taper is drawn so it is slightly oversize on the block and cut on the band saw.

13.26:
Clamp the block to the neck shaft just behind where the neck shaft chamfering ends.

13.27:
Testing the fit of the aluminum strips.

Cutting the Slots for the Aluminum Re-enforcement Rods

Slots are cut into the fingerboard surface of the neck shaft to accept the aluminum re-enforcing rods. The slots are W = $^1/_8$ in•3.1mm x H = $^1/_8$ in•9.5mm. The rods have evenly spaced holes, drilled through them to reduce weight. To further reduce weight and increase strength you could use carbon fiber re-enforcement strips available through Stew-Mac and LMI.

Clamp a piece of plywood and a fence onto the drill press table. Use a $^1/_4$ in•6.3mm bit. Set the fence so the center of the bit will drill through the center of the width of the rod. Place the rod against the fence and drill a hole at the dovetail end. Move the rod $^7/_{16}$ in•11.1mm. Drive a nail through the first hole into the plywood table. The nail should contact one edge of the first hole to act as a stop for the next hole. Drill your next hole and repeat. Hold the rod securely against the fence and the plywood table to prevent the rod from rising into the bit. You should not drill past the zero fret position on the rod.

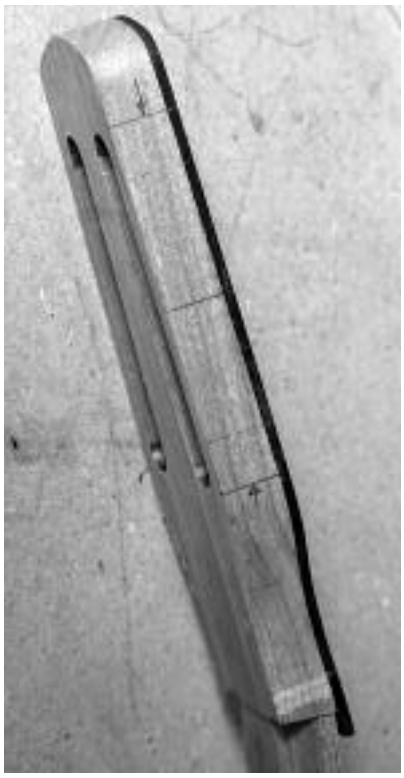
When all holes have been drilled, remove any burrs with a file.

Marking the Positions for the Tuners

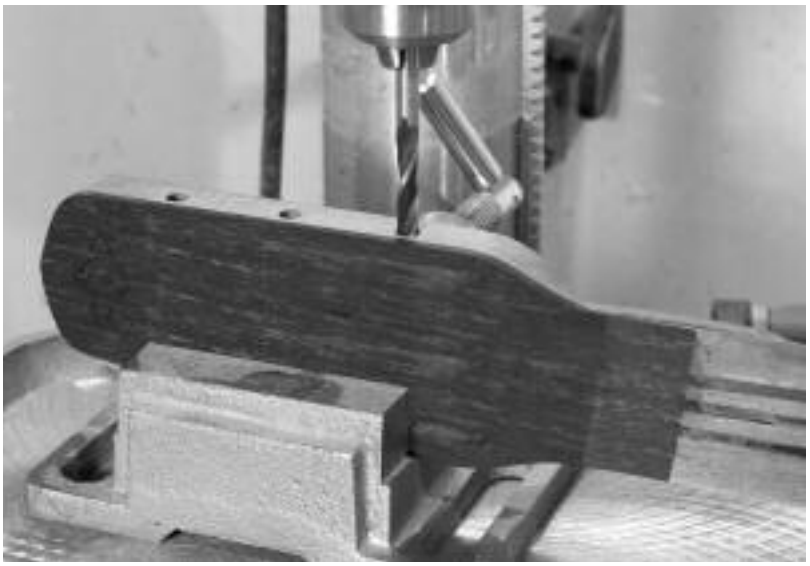
The positions of the tuning machine holes are usually spaced at a distance of $1^{3}/_{8}$in•34.9mm. Check with the actual tuners before drilling. Mark a centerline on both sides of the headstock. The post of the middle tuners should be centered in the tuner slots. Use the diagram to position the tuners along the edge of the headstock.

The headstock edge can be held in a drill press vice at 90° to the $^{1}/_{4}$in•6.35mm drill bit. I use tuners with a shaft that are $^{1}/_{4}$in•6.35mm in diameter and omit the bushings. Your drill bit may need to be larger if you plan on using bushings with the tuners

Drill each hole to a depth equal to the length of the string post.



13.41:
Here you can clearly see the line placed between the ends of the slots which have been marked along the side of the headstock. This line will mark the position of the center string post. The other two posts are marked $1\ ^{3}/_{8}$in on either side of the center post. Check the spacing on your tuners as this measurement varies.



13.42:
Drilling the tuner holes with the headstock held in a vise. The face being drilled should be parallel with the table.

13.43:
Here the ends of the slots have been drilled. Use a block below the headstock to prevent the bit from tearing out wood on the underside of the headstock.

Cutting the Headstock Slots

Using a $^{1}/_{2}$ in•12.7mm drill bit, drill 4 holes at the ends of the slots as marked. Cutting on the inside of the marked lines, use a jig or coping saw to connect the holes.

A jig made of $^{3}/_{4}$ in•19.0mm MDF is needed to rout the hollow portion which allows the strings to clear the ebony face. A $^{1}/_{2}$ in•12.7mm cove bit, with a bearing to follow the template, will give you the desired results.

Double-side tape the jig onto the face. Set the depth of the router. The depth of this cut should not protrude below the ebony in order to avoid exposing the aluminum

13.44:
The headstock after being drilled and slotted.

13.54:
Cutting the heel angle with the neck securely clamped to the miter gauge.

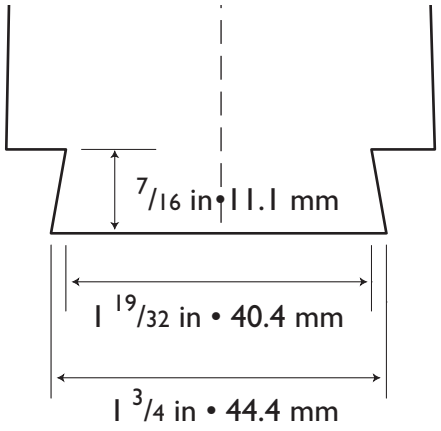
our target bridge height. This will be adjusted during the neck fitting procedure.

Mark the location of the dovetail onto the face of the neck, where the fingerboard will lie. This may be found using the diagram of the neck profile. Use the T-bevel to transfer the angle down each side of the heel. Connect the dots at the bottom of the heel as a visual indicator to tell you where to start the cut on the table saw.

Transfer the angle from the T-bevel to the miter gauge. Position the neck blank with the fingerboard side against the miter gauge. Clamp the neck blank to the miter gauge. Set the blade at exactly 90°. Raise the blade high enough to cut completely through the heel. Make sure that the centerline of the neck is parallel to the surface of the table. Use a tri-square to assist you in positioning the neck in proper relation to the saw blade.

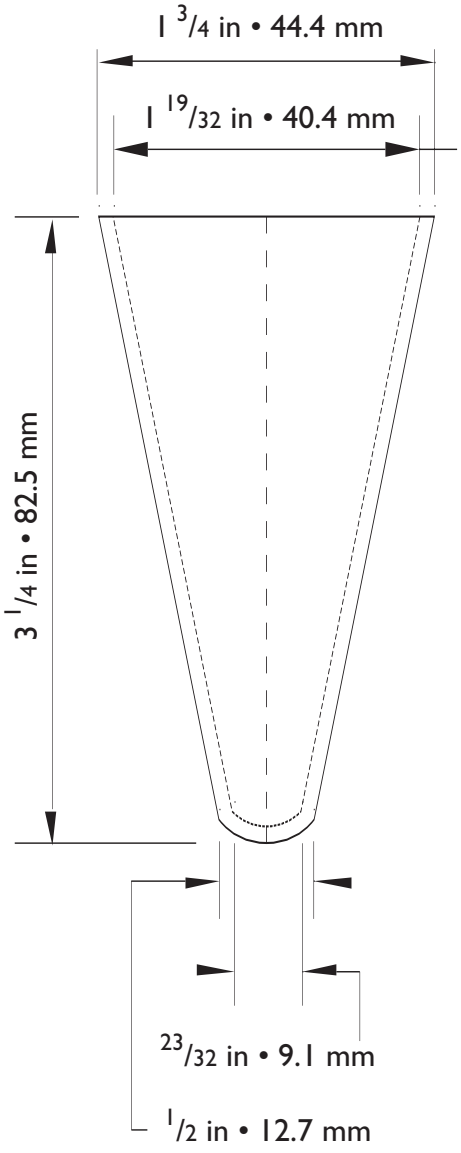
When you are satisfied with the set up, make the cut. Don't forget to leave enough material for the dovetail.

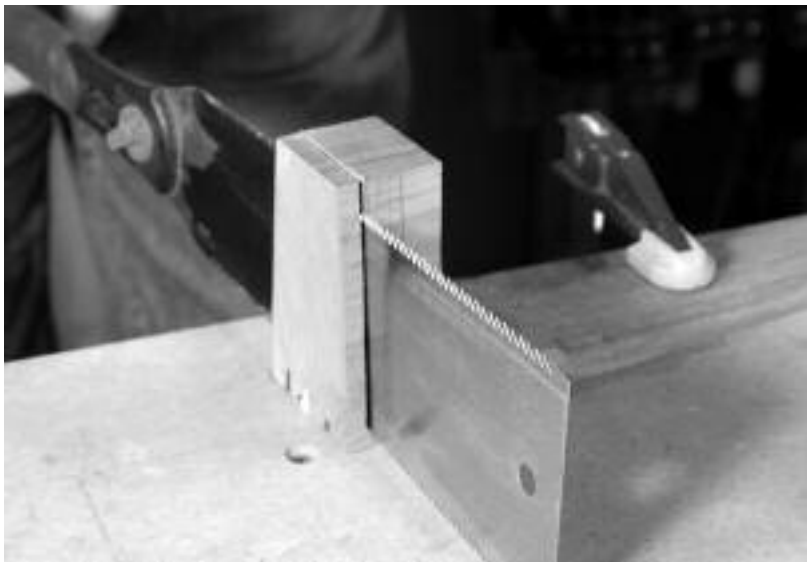
When the cut has been made you may place the heel onto the body in its position. Use a long straight edge and align it with the centerline of the neck. Hold the heel firmly against the body and see how well the neck's centerline aligns with the centerline of the guitar.



13.55:
The dovetail dimensions. Scale = 100%

13.56:
The dovetail dimensions. Scale = 100%





13.57:
The heel angle may also be cut using a hand saw.

Cutting the Neck Joint by Hand

The neck joint may also be made using a hand saw. Mark the intersections of the neck joint as described in the previous section. Lock the neck into your vise and carefully make your cut.

You can clean everything up with an extremely sharp block plane or a stationary disc sander.

13.58:
Cleaning up the saw marks left by the handsaw on the belt sander.

13.70:
Using a small triangular file to break the edges of the fret slots.

Fretting

The frets on the original instruments were cut to the exact width of the fingerboard. They were then placed into a jig slightly narrower than the finished fingerboard and the fret ends were rounded with the use of a special tool. When the frets were installed this left perfectly rounded ends which fell just shy of the fingerboard edge. This makes for a very comfortable playing surface.

BUILDING A SELMER MACCAFERRI GUITAR details the step-by-step construction of the laminated European style Jazz guitar, made famous by the great gypsy jazz guitarist, Django Reinhardt.

Topics covered:

- *Wood*
- *Molds*
- *Liners*
- *Binding*
- *Finishing*
- *Set-up*
- *Tools*
- *Lamination*
- *Gluing the Body*
- *The Fingerboard*
- *Bridge*
- *Pickups*
- *Sharpening*
- *Rim Assembly*
- *The Soundboard*
- *The Neck*
- *Hardware*

From producing the "pliage", to inlaying the rosette, preparing the laminate, carving the neck, to applying the finish, each topic is discussed in great detail.

Over 275 photographs and 75 diagrams positioned throughout the text to help even the novice builder understand and complete each process.

Construction techniques for both the short-scale D-hole instrument and the long-scale Oval-hole guitar are covered.

HYPERHiP MEDIA

Published by: HyperHip Media – www.hyperhipmedia.com
Author: Michael J. Collins – www.collinsguitar.com
Cover Photographs: Dieter Hessel Photography
Book Design and Photography: Wayne Nakamura/HyperHip Media

U.S. $69.95
ISBN 0-9781863-0-3
ISBN 0-9781863-0-3
56995
9 780978 186302