PROJECT WORK

STUDIES ON

MANUFACTURE OF FASHIONABLE COURT SHOE BY USING STINGRAY FISH

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DEDICATED TO

MY RESPECTABLE PARENTS

ACKNOWLEDGEMENT

At the very beginning, I acknowledge the immeasurable blessings and profound kindness of Almighty Allah –the supreme authority of the universe.

I am also grateful to Mr.Noor Mohammad, Head of the Department, Depts. Footwear Technology, University of Dhaka for assigning me the task and for his invaluable guidance during this study and also for his kind help with many information and ideas. I would like to express my gratitude to my Project work Coordinator, Professor, Dr .Khan Rezaul Karim,Principal,Bangladesh college of Leather Technology (BCLT) for his

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Finally, I express my appreciation and hearty thanks to others who have directly or indirectly helped me to complete this project work.

Mohammad Rakibul Hasan Numan

PREFACE OF MY PROJECT WORK

Out of the original need to protect our feet from cold, heat, moisture and dangerous surfaces, shoes became an inseparable part of our life. The English playwright **George Bernard Shaw** said that, **if somebody established a complete museum of footwear development, he would in fact create a picture of material cultural history starting from the modest beginnings through the complicated mistakes up to the present purposefulness.**

Already, I have mentioned my project work name is **Manufacture of fashionable Court Shoe by using stingray fish leather.** I have divided my project work into five main parts. The first part deals with history of shoe and court shoe for international market, flow chart of ladies court shoe production, in order to give a clear idea about **Ladies Court Shoe.**

Chapters on product development, cutting, closing, lasting and finishing have also been included.

The last part deals with various types of manufacturing problems, different types of physical test. Limitation and suggestion have been included so that the students may be benefited after reading them.

OBJECTIVE OF MY PROJECT WORK

My project work objective is to make the Fashionable **Ladies Court Shoe by using stingray fish leather.**

With the change of life style modern ladies are more fashionable. They are more enthusiastic about new style and fashion. For satisfying these kinds of ladies desire I have chosen to make ladies court shoe by using stingray fish leather.

I want to identify **Ladies Court Shoe** manufacturing problems with stingray fish leather and solve these problems and to develop design.

TOPICS INSIDE

1.1 FOOTWEAR:

In English, the term "shoe" dates back to many centuries beginning with the Anglo – Sexon. "Sceo" meaning a foot covering and evolving into "Schewis", then "Schooys" and finally "shoe". The German "Schuh" has the name origin. Through the centuries the word "shoe" has evolved with at least 17 different spelling and some 36 variations of the plural.

Any foot covering in the form of shoes, boots, slippers or hose used for utility and dress wear. Any form of footwear made of various kinds of materials or combination of materials like leather, canvas, rubber, textiles, wood and synthetics to protect the foot from cold, heat, thorns, hazards etc. and to serve as a costume in the form of sandal, shoe or boot. These shall include walking shoes, dress shoes, occasional footwear, sports footwear, occupational footwear, orthopedic and surgical footwear meant for the use of babies, children, ladies or gents.

1.2 PURPOSE OF FOOTWEAR:

The shoe has two primary functions to perform and has acquired through the years other lesser ones.

The primary functions are:

a) **To protect the sole of the foot**: To protect the sole of the foot from the heat, cold, dampness, dirt or roughness of the ground in walking and standing. In its simplest form this is achieved in the primitive "sandal" which is nothing more less than a piece of leather, wood or other material, fixed under the foot by a strap or other means.

b) **To protect the top surface of the foot**: The upper part of the foot, and if required, the leg, from cold, rain, thorns, heat and insect or other bites. In its simplest form this is a bag of leather or material wrapped round the foot and is here given the generic name of "Moccasin". It is essentially that worn by a hunter, as it is flexible and specially suited to forest conditions.

c) **To assist the foot to perform some abnormal task:** This includes the various sports such as football, cricket, hockey, running, fishing, riding, mountaineering, dancing, etc. all of which today have their own special footwear. So, also, have many trades, such as mining, deep-sea diving, munitions manufacture and fire-fighting, and the armed services. It should be noted here that more primitive peoples with much stronger and tougher feet can tackle many of these sports, pastimes or occupations without special shoes, or, in fact, without shoes of any kind.

d) **To complete a costume:** This is particularly important today when costume designing includes not only the dress but also the hat, shoes. Gloves and handbag. In fact, the main purpose of the shoe may be to complete or enhance the remainder of the costume, the primary functions of foot-covering and sole-protection being subordinate to this.

e) **To indicate rank or office**: This is not applicable in western civilizations, unless we include the notorious "jackboot in this category, but formerly it was important, certain types

of shoe being restricted to certain classes; there is obviously a very close link here with the purpose stated in above Para.

f) **To overcome abnormalities**: in the foot itself, the surgical boot being the extreme example of this, while many shoes incorporate corrective devices, some more corrective in name than in fact.

g) **To fulfill the fashion:** In some cases, the protecting purpose becomes trivial and here the main purpose is to meet the fashion demand.

1.3 HISTORY OF FOOTWEAR:

Without footwear a human being cannot live. Even the primitive human being might have covered his feet for warm the production.

In English, the term Shoe dates back to many continues beginning with the Anglo-Saxon SCEO Meaning a Foot covering evolving in to Schewis" then "schooys" finelly Shoe.

At first might well have been pieces rush, bark or hide tied around the feet to project the shoe.

The Egyptians covered their feet by woven palm and papyrus leaves.

Men have been wearing hoses possibly science 10.000 BC. It was not Until about 1850 that the were first made as "Right and lefts" prior to that, all shoe wear "straights".

In the 13th country stylish people started wearing shoe with long, pointed toes. Narrower, Heeled shoe for woman wear trend during the region for Queen Elizabeth. The end the seven

countries brought renewed popularity to low shoes, with red heels, square toes, and enormous butterfly bows that were eventually replaced by huge buckles.

The 18th century bore the influence of French fashion.

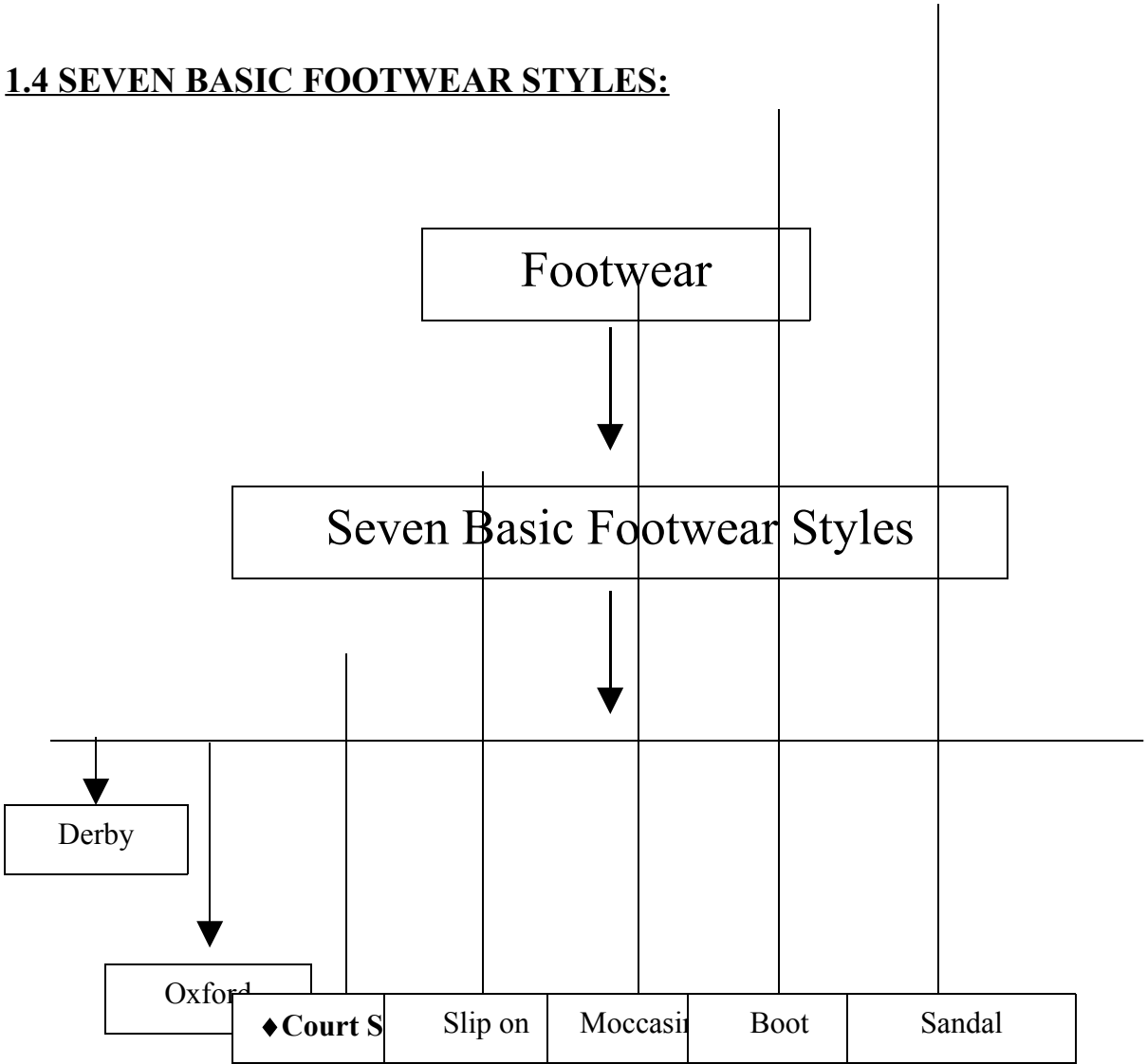
Decorated leather shoes or silk shoes on high heels set under the arch of the footwear in fashion.

Modern shoes, as we knows them today, probably have there roots in Tudor and Elizabethan, England shoes were made with bottoms, Lace, Eyelet, and in general decoration of all finds .

The application of computer in shoe production took place towards middle o the 20th century.

To day computer is used for last & shoe design, cutting, stitching, lasting & finishing.

1.4 SEVEN BASIC FOOTWEAR STYLES:



SEVEN BASIC FOOTWEAR STYLES

TYPES OF FOOTWEAR

Footwear is broadly classified into seven basic styles

1. DERBY

-Most commonly used formal and casual shoes.

- A very wide range of styles can be derived from a derby design - Unisex

- Can be identified from the following points: a. Lock stitch or stay stitch

b. The quarter can be opened till half of the tread line. c. The vamp and tongue will be on the same line. d. In most of the cases quarter will be on the vamp.

2. OXFORD:

a. Most widely used as formal shoes.

b. Unisex

c Quarter is locked at the vamp point and hence opening of the quarter is limited. d. Has an independent tongue which is stitched at the final stage of the upper. e. In most of the case vamp will be on the quarter.

3. SANDALS:

- A popular unisex footwear which is very comfortably - The foot is free at the toe and heel- The sandal serves according to the specific need; adjusted with the help of buckle.

4. COURT SHOE:

Shoes for ladies formal and casual wear The top line will be below the vamp point Can be made in different heel heights.

5. <u>SLIP ON:</u>

Slip on is also called as pantafola & loafer.

As the name indicates these shoes can be slipped in and slipped out very easily.

Does not have lace.

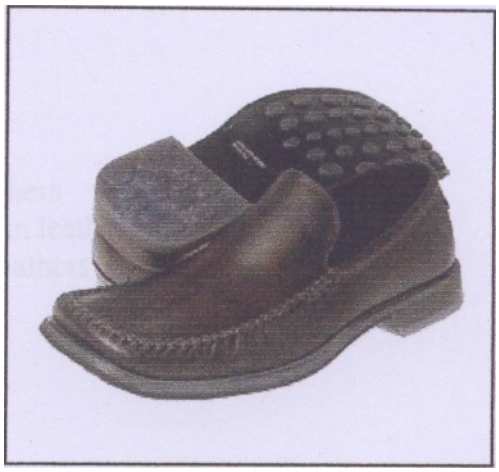
Can be with or without elastic

Saddle is present in most of these designs.

6. <u>BOOT:</u>

Casual shoes popular among kids and Teenagers
Different types of boots are Ankle Boot, High boot, Knee boot & Thigh boot.

7. <u>MOCCASIN:</u>



The most comfortable shoe to wear Expensive as
more leather is consumed Formal & casual shoe
Bottom will be covered with upper leather at the fore part Hand stitching
gives a good appearance.

1.5 DIFFERENT RAW MATERIALS USED IN FOOTWEAR MANUFACTURE:

We know that footwear has different components such as sole, insole, shank, upper, lace, eyelet, toe-puff, stiffener etc. So we will have to mention the name of Different materials used for different components. (A).

UPPER MATERIALS:

Leather: The properties which made leather unparallel to be used as upper materials are the following:

(i) Availability
(ii) Strength and stretch
(iii) Elasticity and plasticity
(iv) Flex resistance
(v) Foot comfort
(vi) Heat resistance
(vii) Water resistance
(viii) Surface performance
(ix) Ease of work
(x) Color fastness
(xi) Abrasion resistance

Types of leather:

Calf leathers Side leathers

- Full grain leathers Corrected grain leathers
- Printed side leathers Patent leather Suede leather Split leathers Kid leathers Pig leathers
- Sheep leathers
- Goat leathers Snake leathers

- Lizard leathers
- Kangaroo leathers Ostrich leathers Horse leathers Buffalo leathers

FABRICS:

(a) Duck
(b) Drill
(c) Swans down
(d) Flannelette
(e) Combined linings
(f) Faille
(g) Acme backer
(h) Satin
(i) Crepe
(j) Brocade
(k) Canvas
(1) Linen
(m)Corduroy
(n) Nylon mesh
(o) Electro-flock
(p) Deni

LINING MATERIALS

(a) Cow split,
(b) PU coated foam,
(c) Flame laminated foam
(d) PU film,
(e) Fabric, Cow full grain leather, etc

INSOLE MATERIALS:

The following are used as insole material:- Leather

- Leather board - Fiber board

- Cellulose board

SOLING MATERIALS:

There are different types of soling materials. They are:

1) Leather

2) Leather board

3) Resin rubber

4) Vulcanized rubber-solid –cellular

5) Crepe rubber

6) Thermoplastic Rubber (TR)-l. Solid, 2.Cellular

7) PVC (Solid)

8) PVC (Cellular)

9) PVC (Blends)

10) PU reaction moulded-1.Cellular, 2.Solid

11) Thermoplastic PU-1.Solid, 2.Cellular

12) EVA (Cross-linked)

13) EVA (Thermoplastic)

14) Nylon (PA)

15) Polyester, solid, units

16) Polycarbonate.

17) Hytrel (EEC thermoplastic elastomer

TOE PUFF MATERIALS:

Toe puff materials are as follow:
Vegetable tanned leather
Nitro cellulose impregnated fabric Poly styrene impregnated fabric Thermoplastic toe puffs Print-on, Paint-on, etc.

STIFFENER MATERIALS:

Stiffener materials are as follow:- Vegetable tanned leather - Leather board - Fiber board - Solvent activated plastics - Thermo plastic counters

SHANK MATERIALS:

Shank materials are as follow:- High grade carbon steel - Wood
- Mill board - Plastic
- Fibre board

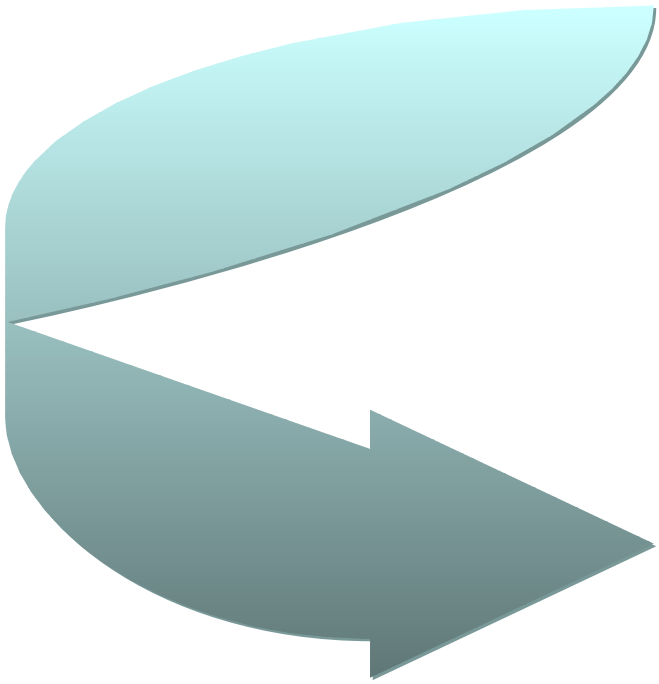
FASTENERS MATERIALS:

Fasteners materials are as follow: Zips Lace
Buckles and straps Trims Elastics

ADHESIVE MATERIALS:

Adhesives materials are as follow:- Natural Rubber/latex - Polychloroprene adhesive - PU adhesive

CHAPTER 2



2.1 HISTORY OF LADIES COURT SHOE

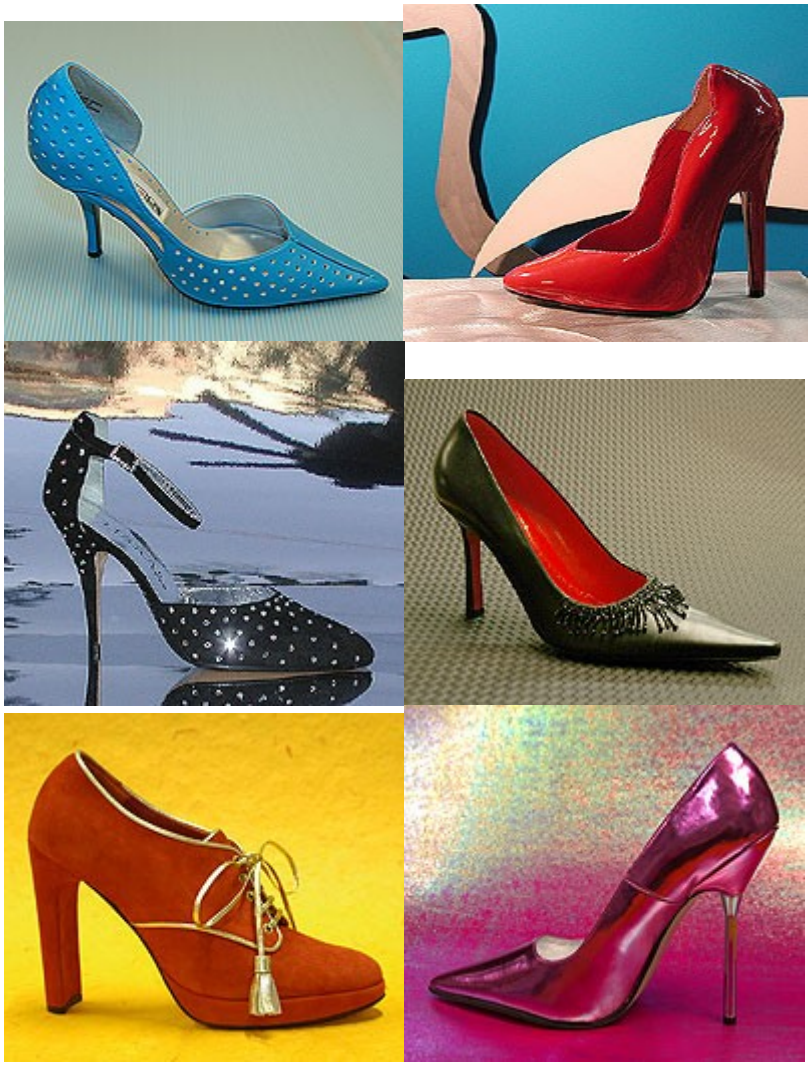
The ladies court shoe style has been with us for several centuries: a simple, sleek, slip on shoe with a heel of various heights and shapes. The court shoe style itself has been subject to thousands of fashion variation and treatments. The court shoe received great impetus with the invention of elasticized goring in 1837 by j. sparkes hall, boot maker to queen victoria the new hugfit of the court shoe with out benefit of fastening delighted the queen and the court shoe rose rapidly in popularity.

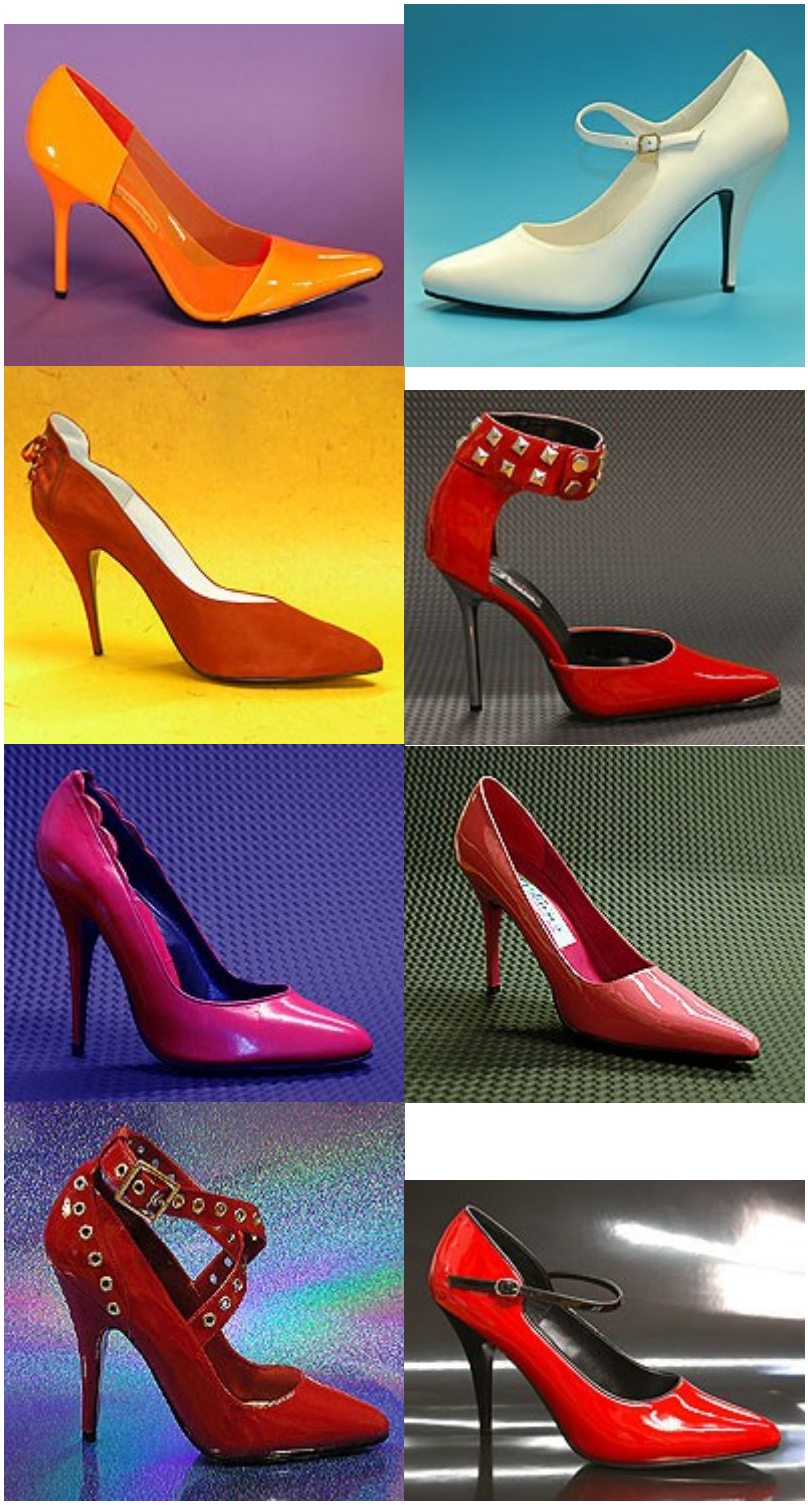
It has an unbroken top line and the top line will be bellow the vamp point. The name derived from a style of shoe once worn “at court”.

It is also called “pump shoe” why do we call it “pump”? the name derived from the carriage foot men of England, who ware called “pump”. they wore a standard uniform shoe, a plain, simple slip on.

When the British gentry adopted the style tough in much more elaborate form, they retained the word “pump” in French, the word “pompe” means an ornaments, though there seems to be no link with the pump shoe style.

2.2 COURT SHOES FOR FASHION PURPOSE:

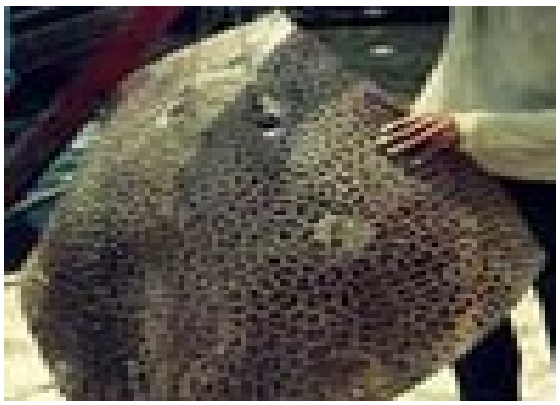




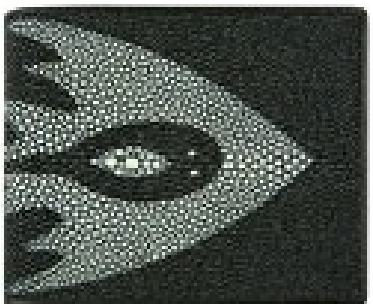
2.3 STRINGRAY FISH:

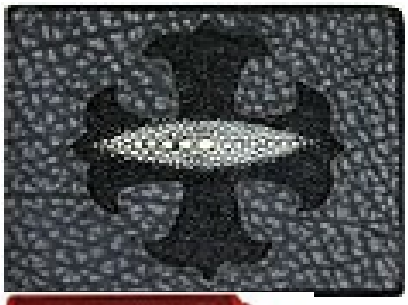
Stingray is a cartilaginous fish of the family Dasyatidae or Urolophidae, having a flattened diamond shaped body and a poisonous spine at the base of the tail. It's mainly sea fish. It's available in our country. But raw Stingray fish leather is mostly found in Thailand, Australia and some other country.

Genuine Stingray Leather Products.

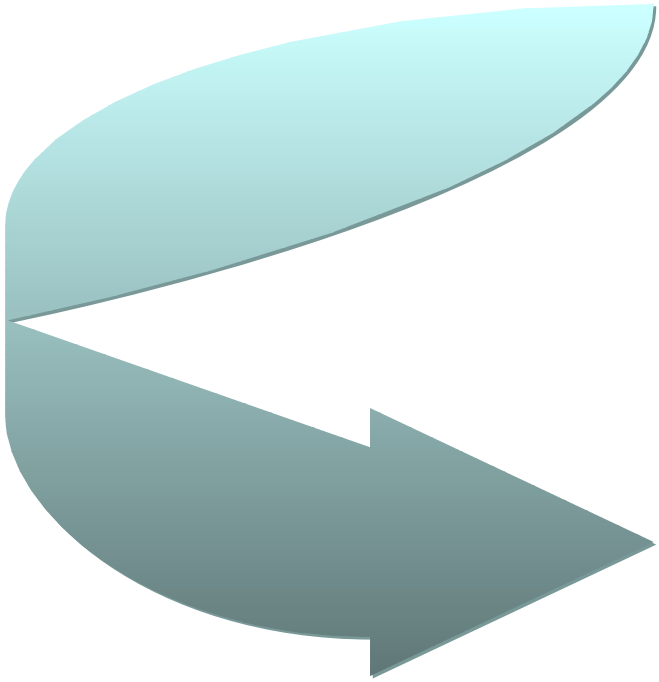


Shopping place for genuine Stingray leather wallets, belts, bags, accessories from $11.99. Stingray leather has become a new fashion statement trend in the world leather peerless style to accessories. Stingray leather creates a wide new range of possibilities for original designs for wallets, belts, shoes, garments and other leather accessories market. It brings a touch of class and.





CHAPTER 3



3.1 FLOW CHART OF LADIES COURT SHOE PRODUCTION:

Design Inspection

↓

Pattern making (Upper, lining, Insole, Sole, Etc.)

↓

Leather sorting

↓

Leather cutting With Lining

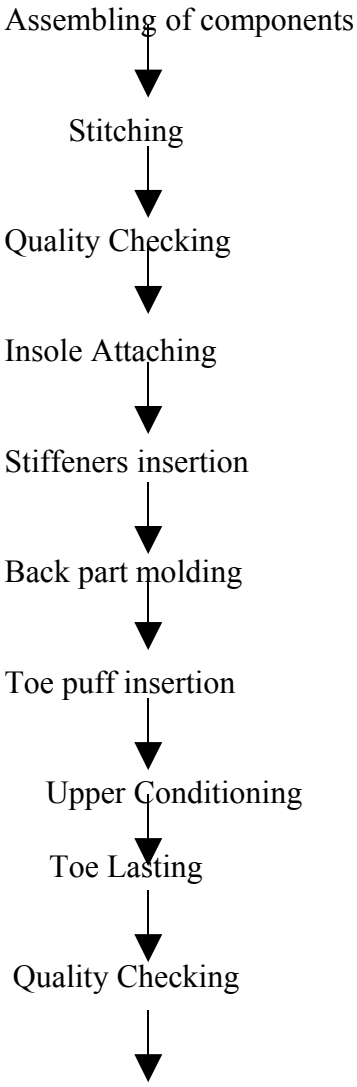
↓

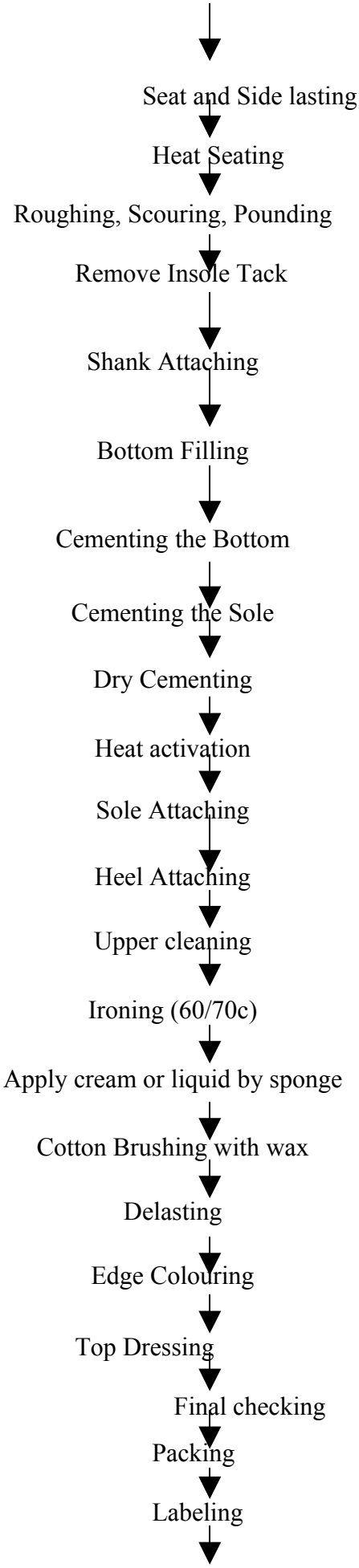
Quality checking

↓

Repairing (if required

↓


Assembling of components
Stitching
Quality Checking
Insole Attaching
Stiffeners insertion
Back part molding
Toe puff insertion
Upper Conditioning
Toe Lasting
Quality Checking


Seat and Side lasting
Heat Seating
Roughing, Scouring, Pounding
Remove Insole Tack
Shank Attaching
Bottom Filling
Cementing the Bottom
Cementing the Sole
Dry Cementing
Heat activation
Sole Attaching
Heel Attaching
Upper cleaning
Ironing (60/70c)
Apply cream or liquid by sponge
Cotton Brushing with wax
Delasting
Edge Colouring
Top Dressing
Final checking
Packing
Labeling

Dispatch

3.2 PRODUCT DEVELOPMENT

Product Development

Produced Development is the process of designing new styles of adapting existing or previous ones & than specifying the materials and components, providing the equipment & detailing the methods & processes to the followed in order that the styles can be produced in bulk & than will satisfy the needs of the consumer when purchased.

The following is a typical sequence of events taking place in a fairly large factory. The process begins with the original inception of the styles and ends with bulk production.

1. The product line manager plans the whole range to meet market requirements.
2. The designer produces experimental design to fit the product line manager's plan.
3. The range developer produces the first set of pattern for each design and the factory cuts, closes and makes experimental samples ½ pair.
4. The Factory represented by the cutting fore man, closing foreman, Making foreman, work study head & services head, analysis the experimental samples, paying special attention to costs.
5. The service head together with the factory manager, review the range this far for acceptance or rejection.
6. The product line manager releases the accepted styles for further development.
7. The Factory development team is raised and briefed.

8. After pattern etc have been amended as necessary, production sample (one pair) model size are produced, these may be used for fit tests.

9. A developments meeting is held to review the situation & agree further action
10. Pathfinder test are produced (3 Pairs) different sizes & should be fit tested Specification sheet are drowned.
11. Second development meeting.
12. Patterns are bulk graded and bulk equipment is ordered I.E press knives, dies, buckles etc.
13. A bulk test for each style.
14. The range is finally reviewed post development meeting

3.3 PATTERN CUTTING (LADIES COURT SHOE)

Pattern Cutting:

Pattern cutting is the foundation of all subsequent shoe-masking operations. It is essential, therefore that all patterns should be 100% accurate. Any inaccuracy at this stage can cause problems in all the departments of the factory. The normal sequence is:

Forme cutting. Standard masking.
Net patterns. Working patterns.
Lining patterns Toe puff & stiffener patterns.
Bottom patterns.

Forme Cutting:

A forme is a flat representation of the top surface area of the last. There are various methods of producing forms. Here discussed the type method:

STEP 1: Take a model size last (38 in French point for ladies court shoe) and an adhesive tape (width: 1 ").

STEP 2: Mask the last using adhesive tape. Overlap at last half of the tape and make sure to avoid wrinkles while masking the last.

STEP 3: Trim away excess tape on the bottom of the last.

STEP 4: Cut a centerline in front from centre of toe along a straight line to the centre of the cone at its very top.

STEP 5: Cut in a back centerline from exact centre on back starting from the top ofthelast.

STEP 6: Find the trade point of the last and join the trade points on the last using a tape. The intersection of the centerline is masked as the vamp point.

Mask the back height point of the last referring the tables

Back height for normal shoe	
French Size	Back height (cm)
35	5.3
36	5.4
37	5.5
38	5.6

STEP 7: Remove the tape from the outside and paste it in a pattern sheet and cut the outline. This is outer standard.

STEP 8: Place the outer standard on the reverse direction on a pattern and draw the outline and mark vamp point and back height point.

STEP 9: Now remove the inner side tape and paste it on the earlier drawn top outline by matching the vamp point and back height. Cut the outline to get inside standard.

STEP 10: Draw the outer standard on pattern sheet and trace the inner standard on the outer standard by matching at the Vamp point (V.P) and back height. - A mean forme of the last is thus obtained.

Standard Masking:

The standard is the master pattern or blue print from which the upper and lining patterns are cut. It also shows the shoe style and design and gives a break down of the upper construction.

STEP 1: Trace the mean forme on a pattern sheet, marking all points, i.e. vamp point (V), tread point (T), back height (B) and mid point of `VT' (A).

STEP 2: From `A' draw a straight line to `B' thus joining `A' and `B'. From `V' draw a straight line touching the height point in the toe region and extend this line.

STEP 3: From `V' draw a smooth curve to sketch the throat of a court shoe and join it to `b'. The throat curve is normally 2/3 mm higher at the inside than the outside.

STEP 4: Add lasting allowance:
A) Toe to tread line -15mm.
B) Waist - 18mm.
C) Heel - 16mm.

STEP 5: At `B' reduce the curvature by 2mm to get B. this is done to give tight top line. From `V' drop a perpendicular to get 'VTI'. The centre of the points `T' and `T1' will beCut the outline to get court shoe upper shell

Derivation of Upper Components

STEP 1: On a folded pattern sheet match point `V' at the folded edge keeping point `B1' 5mm below and trace from `V' to `B' and then `B' to `W . Also trace the waist outside line.

STEP 2: Pivot at `V' brings down `F' to the folded edge and trace the line from `F' to `W'. Also trace fore part inside line. Smoothen the line & cut the outline. **STEP 3:** Cut the centre notch and inside notch to get a net vamp pattern **STEP 4:** Trace the net vamp pattern and add allowance as shown_

Court Shoe Lining Standard,

STEP 1: Trace the court shoe upper shell and make the following reduction on the upper shell. From vamp point to toe 0mm to 2 mm Along the counter curve 2mm to 6mm Along the lasting line 6mm

STEP 2: To design heel grip measure 40mm on the top line and 60 mm on the Featheredge.

Derivation of Lining Components:

STEP 1: On a folded pattern sheet match point `V' at the folded edge keeping point `H1' 5mm below and trace from `V' to `H1' and then `Hi' to `W'. Also trace the waist outside line.

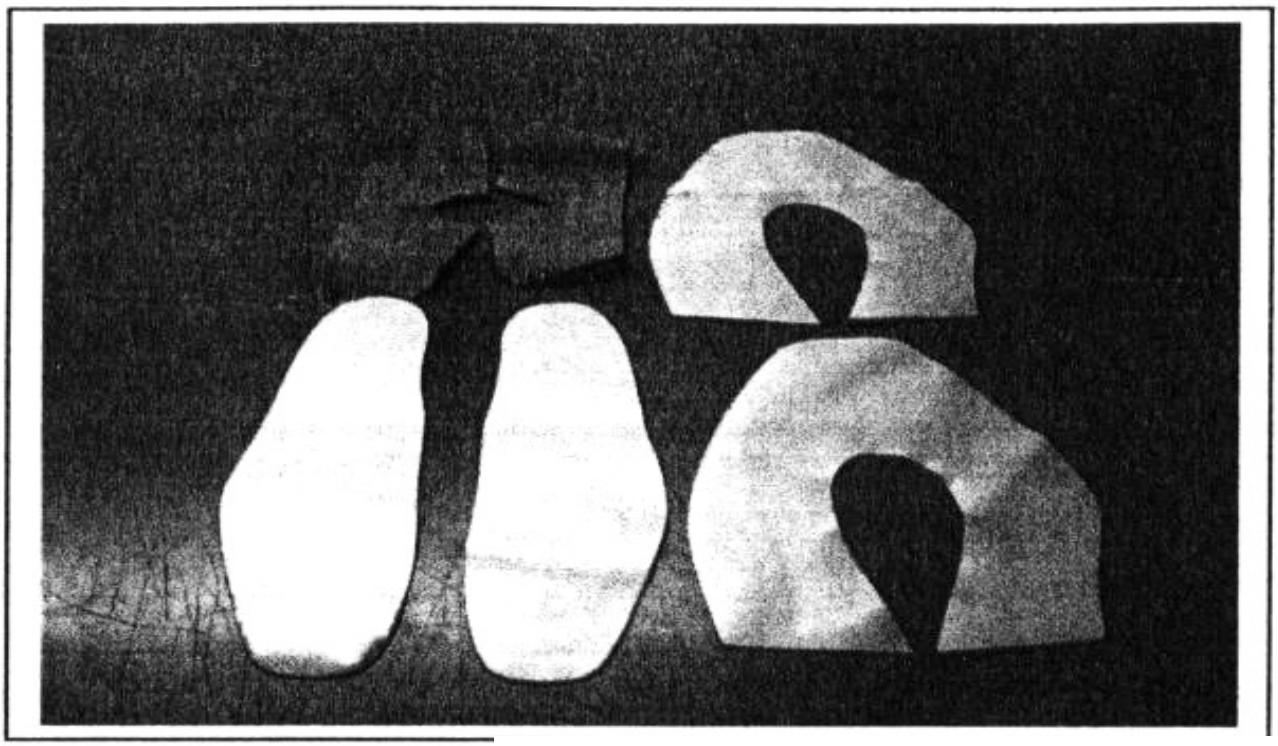
STEP 2: Pivot at `V' brings down `F' to the folded edge and trace the line from `F' to `W'. Also trace fore part inside line. Smoothen the line & cut the outline.

STEP 3: Trace the net vamp lining and add 4mm trimming allowance at the top line. Cut the out line to get a vamp-lining pattern

STEP 4: On a folded pattern sheet match the heel grip mirroring line and trace the heel grip.

STEP 5: Add 10 mm underlay allowance. Also add 4mm trimming allowance to the top line.

 Cut the stencil masks on the underlay line and centre notch to get heel grip pattern.



Picture: I

Picture: Upper Components

Picture: Court Shoe Pattern.

3.4 SEQUENCE OF OPERATIONS FOR UPPER CLOSING:

1. Stitch Making
2. Edge Coloring.
3. Skiving Upper & Lining
4. Back part of upper Stitching, Seam Rubbing, Then Taping.
5. Heel Grip & Vamp Lining Attaching & Stitching.
6. Lining fitting with upper.
7. Topline Stitching & then Folding.
8. Cleaning & Thread Burning.
9. Final Inspection.

3.5 OPERATION SEQUENCE OF FLAT LASTING:

1. Insole Attaching.
2. Stiffener Inserting
3. Back part Mouldin
4. Toe Puff Inserting
5. Upper Conditioning
6. Toe Lasting.
7. Seat & Side Lasting.
8. Heat Setting.
9. Roughing.
10. Remove Insole Tack.
11. Shank Attaching.
12. Bottom Filling.
13. Bottom Cementing.
14. Sole Cementing.
15. Dry Cementing.
16. Heat Reactivation.
17. Sole Attaching.
18. Heel Attaching.
19. Remove Last.
20. Heel Nailing.

3.6 SEQUENCE OF FINISHING OPERATION:

Heel Paring:

Cleanly pared from heel corner to heel corner.

Heel Scour:

This ensures that the heel lines up accurately with the waist of the sole.

Ink Edges:

A water based edge finish containing pigment, waxes and gums is applied by the hand to the sole edge. The edge must be completely and evenly covered with ink.

Bottom Polish:

Finish is applied by brush, allowed to dry and then wax polished on a revolving linen mop and soft hair brushes.

Heel Burnish:

A block of finishing wax is applied with camel hair brush.

Clean uppers and welts:

Surface dust is removed from upper by brushing on a rotating soft brush. A tapered stiff bristle brush is used to remove dust & wax from the welt & sole edge.

Treeing Department (Shoe room)

Sequence for Grain leather uppers:

1. Insert socks.

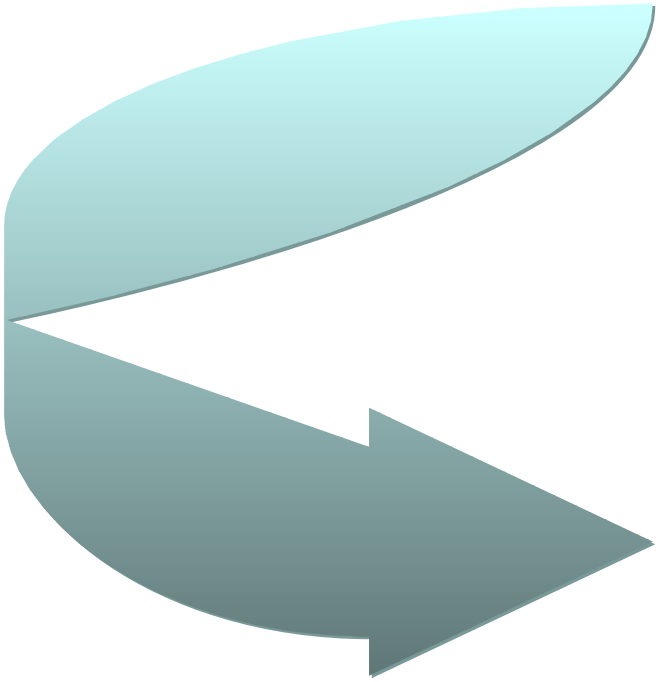
2. Dressing.

3. Sole Branding.

4. Final Inspection.

5. Packing.

6. Labeling.



4.1 SPECIFICATION OF LADIES COURT SHOE:

Upper material specification:

Origin	Material	Thickness	Tanning	Finish	Grain	Clr
Cow	Leather	1.2	Chrome	Nappa		Violet

Lining material specification:

Origin	Material	Thickness	Tanning	Finish	Color
Goat	Leather	0.8	Chrome	Nappa	Ivory

Specification for closing department:

Position	Thread				
	Mate.	Color	Tkt no.	Twist	Ply
Top	Nylon	Violet	60	Z	3
Bottom	Nylon	white	40	Z	3

Stitch parameter				Stitch type
St.Length	Dist.from edge	Dist.from the 1st st.	No. of rows	Lock st.
4st/cm	2mm.	2mm.	2	

Needle specification:

Size	System	Point
90	134(f)	P

Skiving specification:

Depth	Width	Location
1/3 of the material thickness	10mm	Toe cap & Counter

Toe puff specification:

Toe Puff type	Mat. Type	Adhesive	Shape	Thickness
Thermoplastic	Non-woven	Neoprene		mm

Stiffener specification:

Stiffener type	Mat. Type	Adhesive	Shape	Thickness
Thermoplastic	Non-woven	Neoprene		mm

Sock specification:

Construction	Mate. Of sock	Origin	Finish	Thickness	Color	Attaching process
Full	Leather	Goat	Nappa	0.8mm	Ivory	Adhesive

Reinforcement specification:

Location	Type	Material	Width	Adhesive type	Color
Back seam	Knitted	Nylon	10mm	Self adhesion one side	Black
Top line	Woven	Nylon	2mm	Self adhesion one side	Black

Specification for Adhesive:

Operation	Type	Drying time
Folding	Latex/Rubber soln	5-10 min.
Temporary attachment	Latex/Rubber soln	5-10 min.

Lasting & sole attachment	PU.	10-15 min.

Insole & shank specification:

	Material	Mate. Type	Thickness	Color
Insole board	Fiber	Non-woven	3mm	Grey
Shank board	Cellular board	Non-woven	5mm	

	Material	Thickness	Attaching process
Shank	Steel	1.2mm	Adhesive

Sole specification:

Material type	Color	Thickness
Rubber	Black	5mm

Heel specification:

Material type	Length	Heel height	Curve	Color
TPR inserted L/R heel	7.2 cm.	2 cm.	Inside & outside edge	Black

Quality Specifications: -

1. Edge stitching not to be more than 1.5mm from the edge.
2. Double row stitching distance to be 2mm from the 1st row.
3. For back seam, stitch density to be 5-5.5 st/cm.

4. For lapped seam and topline stitching, stitch density to be 4-4.5 st/cm.
5. No missed stitches acceptable.
6. No thread tension acceptable.
7. No dirty upper acceptable.
8. Use minimum solution on upper.
9. Use rubber solution for lining fitting with upper.
10. No loose thread ends acceptable.

4.2 APPROXIMATE COSTING:

Size: 4

Sl.No	Materials	Color	Thickness	Req.Qty.	Unit	Unit Rate	Value
			Upper				
01 Leather	Stingray fish leather	Black	1.2mm	1.25	Sft	135	168.75
02 lining							
03	Thread 60/3	Black		3	M	0.9	.27
04	Nylon Tape						

			Outsole				
05	Rubber	Black	2.5mm	.3.5	Sft	40.00	28.00
06	PU Adhesive	N/A		20	.085Gm		3.40

			Finishing				
07	Primer	N/A		2	Gm	0.3	.60
08	Petrol			.3	Ltr	35	.70
09	Toluene			.007	Ltr	85	.60
10	Crepe Rubber			.0003	Kg	200	.06
11	Jute	White	N/A	.02	Kg	10	.20
			Packing				
12	Tissue Paper-1			1	Pc	.35	.35
13	Tissue Paper-2			2	Pc		
14	Silica Gel			1	Pair	.5	.5
15	Shoe Box			1	Pc	25	25
							206.47

Others	3.00
Wages	32.00

Overhead	35.00
Total	276.47
4% Process Loss	21.65
15% Profit	110.00
Including knife and Last	12+19
Total (**Tk.**)	439.12

4.3 VARIOUS TYPES OF PHYSICAL TEST:

UPPER

1. Looseness test:

The grain surface of the LR is pressed with a finger, tasking the leather on the palm of the other hand. If creases develop due to such pressing, the leather is considered as a loose one. The increase is also called breaks. Fine breaks indicate tightness and coarse breaks indicate looseness of the leather.

The leather is hanged in the folded condition and palm of the hand is smoothly moved on the grain surface of the folded area. If the tester feels a pleasant touch, the leather is considered one of good feel. It is very tester-to-tester.

2) The Grain Crankiness:

The leather is folded through 180 ° twice and then the developments of crack to the double folded edge are noticed. Good leather should not develop any crack either to the finish layer or to the leather surface.

3) The Colour Rub-fastness:

The finished side of the leather is rubbed with a white cloth covered to the first finger of the right hand. If the cloth becomes coloured due to such rubbing the leather is considered poor dry rub fastness. Then the cloth wet with water and the same process is continued, if the cloth becomes colored the leather is considered poor wet rub fastness.

4) Fiber Strength:

If the fiber strength of the leather is not high enough, the thread of the stitch will cut the fibers and the stitched leather pieces will be separated when will be application of force. To assess the fiber strength of the leather, pull the leather with two hands fill tearing it two or one centimeter.

SOLE LEATHER TESTING:

1) Moister Content:

To assess the moister content of the leather the customers hang the leather with his left hand and strike the leather on the grain side with his palm of the right hand force fully. If the sound is metallic, the leather is considered to have necessary moisture content. If the sound is deep enough to low frequency, the leather is considered high moisture content

2) Grain Crankiness:

To assess the property of he leather, the customers flex the leather of the grain side very quickly several times and observe the change. If crack develops the grain side, the Leather is considered, poor grain crankiness. Leather sole may become cracky for many reasons:

a) Due to improper washing after tanning.

b) Case hardening.

c) Very rapid drying at high temperature

d) Too low moisture content of the leather etc

3) Density Test:

The apparent density of sole leather should be 0.8 to 1.15 and for insole it is below 0.8. The customers generally guess about its apparent density.

4) Loose Oil Test:

During bending / flexing of the leather sole, no oil should come out from it. After the leather is flattened, the change of colour should be minimum.

TENSILE STRENGTH OF UPPER LEATHER METHOD:

The two ends of the leather specimen are fixed to the two jaws of the machine that are one above the other. One jaw is fixed and other jaw is movable. When run the machine, the movable jaw is move away from the fixed jaw and the sample is stretched. The load required for stretching the specimen is recorded from the dial of the machine.

SATRA Sole Adhesion Test

Inserted a suitable last into the specimen footwear. Secure the whole footwear with the last in the machine and set the machine that force-measuring indicator is reading zero.

4.4 REMEDY

Picture 1: We can solve this problem by proper seat & side lasting. **Picture2:** Back part should be adjusted carefully.

Picture3: This problem can be solved by proper sole and upper preparation.

Picture4: Material selection should be according to the tight & stretchy direction. No loose leather is acceptable in the top line portion. Lasting and heat setting must be done properly to solve this problem.

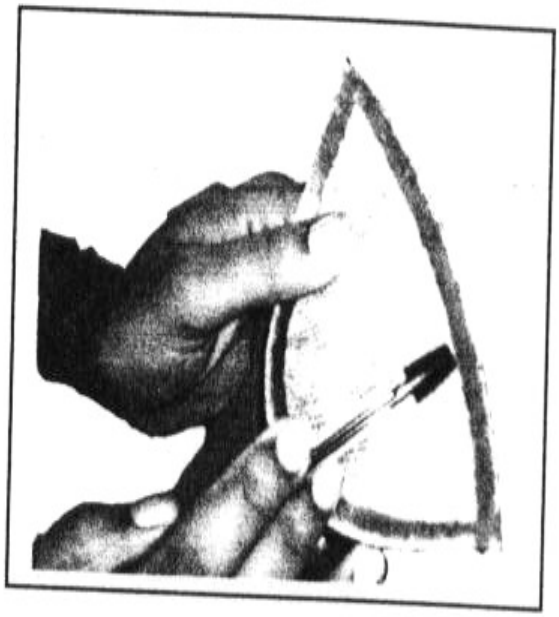
Pictures: Skiving width & thickness should be proper to solve this problem.

Picture6: Toe puff skiving must be zero at edge; otherwise impression will develop on the toe cap of the shoe.

Picture7: Properly set the thread tension before stitching

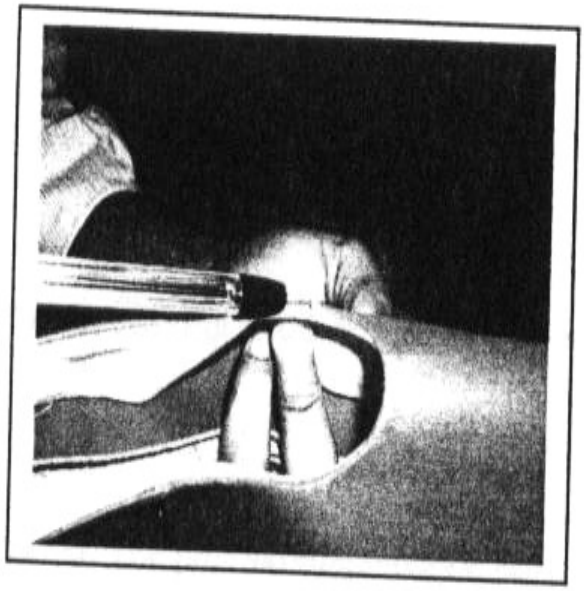
Picture8: Folding should be done carefully & according to the margin.

Picture 5: Upper is Cracked Due to Skiving.

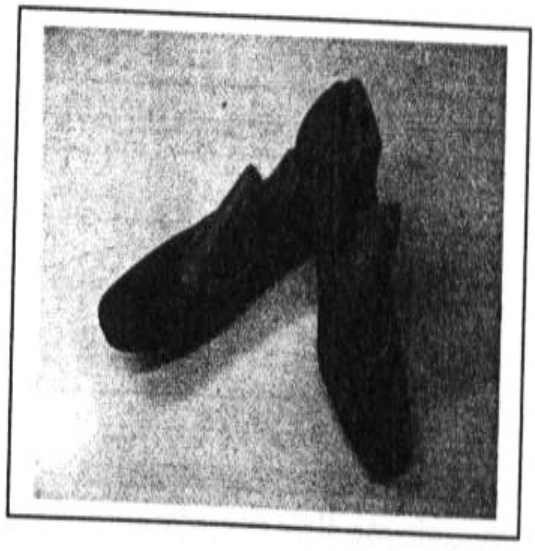


Picture 6: Improper Skiving Thickness.

ture 1: V



Picture 7: Loose Stitches.



Picture 8: Improper Folding.

4.5EXAMPLE OF CLICKING FAULT AND THEIR EFFECT

Heels: Coming Loose, Damaged &Cracking

Heels breaking & coming off in wears are serious failures because they often result in

Fault	Department Affected	Effect of subsequent Department
Shortages of cut component	**Closing**	**Delay when extra components are cut**
Incomplete top line	**Closing**	**Top line binding wavy**
Ragged edges on quarter back curve	**Closing**	**On closed seams the back seam will be wavy as a guide is followed on a chain stitches**
Not cut tight to toe	**Lasting**	**Too much stretch on upper when back forming and forepart lasting**
Flay cuts	**Lasting**	**Vamp tears during forepart lasting.**
Unequal number of left and right vamps	**Shoe Room**	**Shoes cannot be paired up at final inspection**
Thin and thick quarter in same dozen	**Lasting**	**Thin quarter stretch more by drafting pulls**

faults & serious Injuries.

The main causes are:

1. Poor heel design
2. In adequate attachment
3. Executive wear

Failures of Internal components

The main causes of failures of internal components are:

1. Poor quality Material
2. Poor Manufacturing
3. Misuse in wear

Upper: Surface Damage & loose of Finish

Many types of damage can be caused to surface of an upper during wear. Sometimes is due to faulty materials but mainly it is caused by:

1. Abrasion due to scuffing & mechanical damage.
2. Poor adhesion or coating.

Distortion & loss of shape

The main causes are:

1. Inferior materials or components.
2. Manufacturing faults.
3. Poor feet.
4. Misuse in wear.

Fault Analysis of operation in lasting & finishing room

1. Counter Insertion & Back part moulding

Fault: Wrinkle on the heel grip & lining.

Cause: Wrong component fitted & wrinkle not cleared before moulding.

Remedy: Use right size component & clear lining & heel grip from creases Before moulding.

Fault: Creased upper.

Cause: Too much gap between upper & heel grip & inadequate downward pull.

Remedy: Check upper closing & increase downward pull of the pincers.

Fault: Uneven lasting margin

Cause: Operator is not following back height mark given on the cold mould & Upper is not evenly fed.

Remedy: Follow the back height mark given on the cold mould & feed the upper Evenly into the pincer of the machine.

2. Insole Attaching:

Fault: Insole placed too far forward or too far backward.

Cause: Placement was wrong while attaching or insole slipped during attaching.

Remedy: Position the insole firmly while attaching.

Fault: Tacks are not deep enough or excessive penetration of tacks.

Cause: In sufficient or very high air pressure

Remedy: Optimize air pressure & Train operator

3. Toe conditioning & Toe lasting:

Fault: Difficult to feed upper into pincers jaw.

Cause: Insole rest set too high, small size upper used or pincers arranged not followed last.

Remedy: Lower insole rest or rearrange pincer.

Fault: Poorly defined feather edge

Cause: Insufficient wiping pressure, incorrect toe puff activation or wrong plate fitted.

Remedy: Increase wiping pressure of the machine, condition or activate toe puff properly

& wipe plate must match the last toe profile

Fault: Upper torn

Cause: Excessive upward movement of the insole rest or excessive pincer pull

Remedy: Reduce upward movement of the insole rest & optimize pincer pull pressure.

4. **Heel seat & side lasting:**

Fault: Upper damaged of the heel seat area

Cause: Seat post set too low or toe pad setting incorrect.

Remedy: Readjusting seat post & toe pad position

Fault: Seat & side are not flat & even
Cause: Seat & side pad setting is not correct & low seat & side finger pressure

Remedy: Raise seat & side pad to correct height & optimize finger pressure

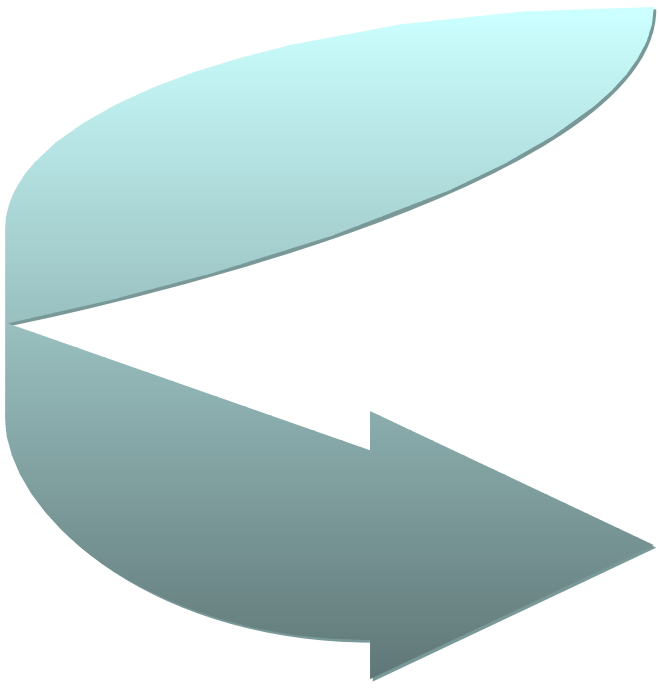
5. Heat setting:

Fault: Loss of shape of the shoe

Cause: Improper heat setting temperature or inadequate time set the heat setting m/c

Remedy: Set time in relation to the material & temperature used.

CHAPTER 5



5.1 CONCLUSION

I worked very hard to make my shoe. But I am not fully satisfied for my work and result. Because, the sole and leather was not such a condition to construct a court shoe. My object is to make the fashionable **Ladies Court Shoe using stingray fish leather** but I have found many problems with the supplied leather .The leather was very thick and hard which does not fulfill proper quality of shoe upper. Despite this the project work helps me to enhance my knowledge about court shoe and other shoes. I have learnt many new terms, which will help me to do more in my future,

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