

# *Rifle Stock Finishing Instructions*

*Edited by M.L.Greene© 2000*

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## ***BEFORE YOU START***

*When you are wondering just what the finished stock will look like,  
I would like to suggest that you purchase and use some clean "LACQUER THINNER" or ACETONE  
(DO NOT USE ANY OTHER TYPES OF SOLVENTS).  
Place the stock on a clean work surface and "wet" the stock with the solvent. Do Not Flood or Soak the wood!  
This will bring up the true color and figure.*

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## ***GETTING STARTED***

*The Traditional Varnish Gunstock Finish  
A practical, durable & beautiful finish for all gun stock woods.*

- ***The following is the procedure for applying a varnish type finish to a "NEW" rifle stock".***
- *The method described here in will create a finish which is more "IN THE WOOD" as opposed to an "On The Wood" finish.*
- *The stock should contain between 8% and 11% moisture and should be at normal house temperature of 68 to 74 Degrees F.*
- *All the finish, solvents, and oils should be at normal house temperature of 68 to 74 Degrees F.*
- *The stock should be sanded smooth (WITH THE GRAIN) to at least #320 Garnet or #340 Wet/Dry.  
Some prefer to sand to 600 Wet/Dry.  
The grain should be raised and final sanding should remove any "Whiskers" etc.*
- ***The following will not so much concern it self with the preparation of the stock as with the manner in which the stock is handled and the finish is applied and completed.***
- *This finish will work on almost all Rifle Stock woods with several exceptions the greatest number of which are woods related to "Rose Wood" and its kin.*
- *This finish works really well on all the "Walnut Family". Claro, French, Turkish, English, West Coast Black & American.*

- *The Hardest of all the "Walnut Family" to finish and achieve real "professional" results on is "Claro Walnut" because of the physical properties of Claro Walnut, and the grain and pore structure. Claro Walnut is where this simple finishing method stands above ALL other finishes.*
  - *When used on the finest grained Walnuts such as French or English this finish is extremely easy, and it is difficult to tell it from the finest and most expensive of the "Hand Rubbed Oil" finishes.*
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## **STEP ONE**

### *You Will Need The Following Tools and Supplies*

- *A container of your favorite "Varnish".*
  - *A small container of "Varnish Reducer" ("Manufacturers" recommended "Reducer" for thinning his varnish).*
  - *A small container of "100% Pure Mineral Spirits" (For "modifying" the "Varnish" and clean up).*
  - *A small container of your favorite "Boiled Linseed Oil" (For "modifying" the "Varnish").*
  - *A small block type "pink" rubber eraser (For block sanding most of the surfaces and keeping them "flat".)*
  - *A larger rubber block if required. (For block sanding larger "flat surfaces".)*
  - *Assorted wet/dry sand paper #340 to #1500*
  - *Assorted "Micro finishing sand paper #2000 to #12.000" (OPTIONAL)*
  - *A roll of white paper towels. (I like to use the type used to prepare food in a micro wave oven.)*
  - *Solvent proof finishing gloves*
  - *Some sort of Small measuring spoon. (About 1 Table Spoon)*
  - *Nylon Abrasive Pads Fine (Gray) and or Extra Fine (White).*
  - *Large plastic trash bag. (Big enough to put the stock in with some extra length.)*
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## **STEP TWO**

### *Sealing The Sock*

**CAUTION!!! USE YOUR GLOVES WHEN USING THE VARNISH/REDUCER MIXTURE**

- **CHECK THE "FIT OF THE METAL" & CHECK YOUR "SANDING" ONE LAST TIME!  
NEXT REMOVE THE METAL FROM THE STOCK.**
- *Mix about 3/4 cup of thinned varnish in a clean glass jar. Use equal parts Varnish and Reducer.*
- *Inspect the plastic trash bag (with no TRASH in it), make sure it is clean and dry and that the bag has no holes.*
- *Put the stock and a little less than 1/4 cup (for a regular size rifle stock) of finish in the bag, close the bag, and using the bag, smear the Varnish and Reducer around on the stock make sure the finish is all over the entire piece. (This is just a clean way of working.)  
Close the jar and save the remainder of the Thinned Varnish for later use.  
Work the Varnish and Reducer on the stock from time to time for about 10 to 15 minutes.*
- *Let the bag hang with the stock in the finish 15 or 20 minutes.*
- *Now remove the stock from the bag and wipe it dry with a lint free paper towel or cloth.  
(WHIP DRY! Do not leave any finish on the surface in side or out.)  
IF THE FINISH GETS STICKY USE A LITTLE OF THE VARNISH WITH REDUCER TO CUT IT OFF THE WOOD.*
- *Close the bag & discard it.(OUTSIDE!)*
- *Hang the stock on a wire to dry and forget it for two or three days.*
- *Check that the stock feels dry to the touch and when it does repeat "STEP TWO".*

**CAUTION!!! If the stock is not allowed to dry completely ("DRY HARD") this "first time" you are wasting your time from now on.**

- *Allow the stock to dry completely the second time!*
  - *After the second coat "DRIES HARD" the stock is normally sealed.*
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## **STEP THREE**

*Filling the wood*

**CAUTION!!! USE YOUR GLOVES WHEN USING THE VARNISH/REDUCER MIXTURE**

- *Using the left over thinned Varnish and a small piece of paper towel wipe a THIN layer of finish over the entire outside of the stock.*
- *After the Varnish mixture starts to take a set, but before it becomes tacky wipe the stock almost dry leaving just a LITTLE varnish mixture in the pores of the wood.*  
*Make sure you check and wipe off any Thinned Varnish inside the stock where it doesn't belong.*
- *If the Varnish becomes tacky before you can wipe it off just put a LITTLE of the Varnish Reducer mixture on your "Wipe Off Rag" and the tacky finish will come right off.*
- *Hang the stock to dry. About 15 to 20 hrs.*
- *Replete the above step allowing 15 or 20 hrs. between coats.*
- *Depending on the size of the pores in the wood, Replete this step until the pores are filled and there is an obvious build up on the surface of the stock.*
- *You can't put too many layers on at this stage (within reason).*
- *Allow the stock to dry completely! For two or three days! (A week is better!)*

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## **STEP FOUR**

*Reducing the surface*

**CAUTION!!! USE YOUR GLOVES WHEN USING THE VARNISH/REDUCER MIXTURE**

- *This is where you now may make a decision.*  
*The idea of this step is to "cut" off all the finish above the wood's surface leaving the wood completely filled.*  
*You have two choices, depending on the job, that we will consider.*

*The first:*

*You may sand the finish down to the "original" wood surface using the linseed oil as a lubricant & the #600 wet/dry sand paper.*

*The second:*

*Use a combination of Varnish & Reducer along with the "Nylon Steel Wool" Nylon Abrasive to "Melt & Cut" the dried finish quickly to the surface.*

*The result is the same.*

- *If you choose the first method be sure to sand "with the grain" of the wood. Be especially careful not to go below the original surface. When you have removed all of the excess finish wipe off the surface of the stock to remove as much of the linseed oil as is possible. Then "Wash" the surface of the stock "quickly" with the mixture of Varnish and Reducer. DO NOT leave the mixture on the surface long and wipe it as dry as you can. Then let the stock stand over night before you continue with "STEP FIVE".*
  - *The second method. Cut a 1 inch x 2 inch piece of the Nylon Abrasive, put on your gloves dip the end of the Nylon Abrasive in the mixture of Varnish & Reducer. Also wet the stocks finish using Varnish & Reducer and using a scrubbing motion "ACROSS THE GRAIN". Rub off a 1 1/2 diameter patch of finish working quickly. Then IMMEDIATELY wipe the area with a dry paper towel. DO NOT ALLOW THE REDUCER TO SOFTEN THE FINISH DOWN INTO THE PORES OF THE WOOD. Do a small area and don't try to take "all" of the built up finish off (to the wood surface) in one step. Move to another area and do the same thing. Repeat this until the entire stock is reduced to the original surface. Then let the stock stand over night (24 hours is better) before you continue with "STEP FIVE".*
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## **STEP FIVE**

*Surfacing the wood **The hard part!***

*This is where we all have trouble, so be patient.*

*You are now going to put a "SURFACE" on the wood this requires only a little patients.*

*You will use the #600 wet dry sandpaper and the Pink Eraser along with a Modified Varnish Mixture. As you work you will make a fine mud/finish mixture which will fill the very tiny pores and scratches in the wood.*

*With each application moving to finer and finer grit, sanding then polishing paper, until you have the finish you desire.*

*Some fine-grained wood may require you to use #1500 or #12,000 grit to accomplish this but you should start with #600.*

*Depending on temperature and humidity the drying time of the modified varnish will vary, be patient, I can not stress the importance of allowing the varnish mixture to dry "HARD" when you begin surfacing your stock.*

***PLEASE READ THIS SECTION COMPLETELY BEFORE YOU CONTINUE!***

- *To make the Modified Varnish Finish mix the following in a small jar.  
(Don't mix too much at one time. Try from 1/4 to 1/3 cup maximum.) **Personally, I find mixing only enough "Modified Varnish" to last two work days is more practical.***

*Two parts Varnish, One part 100% Mineral Spirits (**NOT REDUCER**), and One part Linseed oil.*

*This mixture may be modified to allow a longer working time or for your temperature and humidity.*

*I would like to suggest that you start with the above and make up samples if you decide to modify the proportions of this mixture.*

- *Cut 3 or 4 small rectangles (1 1/2 x 2 inches or a good size to fit your sanding block) of each #600 through say #2000 paper so they are ready for use.*
- *Starting with #600 paper, put a drop or two of Modified Varnish Finish on both the wet/dry paper you have wrapped around the "Pink" eraser and on the stock.  
**At this point always use a sanding block. This will keep everything "flat".***

- *Do only a small area at a time using a circular motion and leaving the "MUD" in place.  
When you have finished a area about the size of your hand wipe the area with a dry paper towel but don't wipe the stock dry.  
Continue this process of sanding/polishing until the stock is completely polished and wiped down, but not wiped dry.*
  - ***TRY VERY HARD TO USE AS LITTLE FINISH AS PRACTICAL, AND WORK QUICKLY.  
THE LONGER YOU ARE MAKING THE MUD, THE MORE TIME THE NEW FINISH HAS TO SOFTEN THE  
PREVIOUS LAYER OF FINISH.***
  - *Change paper when it "loads up" with finish and mud or if the paper stops cutting.  
As you do this "Finish and Mud" will find its way into the holes and scratches in the stock.  
Before you set the stock aside to dry;  
***Make sure you check and wipe off any Varnish inside the stock where it does not belong.****
  - *Inspect the stock. If needed repeat this step using the same grade paper WITHOUT letting the stock dry.*
  - *Inspect the stock again.  
This time lightly wipe the stock completely with dry paper towel.  
(DO NOT WIPE THE SURFACE DRY!)  
Now let the stock dry 15 to 20 hours. (Minimum!)*
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## ***STEP SIX***

*More of the same!*

- *Repeat the above "STEP FIVE" as many times as you want to using finer grade of paper each time or two.  
Letting the stock dry at least 15 to 20 hours (Minimum!) between coats.*
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## ***STEP SEVEN***

*Over Coating! (OPTIONAL IN MY OPINION)*

- ***(FIRST READ ANY FINISH MANUFACTURER'S CAUTIONS)***
  - *The last step is to "Over Coat" the finish by putting one drop of finish on the palm of your hand and using your palm, "rub" the stock with finish.  
Try to put the thinnest coat of finish on the stock you can imagine on the entire stock.  
(Make the "drop" of finish stretch as far as it can.)  
Polishing as you go with the palm of your hand and then letting the stock dry without wiping.*
  - *Repeat the above step until the entire stock has been covered with the thin coat of finish.*
  - ***Do Not Wipe the Stock!***
  - *Let the stock dry at least 15 to 20 hours (Minimum!).*
  - *Repeat step seven ONLY if required.  
Polishing again with the palm of your hand and then letting the stock dry without wiping.*
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## ***STEP EIGHT***

*Rubbing or polishing the finished stock (OPTIONAL)*

- *When complete let the Stock dry hard. At least a week at room temperature and inspect the finish.  
If you now satisfied with the completed finish, and if you intend to use a polishing compound, or "rotten stone" to buff out the finish allow the stock stand another a 30 days minimum before you attempt to put a final polish on the "varnish/oil finish.  
The reason for this is that even though the stock is dry enough to "use" the varnish deep down in the stock may still be "green" softer. This may make a easy and enjoyable 1 or 2 hours into a nightmare.*
- *When using any of the prepared polishing or "rubbing" compounds follow the manufactures directions to the letter.*

- *Always work in the direction of the grain.*
  - *Try not to rub through the finish or its back to step FIVE!*
  - *In the opinion of the editor it is neither necessary or advisable to wax this finish when this is completed.*
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## ***STEP NINE***

*This is the last bit if you decide to omit steps SEVEN and or EIGHT!*

- *If you decide to omit steps SEVEN and or EIGHT allow the stock to "cure" as follows.*
  - *When complete let the Stock dry hard. At least a week at room temperature.*  
*If you now satisfied with the completed finish, let the stock stand another a week or two before you assemble the rifle.*
  - *The reason for this last drying is that as the finish continues to "dry" over time, solvents continue to come off and may deposit themselves on the cool metal and optics surfaces "NOT GOOD" so don't be in to big of a hurry to put the piece together because you are now finished.*
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### *The Editors Comments & Notes*

- *I am not recommending or promoting any products as part of this publication.*
- *I would like to give credit to the following people for there assistance:*  
*"Woodworker s Supply Technical Customer Assistance 1-800-645-9292*  
*Behlen's Products, Amsterdam, New York*  
*John Sones (Gun Smithing & Stock Making Instructor Retired)*  
*Michael Lewis, Walden, CO. (Rifle Maker)*  
*Dave Caboth, Nitro Gun Works, AK (Rifle Maker)*

- *For this document I used the following Materials:  
Behlen,s\* Table top Varnish & Reducer  
T&R Linseed Oil\*\*  
Power Kleen 100% Mineral Spirits  
3M Synthetic (Nylon) Steel Wool\*\*\* #000  
3M Imperial Wet or Dry sand paper from #320 to #2000*
- *I found in that in Denver during February and March it was necessary to allow 48 hours between coats for steps "Five & Six" using the above "Modified Varnish" mixture even though I am working in a heated work area.*
- *I am interested in producing a Practical Usable finish so I did not take the finish any finer then #2000 grit with more than excellent results.*
- *In the opinion of the editor it is neither necessary or advisable to wax this finish when it is completed.*
- *\*I am told that McClosky, Wheeling, IL. "Marine Spar" is an excellent choice but I have not tried this product. Also, I understand there are some "Plastic" Varnishes that work very well with the above method with slight adjustments to the mixture.*

*\*\*Tung Oil may be used with some varnishes.(Be sure to read any Manufacturers Recommendations & Cautions.)*

*\*\*\* In my opinion NEVER use "Metal" type "steel wools" on a gun stock.*