

## CASTING METHODS & SPECIALTY FOOTWEAR

### CHAPTER 14

#### OTHER CASTING TECHNIQUES



## POSTURE AND ALIGNMENT

When the person to be cast has a good body, good feet and is cooperative, it is fairly easy to get a good cast and good footwear. However, most people who want and need custom made, molded shoes, boots and sandals, have unique characteristics that need to be considered and addressed by the caster in order to achieve a good cast.

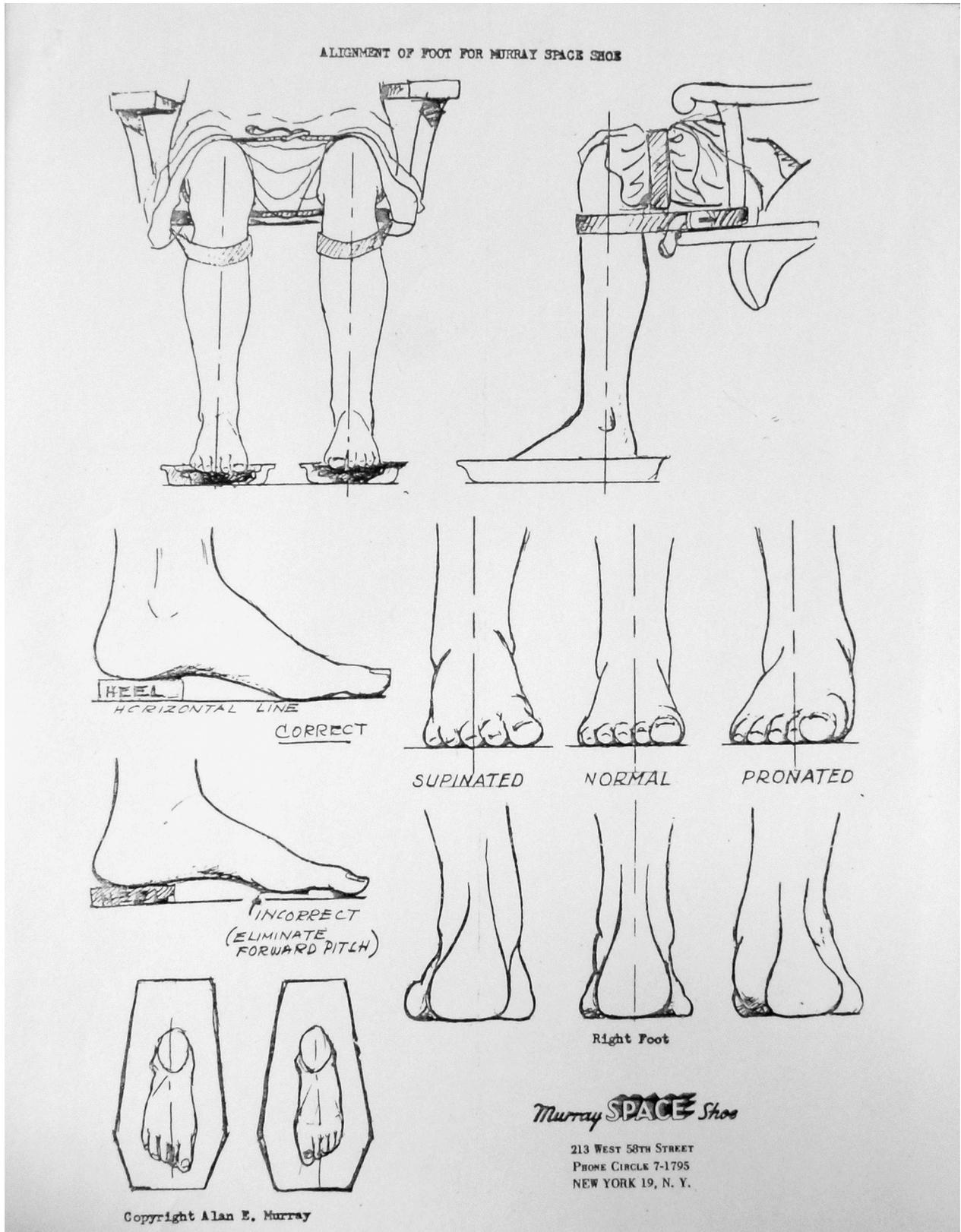
The caster needs to know about and consider many possible ways which might aid the casting and ultimately the fabrication processes. Sometimes, the caster just has to think and become innovative on the spot, based on the individual to be cast.

This chapter will try to present some of the common techniques that might have to be considered and used when appropriate. Some of the techniques I use all the time with everyone I cast. Some techniques I use only occasionally.



The first step of casting is to consider the client. Look for good posture and alignment. If the client needs correction and the caster thinks the client can improve the situation, the caster needs to explain to the client what they would like them to do. And maybe, explain to the client Mr. Murray's basic concept of the need for correct posture and alignment in order to produce a good casting.

Notice that this customer is sitting up very straight and proper but the chair is too tall for her legs. This will be remedied in a few pages.



This illustration is from page 17 of chapter 11.

A lot of credit must go to Mr. Murray because he not only figured out how to make an ice skate, shoes, boots and sandals, he also understood that the whole body posture and alignment of the wearer was important.

## THE CASTER

Hopefully, the caster and artisan/craftsperson who does the fabrication, will always be the caster. If you want to produce truly custom made and artistic products, forget about the assembly line with lots of workers. The artisan and or craftsperson will shine by being allowed to totally express all their own individual talents from the casting through the making of custom made molded footwear.

The best possible world will be when you learn and make your own molded shoes, boots and sandals.

## THE CHAIR AND THE CASTING BOARD

The casting chair is a very important tool for the casting process. It will have to contribute favorably to “good posture” for a variety of people. It will have to be the proper height or some type of supplementation will have to be considered.

Long legged people may have the need of some height increasing cushions added to the seat of the chair to raise them up, or the knees will have to bend more. Short legged people will need a simple casting board which can be placed on the normal casting surface (see the casting process in this chapter) or it can be raised up on blocks as necessary (see casting process in chapter 11).



Notice extra blocks on top of casting board and lifting blocks under casting board.

## THE INFORMATIONAL WORKSHEET

The caster has the responsibility of gathering information which will be useful to the fabrication processes. An informational worksheet is really necessary. We all forget. We need a good reference about what to do and what has been done. A copy of my informational worksheet is on page 5.

You can devise your own informational worksheet. Some basic format is always going to be better than a blank sheet of paper. I attach a lot of things to my basic informational worksheet like leather samples, fabric samples, soling samples, extra diagrams, cards, letters and correspondence with the customer.

The use of pencil, pen and paper drawings is a great aid. They help to produce a permanent record of observations and ideas about what to do at a future time. That is why the informational worksheet is so important!

MFG. NO. \_\_\_\_\_

CASTING DATE \_\_\_\_\_

CASTER \_\_\_\_\_

CUSTOMER INFORMATION

LAST NAME \_\_\_\_\_ MI \_\_\_\_\_ FN \_\_\_\_\_ AGE \_\_\_\_\_

STREET ADDRESS \_\_\_\_\_ SEX \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_ WEIGHT \_\_\_\_\_

PHONE \_\_\_\_\_ HEIGHT \_\_\_\_\_

ORDER INFORMATION

SHOE STYLE \_\_\_\_\_

PERFORATION STYLE \_\_\_\_\_

LEATHER \_\_\_\_\_

COLOR \_\_\_\_\_

INSERT \_\_\_\_\_

LINING \_\_\_\_\_

SOCK \_\_\_\_\_

CONSTRUCTION WEIGHT \_\_\_\_\_

CUTER SOLING \_\_\_\_\_

SPECIAL INSTRUCTIONS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

BALL \_\_\_\_\_

WAIST \_\_\_\_\_

INSTEP \_\_\_\_\_

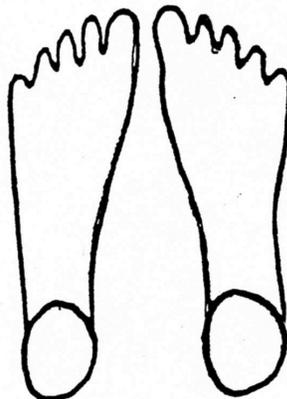
HEEL \_\_\_\_\_

CUTS \_\_\_\_\_

SPLINTS \_\_\_\_\_

LENGTH SITTING \_\_\_\_\_

LENGTH STANDING \_\_\_\_\_



BALL \_\_\_\_\_

WAIST \_\_\_\_\_

INSTEP \_\_\_\_\_

HEEL \_\_\_\_\_

CUTS \_\_\_\_\_

SPLINTS \_\_\_\_\_

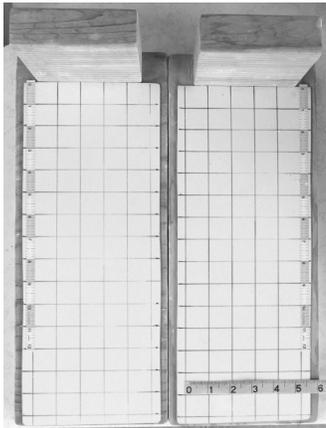
LENGTH SITTING \_\_\_\_\_

LENGTH STANDING \_\_\_\_\_

MEASUREMENTS

Another basic tool of casting is a tape measure. It is essential to the observing and capturing of measurements.

- Use it to measure:
- Length of the foot
  - Width of the foot
  - Circumference around the ball
  - Circumference around the waist
  - Circumference around the instep
  - Circumference around the heel
  - Circumference around the ankle and/or calf
- And Heights



1 Measuring boards for measuring length of feet. Measure and record each foot.



Notice measuring tape along outside edge of each measuring board.

2 Measuring width of foot. We usually only need to measure across ball of foot but sometimes there is a necessity to know about another area. Measure and record each foot.



3 Measuring ball of foot.



4 Measuring the waist of the foot.



5 Measuring the instep of the foot.



6 Measuring the heel of the foot.



7 Measuring the ball of the foot.



8 Measuring the waist of the foot.



9 Measuring the instep of the foot.



10 Measuring the heel of the foot.

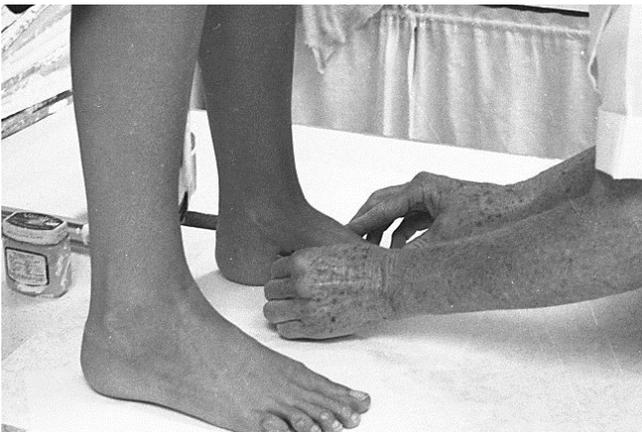
## ELONGATION DRAWINGS

The caster needs to take elongation drawings of each foot of every client. Take the sitting drawings first and then the standing drawings. The client should be asked to bend the knees and let the toes relax and spread when in the standing position.

These drawing come in handy when a name is lost from a cast because it can be easy to identify the foot by the shape and size. The elongation drawings become a very important reference during the cast modification processes.

Any unusual traits or irregularities, injuries, surgeries, sores, tender spots etc. can recorded on these elongation drawings. A common notation is about toes that lift or move in odd ways.

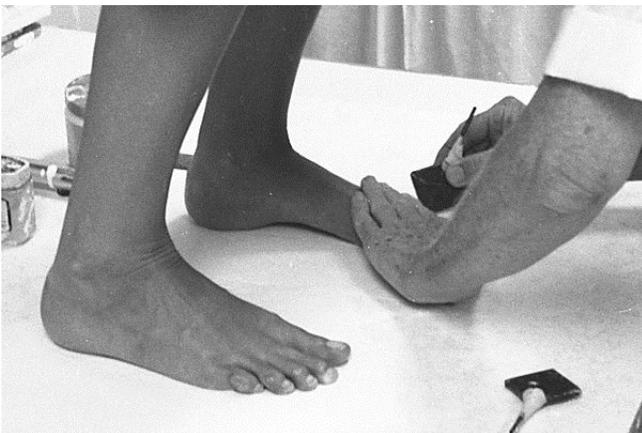
You will find these drawings to be very, very useful.



11 The first elongation drawing is a tracing of the foot while the client is sitting with normal weight on the feet. As you trace the outer edge of the foot, try to make your lines close to the actual shape and size of the outer edge of the foot.



12 When you finish the first foot, go to the other foot. You can use a standard pen or pencil. But when you do the standing elongation drawings, use a different color, or the pencil instead of the pen or vice versa.



13 This is the drawing in which you want all the elongation possible, so ask the client to bend forward with the knees, and relax the toes and splay the toes. Notice the caster is holding down gently.



14 You want to be very mindful while doing the arch. You want to capture that arch shape the same way you did the sitting. Later, you may use that area and the toe area as a comparison between sitting and standing.



15 Another important area for later comparison is the ball joint or bunion area and the tailors joint. When modifying or working the cast into a good last, you almost always want to be influenced by the standing tracing.

### THE VERTICAL STRING

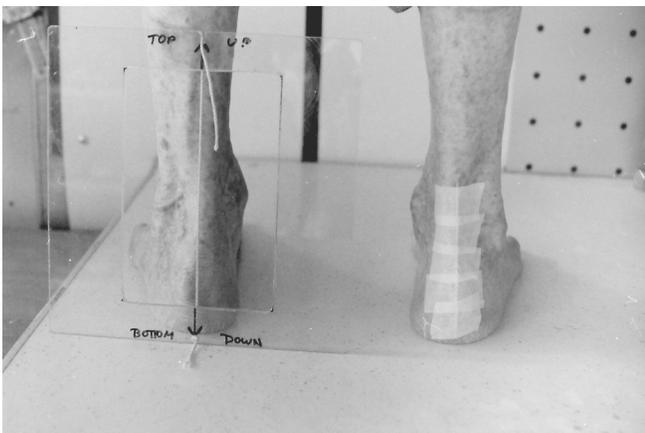
The vertical string is a very useful and important reference just like the elongation drawings.

Both the vertical string and the elongation drawings are approximations!

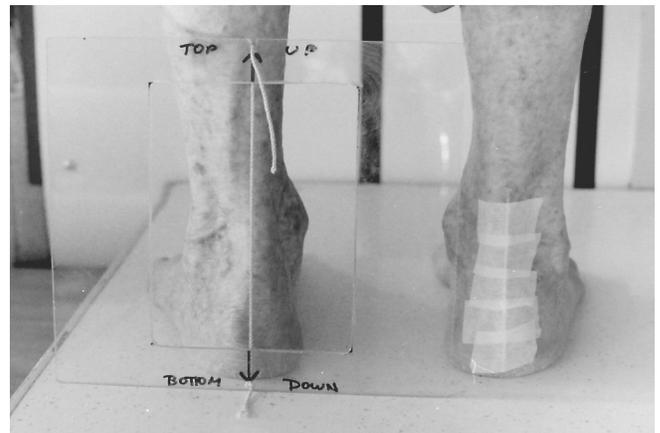
They both have a lot of uses!

I ask the client to stand and face the wall so their back is to me. I tell them to stand as perfectly straight as they think they should. I can quickly check their standing posture and alignment. I make a mental note of what their body language is telling me about how they stand, walk and will wear their footwear. I am very concerned about balance and the deviations.

I use a homemade clear plastic square to align a vertical string. Then I use micro pore or surgical tape to attach the string to the back of the foot and leg of the client.



16 These are essentially the same picture. I want you to look at it twice because it is so important to comprehend why this will help in the fabrication process. The vertical string is placed by using this clear plastic squaring devise.



17 Please note that how a person stands and how they sit for casting, may not be the same alignment. Later, we are going to transform this vertical reference into a horizontal reference.

Once the vertical strings are attached, the client is asked to sit down again. Then, their posture and alignment are rechecked and corrected if appropriate. Usually the casting may begin at this point in time.

The following considerations are less common and apply only when needed.

I may measure and write down or take pictures, when necessary, of useful information about adjustments, compensations for lifts, short legs and many other unusual circumstances.

Sometimes there is a customer with a particular need that requires the cast to be made standing. Single foot casting is the only option because full weight bearing is usually not correct. I prefer to let the customer stand on one leg with the use of a walker with out wheels. Then, the leg and foot being casted can be held as required to produce a high quality cast.

Sometimes I have had to cast on the floor because the customer could not leave the wheel chair. I have also had to cast some customers with open wounds, sores or not completely healed injuries and/or surgeries. The only way to keep the foot dry and clean of plaster is, to wrap the foot (or part of it) in Saran® wrap before casting.

All these additional issues may need to be addressed before the actual casting begins. They are all part of the necessary techniques with which a caster must be able to deal and provide solutions when possible. If you can't do something, let the client or customer know.

#### WRAP CASTING WITH REMOVABLE FRONT OPENING

There may be circumstances and times the "good" Gypsona®S plaster splints are not available. The following plaster "shell" method with a removable front opening is sort of common in the medical practices.

You should be extra careful when putting the removable top back into place.

This method will work as an alternative to the wrap casting "butterfly" technique of chapter 12 and 13.



18 The caster is looking at the top of the foot and will look at the bottom.



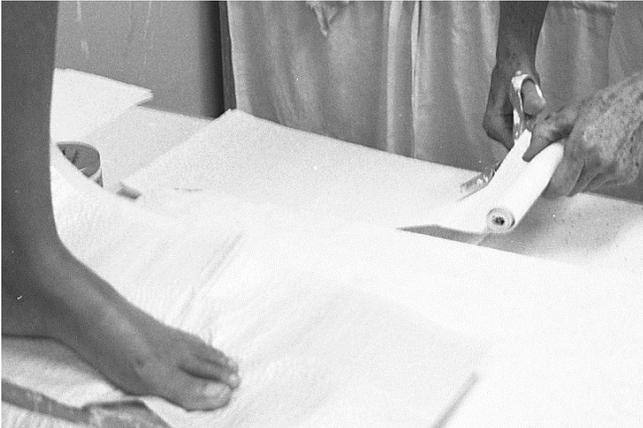
19 The caster is applying cream to the feet.



20 The client has been aligned and the legs are strapped in order to aid the client in holding the good position.



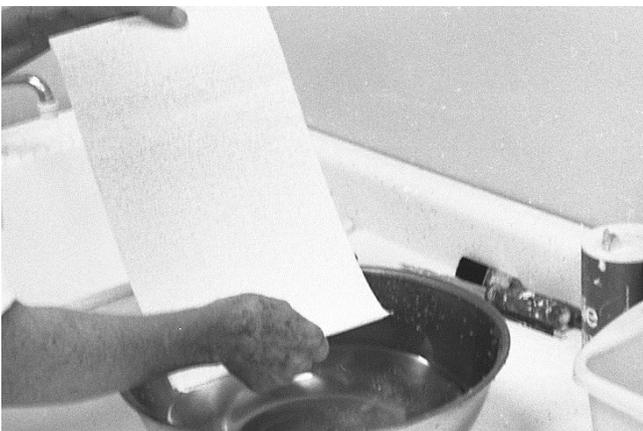
21 Ditto.



22 The roll of Gypsona® plaster splints has been folded to 5 layers and is being cut to the proper length.



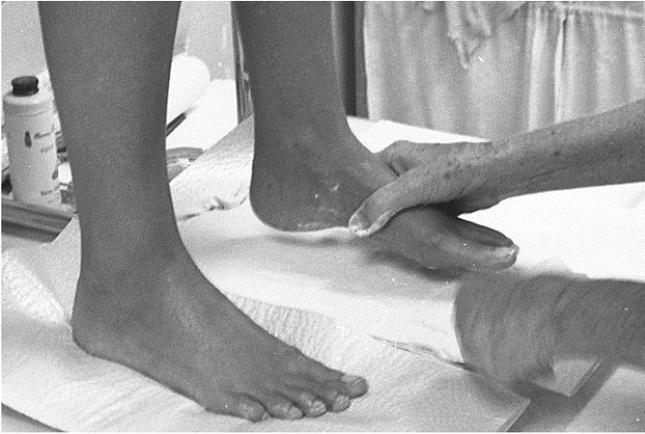
23 The second foot bottom of plaster splints is being folded.



24 The plaster splints are about to be run through the warm water.



25 The wet plaster splints are allowed to drain.



26 The plaster splints are placed under the left foot.



27 The caster's hands do all the important work of bringing up the wet plaster splints and shaping the cast to the foot.



28 Ditto.



29 Ditto.



30 Ditto.



31 Ditto.



32 The caster is lifting the cast under the arch. Because the cast is wet, it will conform. It may be necessary to repeat the pulling up of the wet cast until the plaster starts to firm.



33 Notice that the top front opening has been started.



34 The caster is working on the toe area.



35 The caster is folding back the plaster splints to shape the front opening.



36 The opening is completed.



37 The plaster splints for the right foot will be wet.



38 The plaster splints are draining.



39 The plaster splints have been placed under the foot and the caster is shaping the cast.



40 Ditto.



41 Ditto.



42 A better picture of top openings.



43 Ditto.



44 The caster is applying Vaseline® to the edges around the top opening.



45 Ditto.



46 The top plaster splints are measured, cut, wet and drained.



47 The top cover is applied over the opening.



48 The top cover is smoothed to the foot and bottom of cast.



49 Ditto.



50 The top cover is finished on the left foot.



51 Vaseline® is applied.



52 The top plaster splints are measured, cut, and wet.



53 They are draining.



54 The top cover plaster splints are applied and worked to the shape of foot. Remember to get out any air bubbles.



55 Ditto.



56 The right top cover is finished.



57 The left top cover is being removed as soon as it is firm enough.



58 Ditto.



59 Ditto.



60 The left foot is lifted out of the bottom.



61 Ditto.



62 View of bottom of cast shell.



63 View of completed cast shell with top in place.



64 Removal of top cover from right cast.



65 Ditto.



66 The right foot is being removed.



67 View of completed cast with top cover back in place.



68 The foot washing.



69 The top cover can be secured by laying a layer or two of wet plaster splints over the top and onto the bottom of the shell.

I still like the wrap casting "butterfly opening" method the best.



The concentrating craftsperson is sanding the underlap leather of a shoe in the "making".