

CHAPTER - V

5.1 CONCLUSIONS

The three warp sets viz; set No.01, set No.02 and set No.03 which were initially warped had very high incidence of undrafted places and slubs.

The breakages in winding were very low with a winding tension of 7 g. Consequently the breakages in warping were very high.

The weavers beams produced from this set did not perform well in the weaving shed. Breakages in warp due to weak yarn were excessive and this caused the down time for interference to go up and subsequently the efficiency to go down. This is clearly shown in the breakages studies shown in Appendix iv.

The quality of yarn used for the subsequent sets were found to be satisfactory and the single yarn strength was in the range 189.0 g - 202.0 g.

Subsequently, performance of thirteen sets were studied in cone winding, warping and sizing and in the loom shed. Six sized beams from each set were gaited to six selected looms viz; Loom Nos. 1107, 1108, 1109, 1207, 1208 and 1209. These looms were operated by a single weaver. The stoppages studies of these looms were taken on a daily basis and the readings taken were averaged and shown in the tables with corresponding set numbers. (See appendix 2,3,4).

The beams were gaited to looms with shuttle changing motion and six shuttles were utilized in the shuttle magazine. The looms were tuned and operated at 180 picks per minute.

Using these studies, a graph representing winding breakages/100 bobbins versus warping efficiency was drawn.

The three points A1, A2 and A3 correspond to the first three sets of winding. The tension weight used in winding for these three sets was 7.0 g. The winding breakages were comparatively less under these conditions, but the warping efficiencies were very low, as can be seen from the graph.

Cones for the remaining warp sets were prepared using a higher tension weight (13.0 g.).

This resulted in an increase in the winding breakages due to more weak places in the yarn being removed during cone winding and in an increase in warping efficiency. As expected with the improved yarn quality an increase in warping and weaving efficiencies were shown.

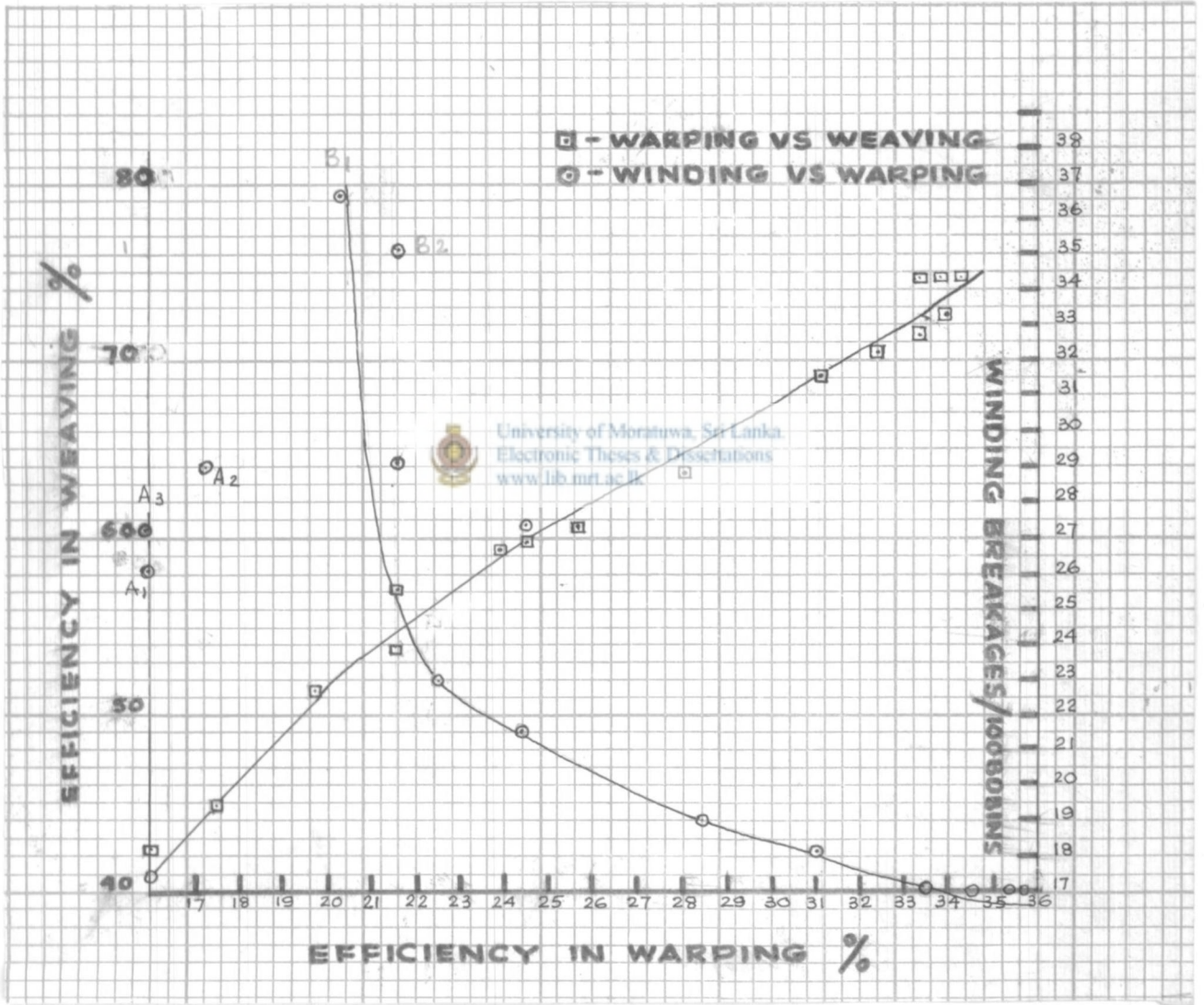
A graph representing size percentage versus percentage increase in efficiency in weaving over the efficiency at a size percentage of six was also drawn.

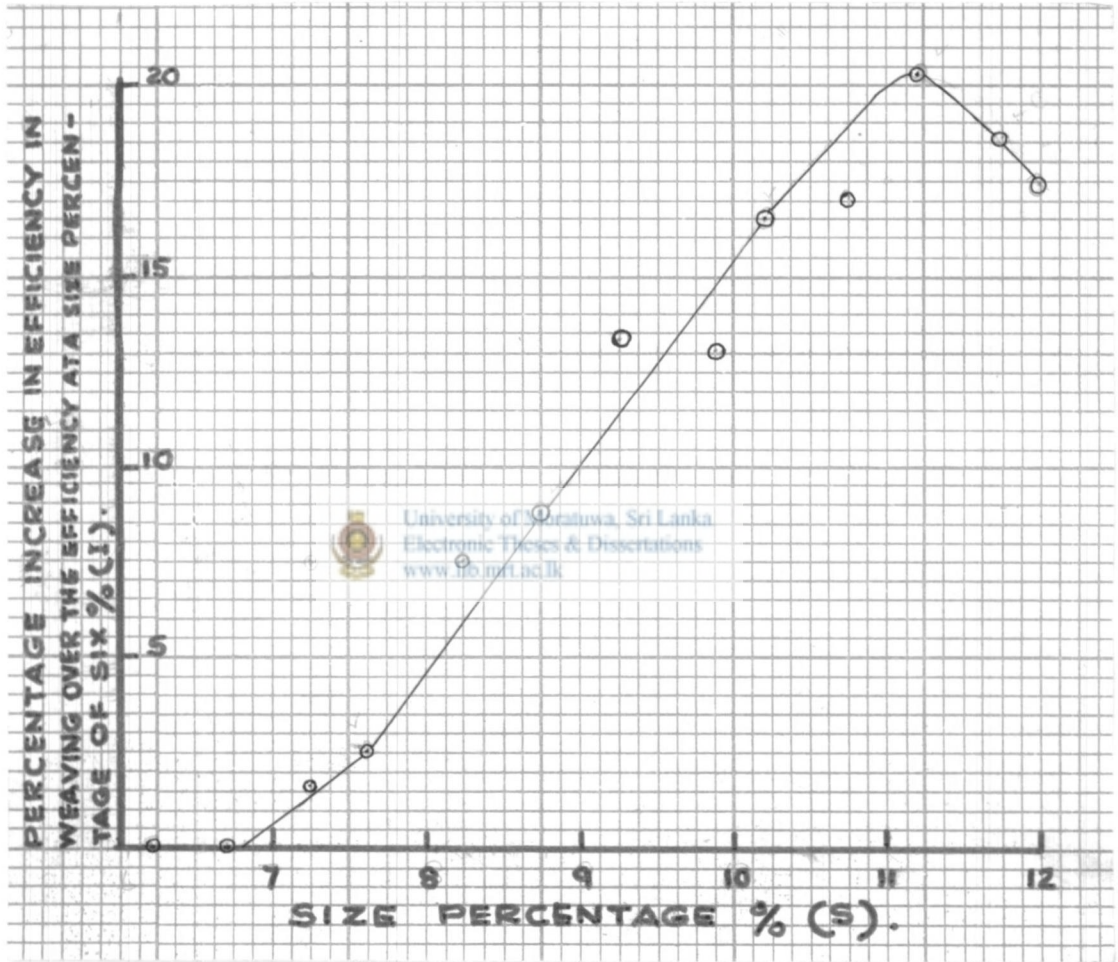
$$I = \frac{E_S - E_6}{E_6} \times 100$$

E_S = Average efficiency of beams with a size percentage S

E_6 = Average efficiency of beams with a size percentage of 6

I = Percentage increase in efficiency over the efficiency at a size percentage of 6.





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The following conclusions could be drawn from the results of this project.

- (1) The winding tension weight more suitable for the polynosic yarns of 45s count is 13 g.
- (2) When the breakages in winding per hundred bobbins drop below 22, a sharp increase in warping and satisfactory efficiency in weaving is shown.
- (3) To obtain an increase in efficiency over 78% in weaving with this yarn, the shuttle changing mechanism should be activated without any transfer failures.

This requires proper training of mechanics etc., and constant systematic monitoring and checking of the relevant motions and parts
- (4) The most suitable size percentage for this construction is around 11.2.

SET NOS.		1	2	3	4	5	6	7	8	9
BOBBINS	Single yarn strength	166.2	166.5	169.4	168.3	170.1	178.1	169.4	179.3	180.1
	CV of single yarn strength	10.6	11.0	11.0	10.4	11.2	11.2	10.3	9.8	9.7
	Elongation %	6.2	5.0	6.1	6.7	6.2	6.3	6.6	6.1	6.2
CONES	Single yarn strength	166.4	164.2	168.7	169.1	171.3	179.1	191.1	180.1	185.1
	CV of single yarn strength	10.9	12.1	10.1	10.2	11.0	9.2	9.5	9.5	9.2
	Elongation %	6.2	5.1	5.8	6.3	6.1	5.8	5.6	6.0	5.8

SET NOS.		10	11	12	13	14	15	16	17	18
BOBBINS	Single yarn strength	184.6	188.0	189.3	192.4	196.3	198.4	198.4	199.1	198.5
	CV of single yarn strength	9.6	9.6	9.6	9.8	9.8	9.4	9.6	9.7	9.8
	Elongation %	6.1	6.2	6.0	5.9	6.2	5.9	5.8	6.0	6.1
CONES	Single yarn strength	188.4	190.3	192.3	195.3	198.3	201.3	202.1	201.8	201.6
	CV of single yarn strength	9.3	9.1	9.3	9.2	6.1	9.2	9.4	9.1	9.3
	Elongation %	6.1	5.8	5.6	5.8	5.9	6.0	5.7	5.9	6.1

(i)

BREAKAGES IN WINDING

FOR 100 BOBBINS CHANGES

SET NUMBERS 01 - 06

Cause	Winding	Winding	Winding	Winding	Winding	Winding
	Set No.	Set No.	Set No.	Set No.	Set No.	Set No.
	01	02	03	04	05	06
1 Improper Piecing	05	04	04	-	06	04
2 Undrafted yarn/slub	04	06	06	06	03	05
3 Thick Place	02	01		03	01	01
4 Bad starting	01	-	01	01	02	
5 Cotton Fly	01	03	04	03	05	08
6 Weak Yarn	13	14	12	24	19	12
7 Damaged Bobbin	-	-	-	-	-	-
8 Impurities	-	-	-	01		
9 Others	-	01	-	02	01	
TOTAL	26	29	27	40	37	30
End Breaks/ 100 Bobbins	26	29	27	40	37	30
Slub catcher out of gauge	Nil	Nil	Nil	Nil	Nil	Nil
Tension Weight	7g.	7g.	7g.	13g.	13g.	13g.

(ii)

BREAKAGES IN WINDINGFOR 100 BOBBIN CHANGESSET NUMBERS 07 - 12

Cause	Winding Set No. 07	Winding Set No. 08	Winding Wet No. 09	Winding Set No. 10	Winding Set No. 11	Winding Set No. 12
1 Cotton Fly	03	05	02	05	02	03
2 Improper piecing	-	03	02	03	04	01
3 Undrafted yarn	06	04	03	02	02	04
4 Thick Place	-	-	-	01	01	01
5 Bad starter			02	-	01	-
6 Entangled Yarn	01	-	01	-	-	-
7 Impurities	02	04	02	01	-	01
8 Weak Yarn	15	07	09	06	07	05
9 Damaged Bobbin	-	-	-	-	-	01
10 Others	-	-	-	01	01	01
End Breaks/ 100 Bobbins	27	23	21	19	18	17
Slub Catcher out of Gauge	Nil	Nil	1/25	Nil	Nil	Nil
Tension Weight	13g.	13g.	13g.	13g.	13g.	13g.



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BREAKAGES IN WINDINGFOR 100 BOBBIN CHANGESSET NUMBERS 13 - 18

Cause	Winding	Winding	Winding	Winding	Winding	Winding
	Set No.	Set No.	Set No.	Set No.	Set No.	Set No.
	13	14	15	16	17	18
1 Cotton Fly	04	07	03	04	03	04
2 Undrafted Yarn	04	-	04	02	04	02
3 Thick Place	-	-	-	01	-	01
4 Bad starter	-	-	-	01	-	-
5 Entangled Yarn	-	01	01	-	02	-
6 Impurities	01	02	-	01	-	01
7 Weak Yarn	05	07	06	08	06	07
8 Damaged Bobbin	-	-	-	-	-	-
9 Improper Piecing	03	-	03	-	02	01
10 Others	-	-	-	-	-	02
End Breaks/ 100 Bobbins	17	17	17	17	17	18
Slub Catcher out of gauge	Nil	Nil	Nil	Nil	Nil	Nil
Tension Weight	13g.	13g.	13g.	13g.	13g.	13g.



(i)

ONE HOUR STUDIESBREAKAGES IN WARPINGSET NUMBERS 1 - 5464 ENDS

Cause	Warp Set No.1	Warp Set No.02	Warp Set No.03	Warp Set No.04	Warp Set No.05
01 Cotton Fly	06	06	08	06	05
02 Undrafted yarn/slub	07	04	06	04	06
03 Snarls	-	-	-	-	-
04 Transfer Failures	-	-	-	03	06
05 Entangled in Cone	02	03	04	05	01
06 Sloughing off	01	-	-	-	-
07 Impurities	-	02	01	01	02
08 Weak Yarn	33	29	30	15	14
09 Damaged Cones	-	-	01	01	-
10 Long Tail/ Back Winding	-	-	-	-	03
11 Loose Knots	03	02	-	05	04
12 Hand Waste	-	-	-	01	-
13 Others	01	-	02	-	-
TOTAL	53	46	52	41	41
Mean End Breaks/ 1000M/400 Ends	16.49	12.76	15.51	10.14	9.9
Total Metres	2770	3106	2889	3484	3893
Efficiency %	16.07	17.25	16.05	19.35	21.06

Winding Tension Weight 7 g.

Warping Tension Weight 1.5g/2.0g.

(ii)

ONE HOUR STUDIESBREAKAGES IN WARPINGSET NUMBERS 6 - 10464 ENDS

Cause	Warp Set No.06	Warp Set No.07	Warp Set No.08	Warp Set No.09	Warp Set No.10
01 Cotton Fly	06	04	04	04	03
02 Undrafted yarn/slub	04	07	04	06	05
03 Snarls	-	-	-	-	-
04 Transfer Failures	07	04	11	05	02
05 Entangled in Cone	-	-	-	-	01
06 Sloughing off	01	-	-	-	01
07 Impurities	-	01	-	-	01
08 Weak Yarn	15	14	16	13	14
09 Damaged Cones	01	01	-	-	01
10 Long Tail/ Back Winding		01	-	-	-
11 Loose Knots	-	02	03	02	02
12 Hand Waste	01	-	-	-	-
13 Others	01	-	-	01	-
Total	36	34	38	31	30
Mean End Breaks/ 1000M/400 Ends	7.9	6.9	7.8	6.13	5.07
Total Metres	3893	4194	4158	4356	5094
Efficiency %	21.6	23.3	23.1	24.2	28.3

Winding Tension Weight - 13 g.

Warping Tension Weight - 1.5/2.0 g.

464 ENDS

Cause	Warp Set No.11	Warp Set No.12	Warp Set No.13	Warp Set No.14	Warp Set No.15
01 Cotton Fly	02	03	03	04	04
02 Undrafted yarn/slub	03	01	01	03	06
03 Snarls	-	-	-	-	01
04 Transfer Failures	07	09	09	04	05
05 Entangled in Cone	01	02	03	03	-
06 Sloughing off	-	-	03	-	-
07 Impurities	-	01	-	-	-
08 Weak Yarn	10	09	06	07	06
09 Damaged Cones	-	-	-	01	-
10 Long Tail/ Back Winding	02	01	03	01	01
11 Loose Knots	01	-	-	01	01
12 Hand Waste	-	01	-	01	-
13 Others	01	-	01	02	03
TOTAL	27	27	29	27	27
Mean End Breaks/ 1000M/400 Ends	4.17	3.84	4.07	3.46	3.55
Total Metres	5580	6048	6138	6391	6553
Efficiency %	31.0	33.6	34.1	35.5	36.4

Winding Tension Weight - 13 g.

Warping Tension Weight - 1.5g/2.0g.

(iv)

ONE HOUR STUDIESBREAKAGES IN WARPINGSET NUMBERS 16 - 18464 ENDS

Cause	Warp Set No.16	Warp Set No.17	Warp Set No.18	Warp Set No.	Warp Set No.
01 Cotton Fly	04	03	02		
02 Undrafted yarn/slub	04	04	04		
03 Snarls	-	01	01		
04 Transfer Failures	03	03	04		
05 Entangled in Cone	-	02	-		
06 Sloughing off	01	-	-		
07 Impurities	01	01	02		
08 Weak Yarn	05	06	05		
09 Damaged Cone	-	-	01		
10 Long Tail/ Back Winding	02	01	01		
11 Loose Knots	01	01	-		
12 Hand Waste	-	-	01		
13 Others	02	01	01		
TOTAL	23	23	22		
Mean End Breaks/ 1000M/400 Ends	3.00	3.06	2.91		
Total Metres	6606	6476	6516		
Efficiency %	36.7	35.9	36.2		

Winding Tension Weight - 13 g.

Warping Tension Weight - 1.5g/2.0g.



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A P P E N D I X - I V

(i)

LOOM WARP STOPPAGES ANALYTICAL CHART (SET NO. 01)

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
Improper Piecing/Slub			01		01	
Impurities		01				
Bad Knots (Long Tail)						
Slack Ends			02			
Missing Ends	01				01	01
Healed Wires Damaged						
Entangled Breaks		01				
Cotton Lumps					01	
Taped Yarn						
Cotton Fly on Surface		01				
Selvedged Breaks	02					02
Damaged Shuttles						
Damaged Reeds						
Brittle Breaks						
Loose Knots				01		
Weak/undersized yarn	03	02	04	02	05	03
Others	01					
Total Stoppages/Hour	07	05	07	03	08	06
Total Units/Hour	27	28	21	28	20	27
Stoppages /10 ⁴ Picks	12.96	8.9	16.6	5.3	20.0	11.0
Picks per minute	180	180	180	180	180	180
Efficiency %	50	52.0	39.0	52.0	37.0	50.0

Average Efficiency 46.6% (During Studies)

Average Efficiency 41.0% (Actual)

(ii)

LOOM WARP STOPPAGES ANALYTICAL CHART (SET NO.02)

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
Improper Piecing/Slub						
Impurities						
Bad Knots (Long Tail)						
Slack Ends	01					
Missing Ends						
Healed Wires Damaged						
Entangled Breaks				01		01
Cotton Lumps					01	
Taped Yarn						
Cotton Fly on Surface					02	
Selvedged Breaks						
Damaged Shuttles						
Damaged Reeds						
Brittle Breaks						
Loose Knots						
Weak/undersized yarn	03	04	02	03	02	03
Others						
Total Stoppages/Hour	04	04	02	04	05	04
Total Units/Hour	19	27	33	26	31	23
Stoppages/10 ⁴ Picks	10.5	7.7	3.0	7.8	8.0	8.7
Picks per minute	180	180	180	180	180	180
Efficiency %	35	50	61.1	48.1	57.4	42.6

Average Efficiency 49.0% (During Studies)

Average Efficiency 45.0% (Actual)

LOOM WARP STOPPAGES ANALYTICAL CHART (SET NO.03)

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
Improper Piecing/Slub						
Impurities						
Bad Knots(Long Tail)						
Slack Ends				01		
Missing Ends						
Healed Wires Damaged						
Entangled Breaks						
Cotton Lumps						
Taped Yarn						
Cotton Fly on Surface	01	02				01
Selvedged Breaks						
Damaged Shuttles					01	
Damaged Reeds						
Brittle Breaks	02	01				
Loose Knots						
Weak/Undersized yarn	02	03	03	02	01	05
Others						
Total Stoppages/Hour	05	06	03	03	02	06
Total Units/Hour	25	22	35	33	36	18
Stoppages/ 10^4 Picks	10.0	13.6	4.3	4.5	2.4	16.6
Picks per minute	180	180	180	180	180	180
Efficiency %	46.2	41.0	64.8	61.1	66.6	33.3

Average Efficiency 44.5% (During Studies)

Average Efficiency 43% (Actual)

(iv)

LOOM WARP STOPPAGES ANALYTICAL CHART (SET NO.04)

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
Improper Piecing/Slub	01		01			
Impurities				01		
Bad Knots (Long Tail)		01				01
Slack Ends						
Missing Ends	01					
Heald Wires Damaged						
Entangled Breaks	01		02		02	
Cotton Lumps		01			01	
Taped Yarn						
Cotton Fly on Surface		02				
Selvedged Breaks						
Damaged Shuttles						
Damaged Reeds						
Brittle Breaks						
Loose Knots						
Weak/undersized yarn	01	03	01	01	02	
Others						
Total Stoppages/Hour	04	07	04	02	05	01
Total Units/Hour	22	19	23	35	24	40
Stoppages/10 ⁴ Picks	9.0	26.4	8.7	3.8	19.4	1.8
Picks per minute	180	180	180	180	180	180
Efficiency %	40.7	35.1	42.6	64.8	44.4	74.1

Average Efficiency 53.0% (During Studies)

Average Efficiency 51% (Actual)

(v)

LOOM WARP STOPPAGES ANALYTICAL CHART (SET NO.05)

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
Improper Piecing/Slub				01		01
Impurities						
Bad Knots (Long Tail)	01	01		01	01	
Slack Ends			03			01
Missing Ends						01
Healed Wires Damaged						
Entangled Breaks		01				02
Cotton Lumps	02	01	01			
Taped Yarn						
Cotton Fly on Surface		01				
Selvedged Breaks						
Damaged Shuttles						
Damaged Reeds						
Brittle Breaks						
Loose Knots					01	
Weak/undersized yarn	02	02	02	03	02	03
Others						
Total Stoppages/Hour	05	06	06	05	04	08
Total Units/Hour	31	25	32	37	31	28
Stoppages/10 ⁴ Picks	8.0	12.0	9.3	6.75	6.45	14.28
Picks per minute	180	180	180	180	180	180
Efficiency %	57.4	46.2	59.2	68.5	57.4	51.8

Average Efficiency 56.7% (During Studies)

Average Efficiency 55% (Actual)

LOOM WARP STOPPAGES ANALYTICAL CHART (SET NO.06)

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
Improper Piecing/Slub						01
Impurities						
Bad Knots (Long Tail)	01			01		
Slack Ends	01					02
Missing Ends		01				02
Heald Wires Damaged				01		
Entangled Breaks						
Cotton Lumps			01	02		01
Taped Yarn						01
Cotton Fly on Surface	01	01		01		03
Selvedged Breaks						
Damaged Shuttles						
Damaged Reeds						
Brittle Breaks						
Loose Knots						01
Weak/undersized yarn		02	01	02		
Others	01				01	
Total Stoppages/Hour	04	04	02	07	01	11
Total Units/Hour	15	24	48	23	46	23
Stoppages/10 ⁴ Picks	12.5	8.3	2.08	14	1.08	23.9
Picks per minute	180	180	180	180	180	180
Efficiency %	29.6	44.4	88.8	42.5	85.1	42.5

Average Efficiency 55.4% (During Studies)

Average Efficiency 58.0% (Actual)

LOOM WARP STOPPAGES ANALYTICAL CHART (SET NO.07)

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
Improper Piecing/Slub						
Impurities						
Bad Knots (Long Tail)						
Slack Ends	02			01	02	01
Missing Ends						
Heald Wires Damaged						
Entangled Breaks			01			01
Cotton Lumps		01				
Taped Yarn						
Cotton Fly on Surface				01		
Selvedged Breaks		01				
Damaged Shuttles						
Damaged Reeds						
Brittle Breaks						
Loose Knots						
Weak/undersized yarn	02	03	01	02	03	03
Others						
Total Stoppages/Hour	04	05	02	04	05	05
Total Units/Hour	33	27	34	25	32	30
Stoppages/10 ⁴ Picks	6.06	9.25	2.94	8.0	7.8	8.3
Picks per Minute	180	180	180	180	180	180
Efficiency %	66	50	62.9	46.2	59.2	55.5

Average Efficiency 56.6% (During Studies)

Average Efficiency 60.0% (Actual)

LOOM WARP STOPPAGES ANALYTICAL CHART (SET NO.08)

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
Improper Piecing/Slub		01				
Impurities						
Bad Knots (Long Tail)			01		01	
Slack Ends		01				
Missing Ends			02			
Heald Wires Damaged						
Entangled Breaks			01			
Cotton Lumps					01	
Taped Yarn						
Cotton Fly on Surface		01				
Selvedged Breaks		01			01	
Damaged Shuttles					01	
Damaged Reeds						
Brittle Breaks						
Loose Knots	01		01			
Weak / Undersized yarn	01	01		02		01
Others	01					01
Total Stoppages/Hour	03	05	05	02	04	02
Total Units/Hour	32	36	28	34	30	33
Stoppages/10 ⁴ Picks	4.6	6.94	8.9	2.8	6.6	3.03
Picks per minute	180	180	180	180	180	180
Efficiency %	59.2	66.6	51.8	62.9	55.5	61.1

Average Efficiency 59.5% (During Studies)

Average Efficiency 59.0% (Actual)

LOOM WARP STOPPAGES ANALYTICAL CHART (SET NO.09)

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
Improper Piecing/Slub						
Impurities						
Bad Knots (Long Tail)						
Slack Ends						01
Missing Ends						
Heald Wires Damaged	01					
Entangled Breaks				01		01
Cotton Lumps						
Taped Yarn						
Cotton Fly on Surface						
Selvedged Breaks	01					
Damaged Shuttles						
Damaged Reeds						
Brittle Breaks						
Loose Knots			01			
Weak/Undersized yarn	01	05	01	04	01	03
Others						
Total Stoppages/Hour	03	05	02	05	01	05
Total Units/Hour	31	31	40	28	44	33
Stoppages/10 ⁴ Picks	4.8	8.06	2.5	8.9	1.1	7.5
Picks per minute	180	180	180	180	180	180
Efficiency	57.4	57.4	74.1	52.0	81.4	61.1

Average Efficiency 63.5% (During Studies)

Average Efficiency 60.0% (Actual)

(x)

LOOM WARP STOPPAGES ANALYTICAL CHART (SET NO.10)

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
Improper Piecing/Slub						
Impurities						
Bad Knots (Long Tail)		01				
Slack Ends						
Missing Ends						
Heald Wires Damaged	01					
Entangled Breaks		01		01		02
Cotton Lumps						
Taped Yarn				02		
Cotton Fly on Surface		01				
Selvedged Breaks		01				
Damaged Shuttles				01		02
Damaged Reeds				01		01
Brittle Breaks						
Loose Knots			01			
Weak/Undersized yarn	01	01	01		01	01
Others						
Total Stoppages/Hour	02	05	02	05	01	06
Total Units/Hour	31	31	40	28	44	37
Stoppages/10 ⁴ Picks	3.2	8.1	2.5	8.9	2.3	8.1
Picks per minute	180	180	180	180	180	180
Efficiency %	57.4	51.4	74.0	51.8	81.4	68.5

Average Efficiency 65.08% (During Studies)

Average Efficiency 65.0 % (Actual)

LOOM WARP STOPPAGES ANALYTICAL CHART (SET NO.11)

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
Improper Piecing/Slub						
Impurities						
Bad Knots (Long Tail)					01	
Slack Ends		01				01
Missing Ends						
Heald Wires Damaged						
Entangled Breaks		01		01		
Cotton Lumps						
Taped Yarn						
Cotton Fly on Surface	01	02	02			01
Selvedged Breaks				01		
Damaged Shuttles					03	
Damaged Reeds						
Brittle Breaks						
Loose Knots						
Weak/Undersized yarn		01	03	02		02
Others						
Total Stoppages/Hour	01	05	05	04	04	04
Total Units/Hour	43	41	38	42	41	38
Stoppages/10 ⁴ Picks	1.1	6.6	6.3	4.7	4.8	5.2
Picks per minute	180	180	180	180	180	180
Efficiency %	79.6	75.9	70.3	77.7	75.8	70.3

Average Efficiency 74.9% (During Studies)

Average Efficiency 71.0% (Actual)

LOOM WARP STOPPAGES ANALYTICAL CHART (SET NO.12)

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
Improper Piecing/Slub						
Impurities						
Bad Knots (Long Tail)	01		01	01		
Slack Ends						
Missing Ends				01		
Heald Wires Damaged						
Entangled Breaks						
Cotton Lumps						
Taped Yarn						
Cotton Fly on Surface						01
Selvedged Breaks						
Damaged Shuttles						
Damaged Reeds						
Brittle Breaks						
Loose Knots	01					
Weak/Undersized yarn	01	01				01
Others				01		
Total Stoppages/Hour	03	01	02	02		02
Total Units/Hour	47	34	43	43	37	41
Stoppages/10 ⁴ Picks	3.2	1.5	2.3	2.3	-	2.4
Picks per minute	180	180	180	180	180	180
Efficiency %	87.0	62.9	79.6	79.6	68.5	75.9

Average Efficiency 75.6% (During Studies)

Average Efficiency 74.0% (Actual)

LOOM HAMP STOPPAGES ANALYTICAL CHART (SLT NO.13)

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
Improper Piecing/Slub						
Impurities						01
Bad Knots (Long Tail)						
Slack Ends		01				01
Missing Ends			02			
Heald Wires Damaged						
Entangled Breaks	02	02		02		
Cotton Lumps			01		01	
Taped Yarn						
Cotton Fly on surface		01				
Selvedged Breaks			01	01		
Damaged Shuttlers			01		01	
Damaged Reeds						
Brittle Breaks		02				
Loose Knots				01		
Weak/Undersized yarn			01		01	01
Others						
Total Stoppages/hour	02	06	06	04	03	03
Total Units/hour	37	37	42	42	45	42
Stoppages/10 ⁴ Picks	2.7	8.1	7.1	4.8	3.3	3.8
Picks per minute	180	180	180	180	180	180
Efficiency %	68.5	68.5	77.7	77.7	83.3	77.7

Average Efficiency 75.5% (During Studies)

Average Efficiency 75.0% (Actual)

LOOM WARP STOPPAGES ANALYTICAL CHART (SET NO.14)

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
Improper Piecing/Slub						
Impurities					01	
Bad Knots (Long Tail)						01
Slack Ends		01				
Missing Ends						
Heald Wires Damaged						
Entangled Breaks		01		01		
Cotton Lumps						
Taped Yarn						01
Cotton Fly on Surface			02			
Selvedged Breaks						
Damaged Shuttles					01	
Damaged Reeds						
Brittle Breaks						
Loose Knots						
Weak/Undersized yarn	01	02	02	03	02	01
Others						
Total Stoppages/Hour	01	04	04	04	04	03
Total Units/Hour	43	41	40	42	41	40
Stoppages/10 ⁴ Picks	1.1	4.8	5.0	4.7	4.8	3.75
Picks per minute	180	180	180	180	180	180
Efficiency %	79.6	75.9	74.0	77.7	75.9	74.0

Average Efficiency 76.1% (During Studies)

Average Efficiency 76.0% (Actual)

LOOM WARP STOPPAGES ANALYTICAL CHART (SET NO.15)

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
Improper Piecing/Slub						
Impurities						
Bad Knots (Long Tail)	01				01	
Slack Ends					01	
Missing Ends						
Heald Wires Damaged						
Entangled Breaks	01			01		
Cotton Lumps						
Taped Yarn						
Cotton Fly on Surface		01				
Selvedged Breaks						
Damaged Shuttles					01	
Damaged Reeds						
Brittle Breaks						
Loose Knots						
Weak/Undersized Yarn					01	01
Others	01	02				01
Total Stoppages/Hour	04	03		01	04	02
Total Units/Hour	39	43	48	44	32	45
Stoppages / 10^4 Picks	5.1	3.5	-	1.1		2.2
Picks per minute	180	180	180	180	180	180
Efficiency %	72.2	79.6	88.8	81.4	59.2	83.3

Average Efficiency 77.4% (During Studies)

Average Efficiency 77.0% (Actual)

LOOM WARP STOPPAGES ANALYTICAL CHART (SET NO.16)

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
Improper Piecing/Slub						
Impurities						
Bad Knots (Long Tail)						01
Slack Ends		01				
Missing Ends						
Heald Wires Damaged						
Entangled Breaks	01		01			
Cotton Lumps						
Taped Yarn						
Cotton Fly on Surface						
Selvedged Breaks		01				
Damaged Shuttles		01				01
Damaged Reeds						
Brittle Breaks						
Loose Knots						
Weak/Undersized yarn	01			01		
Others						
Total Stoppages/Hour	02	03	01	01		02
Total Units/Hour	42	39	46	37	49	45
Stoppages/10 ⁴ Picks	2.4	3.8	1.1	1.35	-	2.2
Picks per minute	180	180	180	180	180	180
Efficiency %	84.0	72.2	85.1	68.5	90.7	83.3

Average Efficiency 80.6% (During Studies)

Average Efficiency 78.0% (Actual)

LOOM WARP STOPPAGES ANALYTICAL CHART (SET NO.17)

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
Improper Piecing/Slub						
Impurities						
Bad Knots (Long Tail)		01				
Slack Ends			01			
Missing Ends						
Heald Wires Damaged						
Entangled Breaks				01		
Cotton Lumps			02		02	
Taped Yarn						
Cotton Fly on Surface						
Selvedged Breaks						
Damaged Shuttles			01			
Damaged Reeds						
Brittle Breaks				01		
Loose Knots						
Weak/Undersized yarn		01		01		
Others					01	
Total Stoppages/Hour		02	04	03	03	
Total Units/Hour	48	48	39	44	31	46
Stoppages/10 ⁴ Picks		2.1	5.1	3.8	4.8	
Picks per minute	180	180	180	180	180	180
Efficiency %	88.8	88.8	72.2	81.4	57.4	85.1

Average Efficiency 78.95% (During Studies)

Average Efficiency 79.0 % (Actual)

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LOOM WARP STOPPAGES ANALYTICAL CHART (SET NO.18)

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
Improper Piecing/Slub						
Impurities						
Bad Knots (Long Tail)	01					
Slack Ends						02
Missing Ends						
Heald Wires Damaged						
Entangled Breaks	01				01	
Cotton Lumps						
Taped Yarn						
Cotton Fly on Surface		01		02		
Selvedged Breaks						
Damaged Shuttles						
Damaged Needs						
Brittle Breaks						
Loose Knots		01				
Weak/Undersized yarn			01			01
Others			01			
Total Stoppages/Hour	03	01	02	02	01	03
Total Units/Hour	45	42	39	39	45	44
Stoppages/10 ⁴ Picks	3.3	1.19	2.56	2.56	1.1	3.4
Picks per minute	180	180	180	180	180	180
Efficiency %	83.3	77.7	72.2	72.2	83.3	81.4

Average Efficiency 78.3% (During Studies)

Average Efficiency 78.0% (Actual)

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
DAMAGED PIRN						
IMPROVED YARN WINDING AT THE START						
SLUBS					01	
COTTON FLY ON SURFACE					01	
ENTANGLED IN PIRN				01		
WEAK YARN	01					
IMPURITIES						
IMPROPER ALIGNMENT OF SHUTTLE PEG						
ROUGH SHUTTLE						
FORK FAILURE			01		01	
DEFECTIVE SHUTTLE EYE						
IRREGULAR SHUTTLE CHANGING	02	04	02	02	03	02
WAITING FOR SHUTTLE						
IMPROPER FEELER SETTING						
OVER SIZED PIRN						
OTHERS						
TOTAL STOPPAGES/HOUR	03	04	03	03	06	02
UNITS / HOUR	27	28	21	28	20	27
STOPPAGES / 10^4 PICKS	5.5	7.14	7.14	3.57	15.0	3.7
PICKS PER MINUTE	180	182	182	180	178	180

	TOTAL	AVG. STOPPAGES/LOOM/ 10^4 PICKS
WARP	36	13.04
WEFT	21	7.6
TOTAL	57	20.64

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
DAMAGED PIRN						
IMPROVED YARN WINDING AT THE START						
SLUBS						
COTTON FLY ON SURFACE						
ENTANGLED IN PIRN						
WEAK YARN					01	
IMPURITIES						
IMPROPER ALIGNMENT OF SHUTTLE PEG						
ROUGH SHUTTLE						
FORK FAILURE	01					02
DEFECTIVE SHUTTLE EYE						
IRREGULAR SHUTTLE CHANGING	03	03	02	02		01
WAITING FOR SHUTTLE				01	04	02
IMPROPER FEELER SETTING						
OVER SIZED PIRN						
OTHERS	01					
TOTAL STOPPAGES / HOUR	05	03	02	03	05	05
UNITS / HOUR	19	27	33	26	31	23
STOPPAGES / 10^4 PICKS	13.1	6.0	3.0	5.9	8.0	10.9
PICKS PER MINUTE	180	180	180	180	180	180

	TOTAL	AVG. STOPPAGES/LOOM/ 10^4 PICKS
WARP	23	7.23
WEFT	23	7.23
TOTAL	46	14.46

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
DAMAGED PIRN						
IMPROVED YARN WINDING AT THE START						01
SLUBS						
COTTON FLY ON SURFACE						01
ENTANGLED IN PIRN						
WEAK YARN			01	01		01
IMPURITIES					01	
IMPROPER ALIGNMENT OF SHUTTLE PEG						
ROUGH SHUTTLE						
FORK FAILURE	06				01	
DEFECTIVE SHUTTLE EYE						
IRREGULAR SHUTTLE CHANGING		02	02	02		02
WAITING FOR SHUTTLE	04	01	03	03	02	02
IMPROPER FEELER SETTING						
OVER SIZED PIRN						
OTHERS						
TOTAL STOPPAGES / HOUR	10	03	06	06	04	07
UNITS / HOUR	25	22	35	33	36	18
STOPPAGES / 10 ⁴ PICKS	20.0	6.8	8.6	9.1	5.6	19.4
PICKS PER MINUTE	180	180	180	180	180	180

	TOTAL	AVG. STOPPAGES/LOOM/10 ⁴ PICKS
WARP	25	7.39
WEFT	36	10.65
TOTAL	61	18.04

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
DAMAGED PIRN				01		
IMPROVED YARN WINDING AT THE START						
SLUBS						
COTTON FLY ON SURFACE	01					
ENTANGLED IN PIRN		02				
WEAK YARN						
IMPURITIES						
IMPROPER ALIGNMENT OF SHUTTLE PEG						
ROUGH SHUTTLE					01	01
FORK FAILURE			01			
DEFECTIVE SHUTTLE EYE						
IRREGULAR SHUTTLE CHANGING	02	03	01	04	03	02
WAITING FOR SHUTTLE	01	01	02		01	
IMPROPER FEELER SETTING					01	
OVER SIZED PIRN						
OTHERS						
TOTAL STOPPAGES/HOUR	04	06	04	05	06	03
UNITS / HOUR	22	19	23	35	24	40
STOPPAGES / 10^4 PICKS	9.09	15.7	8.69	7.14	12.5	3.7
PICKS PER MINUTE	180	180				

	TOTAL	AVG. STOPPAGES/LOOM/ 10^4 PICKS
WARP	23	7.05
WEFT	28	8.58
TOTAL	51	15.63

ONE HOUR STUDIESWEFT STOPPAGES—ANALYTICAL CHART SET NO.5

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
DAMAGED PIRN						
IMPROVED YARN WINDING AT THE START						
SLUBS		01				
COTTON FLY ON SURFACE						01
ENTANGLED IN PIRN						
WEAK YARN			01			
IMPURITIES						
IMPROPER ALIGNMENT OF SHUTTLE PIE						
ROUGH SHUTTLE						02
FORK FAILURE		01		01		
DEFECTIVE SHUTTLE EYE						
IRREGULAR SHUTTLE CHANGING	02	01	02	02	03	02
WAITING FOR SHUTTLE	01	01	01		02	01
IMPROPER FEELER SETTING						
OVER SIZED PIRN						
OTHERS				01		
TOTAL STOPPAGES/HOUR	03	04	04	04	05	06
UNITS / HOUR	31	25	32	37	31	28
STOPPAGES / 10^4 PICKS	4.8	8.0	6.25	5.4	8.06	10.7
PICKS P.R MINUTE	180	180	180	180	180	180

	TOTAL	AVG. STOPPAGES/LOOM/ 10^4 PICKS
WARP	34	9.20
WEFT	26	7.06
TOTAL	60	16.26

ONE HOUR STUDIESWEFT STOPPAGES-ANALYTICAL CHART SET NO.6

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
DAMAGE PIRN						
IMPROVED YARN WINDING AT THE START	02					
SLUDD						
COTTON FLY ON SURFACE						
ENTANGLED IN PIRN	01					
WEAK YARN				01		
IMPURITIES						
IMPROPER ALIGNMENT OF SHUTTLE PEG						
ROUGH SHUTTLE						
FORK FAILURE						
DEFECTIVE SHUTTLE EYE						
IRREGULAR SHUTTLE CHANGING	03	04	04	02	02	01
WAITING FOR SHUTTLE		01			02	
IMPROPER PEELER SETTING						
OVERSIZED PIRN						
OTHERS						
TOTAL STOPPAGES/HOUR	06	05	04	03	04	01
UNITS / HOUR	16	24	48	25	46	23
STOPPAGES / 10^4 PICKS	18.8	10.4	4.2	6.0	4.34	2.1
PICKS PER MINUTE	180	180	180	180	180	180

	TOTAL	AVG. STOPPAGES/LOOM/ 10^4 PICKS
WARP	29	7.9
WEFT	23	6.25
TOTAL	52	14.15

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
D. BEARDED PIRN					01	
IMPROVED YARN WINDING AT THE START						
SLUBS	01					
COTTON FLY ON SURFACE						
ENTANGLED IN PIRN				01		01
WEAK YARN		01	01			
IMPURITIES		01				
IMPROPER ALIGNMENT OF SHUTTLE PEG						
ROUGH SHUTTLE				01		
FORK FAILURE	01	01				
DEFECTIVE SHUTTLE EYE						
IRREGULAR SHUTTLE CHANGING	03	02	02	03	03	02
WAITING FOR SHUTTLE				01		
IMPROPER FEELER SETTING			01			
OVER SIZED PIRN						
OTHERS						
TOTAL STOPPAGES/HOUR	05	05	04	06	04	03
UNITS / HOUR	33	27	34	25	32	30
STOPPAGES / 10^4 PICKS	7.57	9.25	5.8	12.0	6.25	5.0
PICKS PER MINUTE	180	180	180	180	180	180

	TOTAL	AVG. STOPPAGES/LOOM/ 10^4 PICKS
WARP	27	7.4
WEFT	25	6.9
TOTAL	52	14.3

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
DAMAGED PIRN						
IMPROVED YARN WINDING AT THE START		01				
SLUBS	01					
COTTON FLY ON SURFACE						01
ENTANGLED IN PIRN						
WEAK YARN			01			
IMPURITIES						
IMPROPER ALIGNMENT OF SHUTTLE PEG						
ROUGH SHUTTLE	01					01
FORK FAILURE			01			
DEFECTIVE SHUTTLE EYE						
IRREGULAR SHUTTLE CHANGING	02	03	02	02	04	02
WAITING FOR SHUTTLE			02			
IMPROPER FEELER SETTING						
OVER SIZED PIRN						
OTHERS	01			01		
TOTAL STOPPAGES / HOUR	05	04	06	03	04	05
UNITS / HOUR	32	36	28	34	30	33
STOPPAGES / 10^4 PICKS	7.8	5.5	10.7	4.4	6.6	7.5
PICKS PER MINUTE	180	180	180	180	180	180

	TOTAL	AVG. STOPPAGES/LOOM/ 10^4 PICKS
WARP	21	5.41
WEFT	27	6.99
TOTAL	47	12.17

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
DAMAGED PIRN			01			
IMPROVED YARN WINDING AT THE START						
SLUBS						
COTTON FLY ON SURFACE						
ENTANGLED IN PIRN						
WEAK YARN		01				
IMPURITIES						
IMPROPER ALIGNMENT OF SHUTTLE PEG						
ROUGH SHUTTLE	01					
FORK FAILURE			02			03
DEFECTIVE SHUTTLE EYE						
IRREGULAR SHUTTLE CHANGING	02	02	03	03	02	02
WAITING FOR SHUTTLE		01		02	03	
IMPROPER FEELER SETTING						
OVER SIZED PIRN						
OTHERS						
TOTAL STOPPAGES / HOUR	03	04	06	05	05	05
UNITS / HOUR	31	31	40	28	44	33
STOPPAGES / 10 ⁴ PICKS	4.8	6.45	7.5	8.9	4.6	7.6
PICKS PER MINUTE	180	180	180	180	180	180

	TOTAL	AVG. STOPPAGES/LOOM/10 ⁴ PICKS
WARP	21	5.07
WEFT	28	6.76
TOTAL	49	11.83

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
DAMAGED PIRN						
IMPROVED YARN WINDING AT THE START						
SLUBS						
COTTON FLY ON SURFACE						
ENTANGLED IN PIRN		01				
WEAK YARN						
IMPURITIES				01		
IMPROPER ALIGNMENT OF SHUTTLE PEG						
ROUGH SHUTTLE	01					
FORK FAILURE			01			
DEFECTIVE SHUTTLE EYE						
IRREGULAR SHUTTLE CHANGING	02	02	03	03	02	02
WAITING FOR SHUTTLE		01		02	02	03
IMPROPER FEELER SETTING						
OV. R SIZED PIRN						
OTHERS						
TOTAL STOPPAGES/HOUR	03	04	04	06	04	05
UNITS / HOUR	31	31	40	28	44	37
STOPPAGES / 10^4 PICKS	4.8	6.4	5.0	6.7	4.5	6.7
PICKS PER MINUTE	180	180	180	180	180	180

	TOTAL	AVG. STOPPAGES/LOOM/ 10^4 PICKS
WARP	21	4.97
WEFT	26	6.16
TOTAL	47	11.13

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
DAMAGED PIRN						
IMPROVED YARN WINDING AT THE START						
SLUBS						
COTTON FLY ON SURFACE	01					
ENTANGLED IN PIRN				02		02
WEAK YARN	03				01	
IMPURITIES						
IMPROPER ALIGNMENT OF SHUTTLE PEG						
ROUGH SHUTTLE						
FORK FAILURE						
DEFECTIVE SHUTTLE EYE						
IRREGULAR SHUTTLE CHANGING		03	03	01	03	01
WAITING FOR SHUTTLE	02	01	01	01		02
ILPROPER FEELER SETTING						
OVER SIZED PIRN						
OTHERS						
TOTAL STOPPAGES/HOUR	06	04	04	04	04	05
UNITS / HOUR	43	41	38	42	41	38
STOPPAGES / 10^4 PICKS	6.9	4.8	5.2	4.7	4.0	6.6
PICKS PER MINUTE	180	180	180	180	180	180

	TOTAL	AVG. STOPPAGES/LOOM/ 10^4 PICKS
WARP	19	3.9
WEFT	27	5.5
TOTAL	46	9.4

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
DAMAGED PIRN						
IMPROVED YARN WINDING AT THE START						
SLUBS						
COTTON FLY ON SURFACE						
ENTANGLED IN PIRN						
WEAK YARN						
IMPURITIES						
IMPROPER ALIGNMENT OF SHUTTLE PEG						
ROUGH SHUTTLES						
FORK FAILURE			02			
DEFECTIVE SHUTTLE		02	05	02	04	04
IRREGULAR SHUTTLE CHANGING		01		01	01	
WAITING FOR SHUTTLE						
IMPROPER FEEDER SETTING						
OVER SIZED PIRN						
OTHERS						
TOTAL STOPPAGES / HOUR		03	07	03	05	04
UNITS / HOUR	47	34	43	43	37	41
STOPPAGES / 10^4 PICKS		4.4	8.1	3.5	6.8	4.9
PICKS PER MINUTE	180	180	180	180	180	180

	TOTAL	AVG. STOPPAGES/1000/ 10^4 PICKS
WARP	10	2.04
WEFT	22	4.48
TOTAL	32	6.53

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
DAMAGED PIRM						
IMPROVED YARN WINDING AT THE START						
SLUBS						
COTTON FLY ON SURFACE						
ENTANGLED IN PIRM						
WEAK YARN						
IMPURITIES						
IMPROPER ALIGNMENT OF SHUTTLE PEG						
ROUGH SHUTTLE						
FORK FAILURE						01
SELECTIVE SHUTTLE EYE						
IRREGULAR SHUTTLE CHANGING	04	03	01	02	03	02
WAITING FOR SHUTTLE			02	02	01	
IMPROPER FELLER SETTING						
OVER SIZED PIRM						
OTHERS						
TOTAL STOPPAGES / HOUR	04	03	03	04	04	03
UNITS / HOUR	37	37	42	42	45	42
STOPPAGES / 10 ⁴ PICKS	5.4		3.6	4.8	4.4	3.6
PICKS PER MINUTE	180	180	180	180	180	180

	TOTAL	AVG. STOPPAGES/LOOM/10 ⁴ PICKS
WARP	24	4.8
WEFT	21	4.2
TOTAL	42	9.0

ONE HOUR STUDIESWEFT STOPPAGES—ANALYTICAL CHART SET NO.14

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
DAMAGED PIRN						
IMPROVED YARN WINDING AT THE START						
SLUBS						
COTTON FLY ON SURFACE						
ENTANGLED IN PIRN						
WEAK YARN	03				01	
IMPURITIES						
IMPROPER ALIGNMENT OF SHUTTLE PEG						
ROUGH SHUTTLE						
FORK FAILURE						
DEFECTIVE SHUTTLE EYE						
IRREGULAR SHUTTLE CHANGING		03	02	01	02	02
WAITING FOR SHUTTLE	03	01	01	01	01	
IMPROPER FEELER SETTING						
OVER SIZED PIRN						
OTHERS						
TOTAL STOPPAGES / HOUR	06	04	03	02	04	02
UNITS / HOUR	43	41	40	42	41	40
STOPPAGES / 10 ⁴ PICKS	6.9	4.8	3.75	2.3	4.8	2.5
PICKS PER MINUTE	180	180	180	180	180	180

	TOTAL	AVG. STOPPAGES/LOOM/10 ⁴ PICKS
WARP	20	4.04
WEFT	21	4.25
TOTAL	41	8.29

ONE HOUR STUDIESWEFT STOPPAGES-ANALYTICAL CHART SET NO.15

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
DAMAGED PIRN						
IMPROVED YARN WINDING AT THE START						
SLUBS						
COTTON FLY ON SURFACE						
ENTANGLED IN PIRN					01	
WEAK YARN		02	01	01		01
IMPURITIES						
IMPROPER ALIGNMENT OF SHUTTLE PEG						
ROUGH SHUTTLE						
FORK FAILURE			01		03	
DEFECTIVE SHUTTLE EYE						
IRREGULAR SHUTTLE CHANGING	02	02	02	02	01	02
WAITING FOR SHUTTLE	02		01	02	01	02
IMPROPER PEELER SETTING		01				
OVER SIZED PIRN						
OTHERS						
TOTAL STOPPAGES/HOUR	04	05	05	05	06	05
UNITS / HOUR	39	43	48	44	32	45
STOPPAGES/ 10^4 PICKS	5.1	5.8	5.2	5.6	9.4	5.5
PICKS PER MINUTE	180	180	180	180	180	180

	TOTAL	AVG. STOPPAGES/LOOK/ 10^4 PICKS
WARP	14	2.78
WEFT	30	5.9
TOTAL	44	8.68

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
DAMAGED PIRN						
IMPROVED YARN WINDING AT THE START						
SLUBS						
COTTON FLY ON SURFACE						
UNWINDING ID IN PIRN						
WEAK YARN		02				
IMPURITIES						
IMPROPER ALIGNMENT OF SHUTTLE PEG						
ROUGH SHUTTLE						
FORK FAILURE				02		
DEFECTIVE SHUTTLE EYE						
IRREGULAR SHUTTLE CHANGING		02	03		04	04
WAITING FOR SHUTTLE			03	01		02
IMPROPER FEELER SETTING						
OVER SIZED PIRN						
OTHERS						
TOTAL STOPPAGES/HOUR		04	06	03	04	06
UNITS / HOUR	42	39	46	37	49	45
STOPPAGES / 10 ⁴ PICKS		5.1	6.5	4.0	4.1	6.6
PICKS PER MINUTE	180	180	180	180	180	180

	TOTAL	AVG. STOPPAGES/LOOM/10 ⁴ PICKS
WARP	0.9	1.72
WEFT	23	4.37
TOTAL	32	5.09

ONE HOUR STUDIESWEFT STOPPAGES-ANALYTICAL CHART SET NO.17

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
DAMAGED PIRN						
IMPROVED YARN WINDING AT THE START						01
SLUBS						
COTTON FLY ON SURFACE						
ENTANGLED IN PIRN						
WEAK YARN	01			01		01
IMPURITIES						
IMPROPER ALIGNMENT OF SHUTTLE PEG						
ROUGH SHUTTLE						
FORK FAILURE		01			04	01
DEFECTIVE SHUTTLE EYE						
IRREGULAR SHUTTLE CHANGING	05	04	03	02	01	02
WAITING FOR SHUTTLE	01			01		
IMPROPER FEELER SETTING					02	
OVER SIZED PIRN						01
OTHERS						
TOTAL STOPPAGES / HOUR	07	05	03	04	07	06
UNITS / HOUR	48	48	39	48	31	46
STOPPAGES / 10 ⁴ PICKS	8.3	5.2	3.8	4.1	11.3	6.5
PICKS PER MINUTE	180	180	180	180	180	180

	TOTAL	AVG. STOPPAGES/LOOM/10 ⁴ PICKS
WARP	12	2.3
WEFT	32	6.1
TOTAL	44	8.3

ONE HOUR STUDIESWEFT STOPPAGES-ANALYTICAL CHART SET NO.18

MACHINE NUMBER	1107	1108	1109	1207	1208	1209
DAMAGED PIRN						
IMPROVED YARN WINDING AT THE START						
SLUBS						
COTTON FLY ON SURFACE						
ENTANGLED IN PIRN						
WEAK YARN	01					
IMPURITIES				02		
IMPROPER ALIGNMENT OF SHUTTLE PEG						
ROUGH SHUTTLE						
FORK FAILURE		01	02			
DEFECTIVE SHUTTLE EYE						
IRREGULAR SHUTTLE CHANGING	02	03	02	01	03	02
WAITING FOR SHUTTLE	03				01	02
IMPROPER FEELER SETTING				01		
OVER SIZED PIRN						
OTHERS						
TOTAL STOPPAGES/HOUR	06	07	04	04	04	04
UNITS / HOUR	45	42	39	39	45	44
STOPPAGES / 10 ⁴ PICKS	6.6	9.5	10.3	10.3	8.8	9.09
PICKS PER MINUTE	180	180	180	180	180	180



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	TOTAL	AVG. STOPPAGES/LOOM/10 ⁴ PICKS
WARP	12	2.36
WEFT	26	6.07
TOTAL	38	8.43



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