

CAST MODIFICATION

CHAPTER 19

CAST DUPLICATION



CAST DUPLICATION

There are many reasons for being able to take a cast and duplicate it or make another object.

Let's start with the need to remake an old pair of shoes that still fits very well. We should begin by inspecting the old pair of shoes to determine if they are in good enough condition to stand up to the stress of duplication and hold enough of their shape to make a good reproduction.

Look at the outside materials and look at the insides too.



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7 These shoes look ok.



8 We need to carefully use painters masking tape to seal up these shoes and build an extension on top. We are very careful to not distort the shoe while masking.

Sprinkle a little talcum powder inside the shoes and shake the shoes to spread the talcum powder evenly all around the inside. The talcum powder will help to keep the wet plaster from sticking so hard to the inside of the shoe. Otherwise, you might have a harder time getting the cast out of the shoe.

Pour plaster into the old shoes. Shake the shoes as needed to get the plaster everywhere inside without remaining air bubbles. Let the shoes sit for about one to two hours. The plaster needs to be firm, but not hard as a rock and not soft.

Remove the masking tape. Break the cast in approximately the middle with a large screwdriver and hammer. Pull the cast out of the shoes.

If you just want to make a new pair, you can clean up the old pair, repair as necessary and/or keep them as a model.

If you want to re-leather the old pair of shoes, pull off all the old soles. See pictures 9 thru 12 page 4.

Then use thinner and carefully strip off the old leather. This was described in Chapter 9 of book 2.

Now, add 5 to 7 plaster splint strips from the little toe to the big toe to add length to the plaster cast. Then plaster up this front correction nice and smooth. Let it dry.

Put the casts back into the old shoes. Clean up the outside of the old shoes and apply new leather. Put new soles on the old shoes. Take out the casts. Clean the insides of the old shoes. Clean up and polish the outside of the old shoes.

Now, you have a completely re-leathered and re-soled pair of old shoes. See picture 12 page 4.

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If you are going to make a new pair, you can proceed as in the following pictures by looking at the cast very closely. Determine if it is acceptable as is, if it needs some clean up, modification or improvement.

If the cast needs fixing, fix it. Turn it into a proper last. And, don't forget to add plaster splints to the toe area as explained on the previous page.

Because of the use of talcum powder, and other wet and dry issues inside of the old shoes, the wet plaster cast has a tendency to be a little short. That is why we add some length before re-leathering or making a new pair of shoes, boots or sandals.

Pictures 13 to 19 are looking over the cast/last.

Pictures 20 to 27 are the new shoes.



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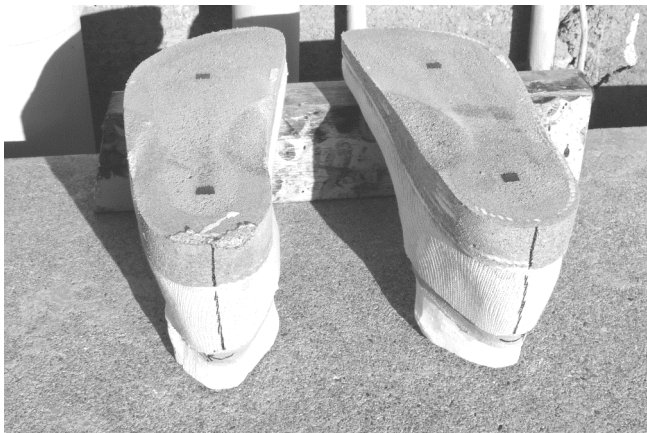
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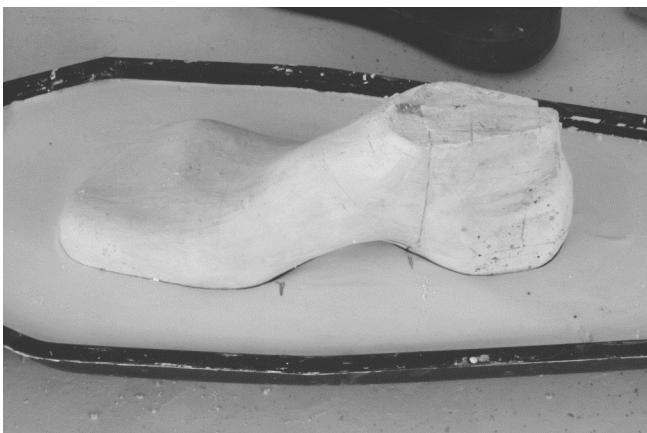
DUPLICATION OF A CAST/LAST AND/OR PARTS

These are fine examples, but it is the ways and principles of working with plaster that are important to comprehend. If you know how to use plaster, you can do almost anything you want. That is why plaster is the basic medium for sculpture.

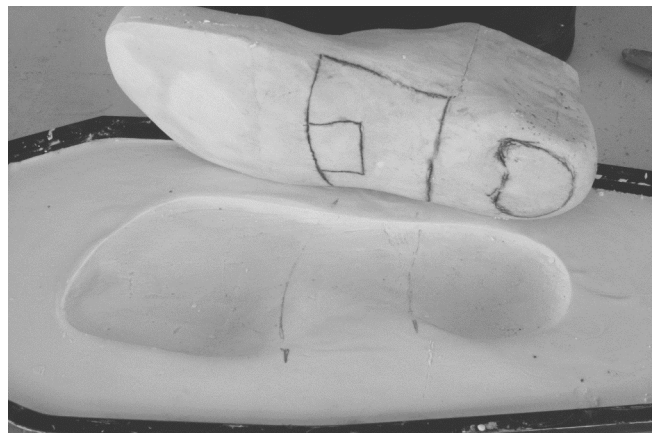
I think some of this example (the parts) is generally, beyond the scope of normal molded footwear making. The Doctor asked if I could do whatever was possible to duplicate this modification as correctly as possible.

This example is certainly an unusual procedure.

This example is the old traditional way of making negative and positive casts and casts or lasts with plaster of Paris.

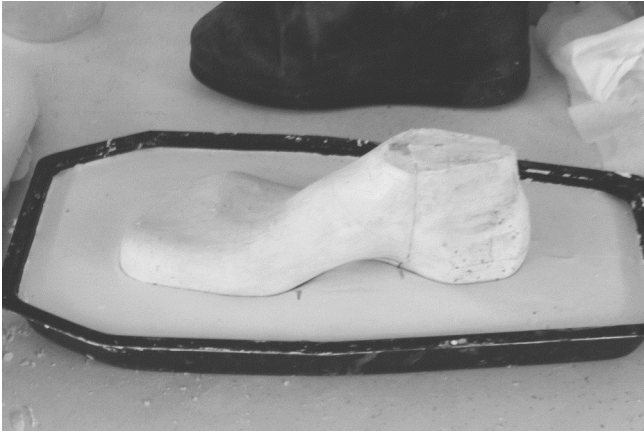


28 I already have a good working cast that made the shoe correctly. The Doctor wants the modifications to be added to the next pair of shoes, but removable and adjustable. I put Vaseline® on the cast and pressed it into slightly firm plaster.



29 The bottom plaster has firmed and the last was removed to show you the imprint it made. Vaseline® or soap, etc. can be applied to the top of bottom plaster.

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30 The last is put back into/onto the hard negative bottom plaster.



31 The top of last is covered with wet plaster and as it firms it is quartered with a butter knife.



32 After the top plaster has firmed sufficiently, it is removed. Now we have 5 pieces of the negative cast and 1 piece of the positive cast, which is also a last.



33 Now, we are going to make a new positive cast, which will also be a last with two added parts or appliances as prescribed by the Doctor. They are the arch support and a heel block.



34 I have inserted both parts into their proper positions inside the negative cast pieces.



35 The 5 pieces of the negative cast have been put together; they are on the left. The unaltered last is in the middle. The old shoe from which the appliances came, is on the right.



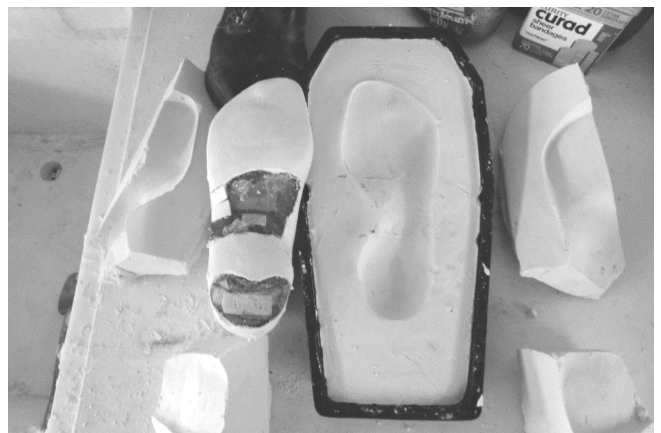
36 The dry plaster is mixed with water and stirred.



37 The plaster has been poured into the 5-piece negative cast.



38 The top 4 negative cast pieces have been removed so you can see the new positive cast of a last.



39 The plaster has hardened and the new positive cast of a last with the two captured appliances is shown.

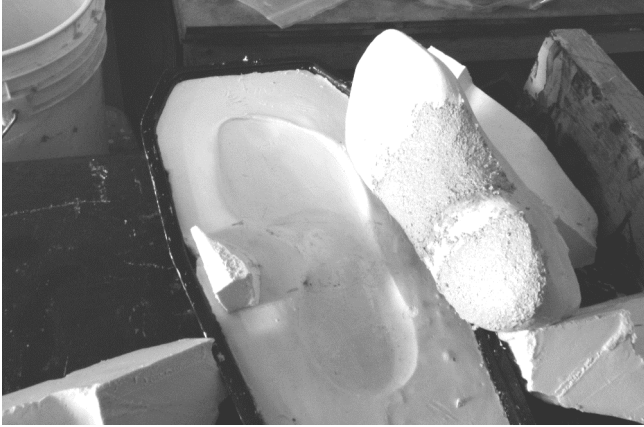


40 The appliances have been removed from the positive cast of a last.



41 The appliances have been turned over so you can see the undersides.

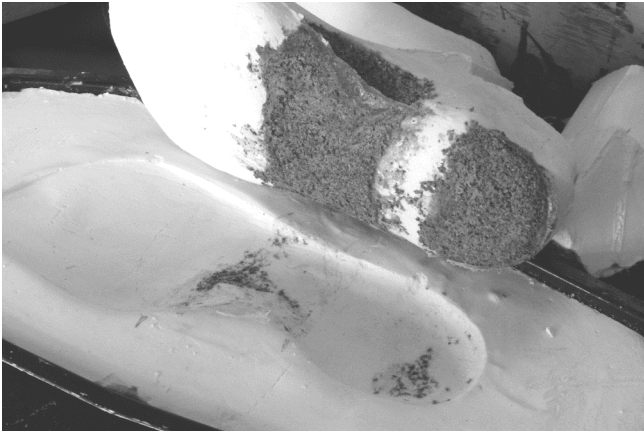
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42 I have just put wet "mud" into the positions of the appliances and smoothed and shaped it with a wet butter knife.



43 I have just pushed the wet "mudded" last into the bottom negative cast.



44 After drying 24 or more hours, the last was removed from the bottom.



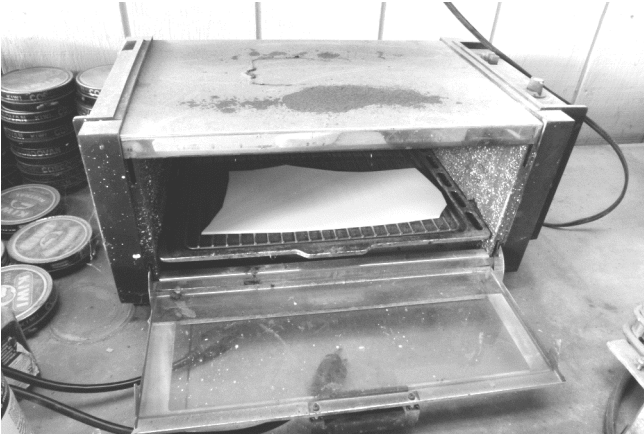
45 The appliances were detached from the last.



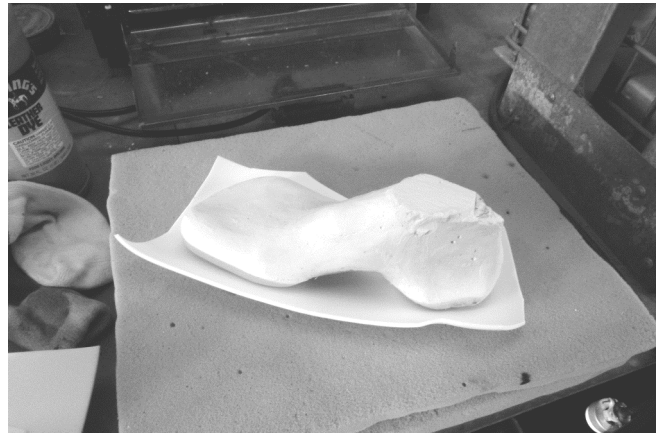
46 The appliances were trimmed.



47 The appliances were sanded.



48 A piece of 1/8" Pe-Lite® insert material was heated in the oven.



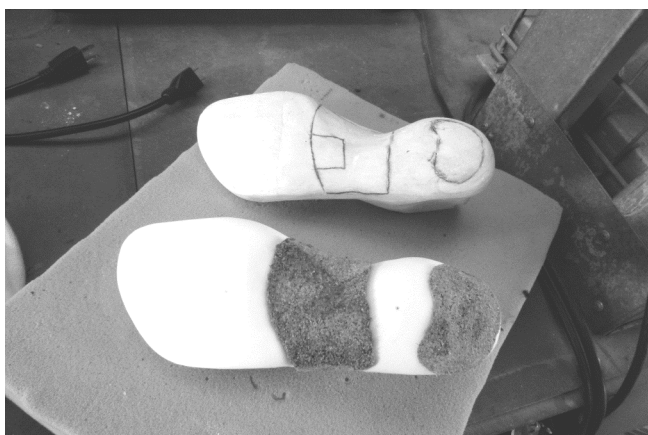
49 The last was pressed into the warm Pe-Lite®.



50 The Pe-Lite® has taken the shape of the last without the appliances.



51 There are two ways to proceed. First, is to make the shoe with the insert above so that the "mud" on the bottom has all of the appliances shapes. Or secondly, to make the shoe the way as the old unaltered last without appliances.



52 If the second way is preferred, then the appliances are added in under the insert in picture #28. This way, the appliances are separate and removable for adjustment.

This client is a medical doctor who had a severe injury. She could not walk for a year after the accident. Now she can travel and walk all around the world.

I would not be doing this kind of extreme work for someone I didn't know and who didn't have medical training.

I don't build molded shoes for orthotics. And, I don't recommend pre-made orthotics be placed in molded footwear unless there are special requirements. I have only observed about 2% of molded footwear wearers to use orthotics in molded shoes.

I am not a medical doctor so I recommend that all people with special problems consult with a medical doctor about their needs and provide an Rx if applicable.