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EDITORIAL PREFACE

Institute of Jute Technology IJT, being Premier HRD Institution in the field of Jute Technology, besides offering regular courses in Jute and allied fibre Technology, it has offered comprehensive workers' Training programme for Jute Mill workers during 2000-2003 under UNDP-CCF1-FAHP Jute Sub-programme executed by Ministry of Textiles, Govt. of India, establishing 9 workers Training sub-centres in different region of West Bengal where most of the Jute Mills of India are located concentrated.

As there was no existence of formal system of workers' Training in jute mill, Ministry of Textiles, Govt. of India has entrusted this responsibility to IJT, under UNDP-CCF1-FAHP Jute Sub-programme Project activity as a priority HRD work for Jute Mills.

However, shouldering this responsibility, IJT felt that along with arrangement of workers' training for Jute mills' workers, it is highly essential to publish workers training manuals in different languages separately for separate section as an important documentation and to supplement the sustainble need for future continuance of training activity by mills itself with the help of these manuals. Hence, these manuals are prepared and published by IJT in English (in combined Volume), Bengali and Hindi (in separate part for separate sections) languages, to be given to the workers trainee at free of cost and to be sold to others at a reasonable price. Thus, IJT has prepared eight training manuals (four for Mill side and four for factory side) on Jute Processing for general workers' training on jute processing for Jute Selection & Batching to Jute Sack-sewing & Finishing. IJT is also publishing training manuals on Maintenance of Jute Mill Machinery (both for Mill Side and Factory Side) and also on Training of Weaving Line Sardars. These manuals will help the workers, Sardars and Mistries/Fitters of Jute mills to know the right procedure of doing a work, to grasp the rationale of various presumptions and thumb rules prevailing in jute manufacturing and to be alert and skilled knowing Do's and Don'ts for Jute Processing in each section.

During editing of these manuals, it is kept in mind to make it much lucid and easy readable by Mills' workers/trainee (who can read at least one language among Bengali/Hindi & English). English volume are particularly helpful for HRD-trainers. However, to make presentation of the whole of jute processing in a brief way in these manuals, many things have been left, considering those perhaps not essentially required for workers' training level. Hence, for trainers and supervisors of Jute Mills, IJT is publishing another five separate handbooks entitled (i) "Technical Handbook on Jute Processing : Part 1-Mill Side, (ii) Technical Handbook on Jute Processing : Part 2-Factory Side, (iii) Technical Handbook on Physical Testing of Jute Fibres and Yarns, (iv) Technical Handbook on Chemical Processing of Jute for Diversified Products and (v) Technical Handbook on Computerised Colour Matching and Print Design System" to supplement the need of others including Trainers, Supervisors and Managers of Jute Mills.

The advice and suggestions rendered by some members of the Board of Advisors for Workers' Training Programme of IJT are gratefully acknowledged. The editorial assistance received from Achutananda Chakraborty, Abhijit Mukherjee, Amit Das and Kaushik Maiti, all Project Officers under UNDP-CCF1-FAHP - HRD Project of IJT is also acknowledged. On behalf of the faculty and authors and Institute as a whole, thanks are rendered to IJMA, UNDP-CCF1-project authority, NCJD, JMDC, Office of the Jute Commissioner and Ministry of Textiles, Govt. of India, for their encouragement and support.

For all of these workers' Training Manuals, even with careful editing and compilation, some overlooked mistakes and misprints might have crept in, which are regretted. However, constructive criticism and suggestions of readers are welcome for further improvement of the manuals during next edition.

Editors
1. **Objectives:**
   
   1) To reduce the number of fibres in the cross-section according to the count of the yarn.
   
   2) To impart twist to form the final yarn structure.
   
   3) To wind the yarn on a bobbin maintaining proper yarn tension.

2. **Introduction about Jute Spinning :-**

   Normally a finisher drawing sliver (third passage in case of fine yarns and second passage in case of coarse yarns) is used as a feed material of spinning frame.

   The majority of jute yarns are spun from finisher drawing crimped sliver, which is contained in can for 25-30 hours capacity individually. The essential features of the spinning frame are drafting, twisting and winding. The mechanism of twisting and winding functions is common and integral, although there is some difference adopted in controlling fibre motion during drafting in drafting zone of different type jute spinning machines.

   All type of jute spinning frame have three common zones-viz - Creel zone, Drafting zone and Twisting & Winding zone.

   All jute spinning frames have two sets of rollers along the length of the machine, the retaining and drawing roller which are positively driven. Each of these sets are provided with pressing roller for fibre gripping. Retaining and retaining pressing rollers are fluted and metallic but the drawing roller, though metallic, it has line scratch and its pressing roller is covered with rubber cots. Drafting is the attenuation of the feed sliver suitably to get desired weight of yarn per unit length (count). In jute industry, three types of draft control system for spinning machines are in practice generally. They are:-
   
   (a) **Slip Draft System (Breast Plate and Intermediate Rollers)**
   
   (b) **Apron Draft System (Apron and Pressure Plate)**
   
   (c) **Grooved Intermediate Rollers (Slip Draft for Coarse Count)**

2.1. **Different drafting system of Jute spinning machines :**

   Depending on the required count and raw material characteristics, design of spinning frame varies. Yarns for hessian warp, weft, sacking warp etc. (grist-4 to 16) are spun through a slip draft or apron draft (4\(\frac{1}{4}\) inch and 4\(\frac{3}{4}\) inch pitch) spinning frames. Coarser yarns like sacking weft (grist-20 to 35) are spun through (51/2 inch and 6 inch pitch) slip draft spinning frames with grooved intermediate rollers.

2.1.1 **Slip Draft Spinning System (with Breast plate and intermediate roller).**

   In between the retaining and drawing rollers, there is a smaller semi-circular plate, concave outwards, called **breast plate** which controls the short fibre movement. After the sliver passes behind the plate end, it enters a short channel at foot of which there is a pair of
DRAFTING SYSTEM OF DIFFERENT JUTE SPINNING MACHINES

Fig. 4.1: Slip-draft
चित्र ४.१: स्लिप-ड्राफ्ट
চিত্র-৪.১: সিপ ড্রাফ্ট

Fig. 4.2: Apron-draft
चित्र ४.२: एप्रोन ड्राफ्ट
চিত্র-৪.২: এথন ড্রাফ্ট

Fig. 4.3: Grooved roller (5.5") system
चित्र ४.३: ग्रूड्ड रोलर (५.५ इंच) सिस्टम
চিত্র-৪.৩: গ্রুড্‌ড রোলার (৫.৫") সিস্টেম
Fig. 4.4 : Path of yarn through buxter flyer

चित्र ४.४ : बाक्स्टर फ्लायर के माध्यम से धागा-पथ

चित्र- ४.५ : बाक्स्टर फ्लायर से सूतार गतिपथ

Fig. 4.5(a) : Path of yarn in Two-legged flyer

चित्र ४.५(ए) : बिपद फ्लायर के माध्यम से धागा पथ

चित्र- ४.५(ए) : बिपद फ्लायर से सूतार गतिपथ

Fig. 4.5(b) : (A) Improper Yarn build up in bobbin (A)
(B) Correct Yarn build up in bobbin (B)

चित्र ४.५(बि) : (ए) अनियमित धागा लपेटाई (बब्बिन A में)
(बि) सही धागा लपेटाई (बब्बिन B में)

चित्र- ४.५(बि) : (ए) बब्बिन-ए तें सूता नीचे और उधरे दृश्य में

ठीकताबे गुटानी हमारी
(बि) बब्बिन-ब तें सूता ठीकताबे गुटाना हरेचे
Fig. 4.6(a) : Auto-doffing System
চিত্র ৪.৬(এ) : অটো-দাফিং পদ্ধতি
চিত্র- ৪.৬(এ) : অটো ডফিং পদ্ধতি

Fig. 4.6(b) : Auto-doffing System
চিত্র ৪.৬(বি) : অটো-দাফিং পদ্ধতি
চিত্র- ৪.৬(বি) : অটো ডফিং পদ্ধতি
Fig. 4.7(a): Yarn Piecing

Fig. 4.7(b): Yarn Piecing

Fig. 4.7(c): Yarn Piecing
intermediate rollers, the lower one positively driven and upper one deriving its motion from the lower. Both rollers are deeply fluted; the upper one having a circumferential groove on its surface to allow the sliver to pass through by slip through these grooves. The upper roller is self-weighted to prevent premature drafting of the short fibres. After leaving this pair of rollers the sliver enters a small conductor and then passes directly into the drafting nip. Fig.4.1 shows the path of sliver in slip draft sliver spinning system, with breast plate and intermediate roller arrangement.

2.1.2 Apron Draft Spinning System:
On apron draft jute spinning machine, fibres leave the nip of the retaining rollers and then pass on to the surface of a rubber apron. As they move down towards the drawing roller they pass through apron and apron plate which is pressing the apron gently. The apron helps to stop uncontrolled fibre movement. Below the apron is the usual conductor just before the drawing roller nip. Fig.4.2 shows the sliver path in apron draft spinning system.

2.1.3 Grooved Roller type Slip Draft Spinning System (with grooved intermediate rollers arrangement in between retaining and drawing rollers)
Another type of control is typical of some large pitch spinning frame used for heavy or coarser count jute yarn. The sliver passes down over a series of smooth surface intermediate rollers, each of which has a deep circumferential groove cut in its face. The setting of lower rollers can be adjusted to give a greater or large tension in the sliver. Fig.4.3 shows the sliver path in grooved intermediate roller type Slip Draft spinning system. These machines can run with low speed (2200-2500 rpm). But the previously designed such frames run with 3600 to 4000 rpm for low to medium count of yarns.

2.2 Twisting and Winding arrangement.
Jute spinning frame inserts twist by means of overhung flyers suspended above the bobbins which are rotated by the yarn pulling them round.

The flyers may be two legged or tubular, (bauxter type) which are carried on ball bearing wharves, mounted at the front of the frame at a suitable height (Fig.4.4 & 4.5 shows the path of yarn through two-legged and baxter flyer respectively). The upper portion of the wharve is called wharve cap and plays an important role in case of piecing of yarn. The wharves are driven by cotton tape from the main cylinder of the machine. The yarn passes down from the drafting nip to the top of the wharve cap where it enters a central hole and comes out at the exit hole. The flyer is screwed on that portion of the wharve where the exit hole is. The ends of the flyer legs have Tungsten Carbide (TC) eyelets brazed on it. The yarn after coming out of the exit hole is routed through one TC-eyelet and then on to the bobbin shank. While running, the yarn gets wound by the flyer on to the bobbin shank, there being a speed differential between flyer and bobbin.

2.3 Semi-automatic Doffing Arrangement (Common to all jute spinning system)
When the bobbins are full, the frame is stopped with the Builder-Rail as near the bottom of the traverse as possible. By pushing in a clutch-lever, the builder is brought into gear with the Auto Doffing Arrangement, which is operated by a hand wheel and the traverse-gear, then is disconnected by pulling out the spring-loaded clutch-pin (Fig.4.6a & b). The hand wheel is then released and the Builder-Rail lowered out of traverse on to the Bracket where it presses down the counter-balance weight of a catch. The rail is then slid forward by operating a foot-wheel, thus bringing the Builder-Rail with the empty bobbins into position. When the Builder-Rail with the empty bobbins is lifted by operating the hand-wheel, the clutch-pin snaps home as soon as the builder reaches the position from which it was
disconnected, thus bringing the traverse-gearing into operation. The clutch-lever is then pulled out thereby disconnecting the auto-doffing arrangement (otherwise the machine would not start). A few turns of yarn are wound on the bobbins and the ends cut; thereafter, the frame is started up to speed and the individual automatic stop motion is brought into operation by depressing another lever situated just above the starting-lever. The full bobbins are replaced by empty bobbins is then slid to the backward position by operating the foot-wheel. When the rail reaches this position, the bracket is slid forward again by operating the foot-wheel in the reverse direction. As soon as the bracket reaches the proper position, the counter-balance weight is released from under the rail and the catch snaps up and holds the rail in position, and the mechanism is ready for the next doffing.

2.4 Spinning Frame Specification / Particulars:

1. Manufacturer: James Mackie & Sons / Lagan Jute & Machinery Ltd.
2. No. of Spindle: Generally 100 spindles for 4\(\frac{1}{4}\) inches and 4\(\frac{3}{4}\) inches pitch machine and 80 spindles for 5\(\frac{1}{2}\) inches and 6 inches pitch machine. Some of the mills have 110 spindles 4\(\frac{1}{4}\) inches pitch apron draft machine and 96 spindles 4\(\frac{3}{4}\) inches pitch apron draft machine.
3. Pitch of the Spindle: 4.25, 4.75, 5.50, 6.0 inches.
4. Lift: 6, 7.50, 4.50 inches etc.
5. Bobbin Size: 3.5in. x 7.5in., 6.5in. x 3in., 5.75in. x 2.625in. etc.
6. Count Range: 4-16 lbs./spindle in 4.25 and 4.75 inches pitch machine. 20-35 lbs./spindle in 5.5 and 6 inches pitch machine.
7. Drive: Left or right hand lenix drive machine is available.
8. Sliver Stop Motion: Mechanical sliver stop motion is available (optionally pneumatic sliver suction device in lieu of stop motion particularly in apron draft spinning machine.)
9. Flyer Speed: 3200 to 4200 rpm. for fine count and 1800 to 2700 rpm. for coarser count of yarns.

3. Some useful terms in Spinning:

3.1 Pitch: - This is commonly known as spindle pitch of spinning machine. It is the distance between the two consecutive spindle centres. For coarser side the pitch should be higher, usually 5\(\frac{1}{2}\) inch and for finer side the pitch is lower, usually 4\(\frac{1}{4}\) inch.

3.2 Lift: - It is the amount of total upward & downward linear movement of the carriage of spinning bobbins for perfect winding of the yarn and building of the bobbins.

3.3 Spinning speed (R.P.M. of Spindle): - It is the number of circular rotation of spinning spindle per minute, indicating the speed of twisting and winding of the yarn.

3.4 Twist, Twist Constant & Twist change pinion - Twist is the turns about their axes of fibres in yarns. It is obtained by the revolution of the spinning flyer relative to the delivery roller speed.

Twist Constant is a machine constant of spinning machine, used to determine machine setting to obtain a desired level of twist per inch (TPI).

Thus, twist can be expressed in turns per unit length, e.g., Turns per inch (T.P.I.) or else.
TPI can be mathematically expressed as, Turns or Twist per inch x Twist Change Pinion (T.C.P.) = Twist Constant.

3.5 Draft, Draft Constant & Draft Change Pinion - Draft is the amount of attenuation given as expressed by the ratio of the surface speed of fast moving rollers to that of slow moving rollers, to obtain proportionate reduction of the number/weight of fibres per unit length than that of initial fibre aggregate/sliver. Thus, it is the method of reducing the size of a fibre aggregate by advancing it through pairs of rollers moving with progressively higher surface speed. Draft constant is a machine constant obtained by the surface speed ratio of drawing roller to retaining roller considering the change pinion as one. It is a constant number. This can be well expressed as draft constant x draft change pinion = draft.

Draft change pinion - It is a change pinion used to produce required draft using above relation.

3.6 Yarn Breakages or End Breakage Rate - It is the number of times the spindle end remain idle per unit time/per spindle or per 100 spindle due to discontinuation of sliver flow from the back of the spinning machine to the spinning bobbin for a spinning machine of usually 100 spindles. This is expressed in terms of number of end breakage per 100-spindle per hour revealed through a snap study.

3.7 Doffing Time - This is the operation of product (full spinning bobbins for spinning machine) removal from any textile machine. In spinning, it is the time taken to remove the filled bobbins from the operating position of the carriage and replacement of the carriage with empty one.

3.8 Grist (lbs/spy) - It is the weight of jute yarns of length of 14,400 yds. (Spyndle) in lbs. (pounds) indicating the linear density (Grist, for jute yarn) of the yarn in a direct system of yarn count, while universal direct yarn count i.e. ‘tex’ is expressed as the weight of yarn in gm of 1000 metre. The relation between tex and grist is as follows:

\[
\text{Tex} = 34.45 \times \text{Grist}
\]

3.9 Quality Ratio - This is an index used by jute spinners frequently, which is expressed 100 x (breaking load of yarn in pound) x (linear density of jute yarn in lbs/14,400 yds.)

The preferred quality ratio value for 4.8 lbs/spy to 12 lbs/spy yarn is 95-100, while that for hessian warp and weft is above 85 and 80 respectively and that for sacking warp and weft also should be around 85 and 80 respectively.

4. Do’s And Don’ts for spinning operator

01) Follow the proper identification marks/ colour of sliver cans for different qualities of yarn making. Use finisher drawing can with same identification mark.

02) Follow the identification marks/ colour of yarns, frame number, Draft change pinion (D.C.P.) and Twist Change Pinion (T.C.P.) on spinning machines.

03) Mark the bobbins for different quality of yarns.

04) Maintain uniform bobbin weight.

05) Use felt bobs with same life span.

06) Follow all the instructions of supervisor in case of quality change & use proper identification marks, as instructed.

07) Use coloured yarn for marking in lieu of hooks when necessary for export yarn.

08) Tie waste bag at proper place at the start of the shift as instructed.

09) Clean the machine parts and surroundings properly at the start of the shift.

10) Set the bobbin on carrier wheels properly.
11) Take immediate remedial measures to run the idle spindle.
12) At the start, understand previous shift’s working from earlier shift’s operator.
13) Follow the schedule duties and responsibilities of a spinning operator. However, in case of sliver shortage or excessive end breakages, take measure as per instruction of line sardar/supervisor.
14) Work in a safe and attentive way to avoid accidents.
15) Check and arrange to replace worn-out pressing roller, broken yarn detector, broken porcelain flyer-eye, worn-out leather wiper, defective bobbin carrier, broken or defective bobbin heads, damaged felt bobs etc., if found.
16) Before sending back the empty sliver cans to drawing department, make sure that the can is thoroughly empty.
17) Occasionally clean the spinning machine by air blow, but in idle condition only.
18) Use graphite powder lubricant (no grease or oil) in builder rail for correct bobbin building.
19) Check the position of the felt bob and report the concerned supervisor for replacement, if necessary.
20) Remove badly fit and damaged bobbin.
21) Avoid rough handling of the bobbins.
22) Keep each type of sliver/thread waste in the waste bag separately.
23) Occasionally check the condition of apron or depth or the groove in grooved idler roller and report the concerned supervisors if necessary.
24) Avoid “Morah Mara” system during doffing time. This is a bad practice and to be avoided.
25) Attend end breakages systematically by proper piecing (Fig. 4.7a, b & c) taking optimum time.
26) Ensure sliver feeding from cans, avoid rubbing of slivers against rivetted can wall.
27) Feed sliver from can without wasting good sliver.
28) Keep watch on the stock of full sliver can and dispose of empty can at the back of the spinning frame.
29) Piece-up the yarn with minimum length without causing generation of thick place.
30) Clean the idler roller, pneumatic pipes etc. when necessary.
31) Keep the reserve bobbins and creel bobbins free from fluff, dust and yarn accumulation.
32) Don’ts use any knife during bobbin cleaning.
33) Inform the concerned Supervisor/Sardar if any spindle is observed with less lubricated or running without lube oil.
34) Inform your superiors, if ball-container and spring is not available.
35) Inform the superior immediately regarding damaging and repairing of cotton tape.
36) Leave the work spot only after giving the charge to reliever for going out from workplace for personal needs and for nature’s call.
5. Reasons for loss of efficiency in jute spinning (Quality wise):

The following table gives an idea about reasons and their due weightage causing loss of efficiency in jute spinning machines:

**TABLE 5.1 CAUSEWISE LOSS IN EFFICIENCY % FOR UTILISATION OF A TYPICAL JUTE SPINNING FRAME**

<table>
<thead>
<tr>
<th>Quality</th>
<th>Hessian Warp</th>
<th>Hessian Weft</th>
<th>Sacking Warp</th>
<th>Sacking Weft</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count Range</td>
<td>7.0-8.5</td>
<td>8.5-10.5</td>
<td>7.0-8.5</td>
<td>8.5-10.5</td>
</tr>
<tr>
<td>Causes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yarn breakage</td>
<td>6.20</td>
<td>6.00</td>
<td>6.50</td>
<td>6.20</td>
</tr>
<tr>
<td>Doffing</td>
<td>7.30</td>
<td>7.70</td>
<td>7.50</td>
<td>8.20</td>
</tr>
<tr>
<td>Sliver shortage</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.20</td>
</tr>
<tr>
<td>Sliver break</td>
<td>0.20</td>
<td>0.20</td>
<td>0.20</td>
<td>0.20</td>
</tr>
<tr>
<td>Mechanical</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Sliver jamming</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
</tr>
<tr>
<td>Oiling &amp; cleaning</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
<td>1.00</td>
</tr>
<tr>
<td>Bobbin shortage</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
</tr>
<tr>
<td>Electrical</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
<td>0.10</td>
</tr>
<tr>
<td>Others</td>
<td>1.2</td>
<td>1.00</td>
<td>0.70</td>
<td>1.10</td>
</tr>
<tr>
<td>Total loss (%)</td>
<td>19.00</td>
<td>19.00</td>
<td>19.00</td>
<td>20.00</td>
</tr>
<tr>
<td>Efficiency (%)</td>
<td>81.00</td>
<td>81.00</td>
<td>81.00</td>
<td>80.00</td>
</tr>
</tbody>
</table>

6. **Reasons for End Breakages in Spinning**

There are various reasons for end breaks in jute sliver spinning machine. In general it can be explained that whenever the yarn is not able to withstand the spinning tension, there will be end breaks causing loss in efficiency thereby lower production.

**Causes of End Breaks / Yarn breaks in Spinning :-**

*Due to feed material*

1. Irregular sliver
2. High variation in sliver weight
3. Improper moisture
4. Presence of roots & specs in sliver

*Due to spinning Frame*

1. Wrong selection of machine parameters like spindle speed, twist & their high variations, high draft etc.
2. Improper setting of machine components like breast plate, front conductor etc.
3. Improper position of the felt bobs under the bobbin carriers.
4. Improper wrapping of yarn on the flyer.
5. Broken machine components specially gears.
6. Improper movement of rollers.
7. Poor maintenance of the machine.

Snap study is a method for judging the end breakage rate in spinning. Standard end breakage rate in spinning for different qualities of jute yarns is as follows

<table>
<thead>
<tr>
<th>Quality</th>
<th>Standard ** end Breakage Rate / 100 spindle-hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hessian Warp</td>
<td>100-110</td>
</tr>
<tr>
<td>Hessian Weft</td>
<td>110-140</td>
</tr>
<tr>
<td>Sacking Warp</td>
<td>130-150</td>
</tr>
<tr>
<td>Sacking Weft</td>
<td>140-180</td>
</tr>
</tbody>
</table>

PART - A-GENERAL

GENERAL HRD GUIDELINES FOR WORK IMPROVEMENT IN JUTE MILLS

Main Objectives Of These Guidelines:

i) To provide a better understanding of the jute mill workers about their role in the process of attainment of organisational goals. Thus, to improve work culture through training and self motivation.

ii) To understand the right procedure and process mechanics of each job, a worker performs so as to improve the technical skill & to improve the process efficiency i.e. to promote improved productivity for the overall benefit of both the workers and the organisation as a whole.

iii) To aware the mill workers about the target of maintaining and improving product quality and methods of reduction of waste and their role in attaining organisational goal to minimise production cost and to get maximum productivity with optimum utilisation of available resources, through necessary training and HRD-interactions.

Mental Set-Up To be Developed:

Every workman of the mill has to make mind set up for doing good work for the mill from where his and his family's livelihood is maintained. Every workman in the mill should feel that the machine, he operates is his own and he is there to achieve the target of the mill authority for the betterment of both. Furthermore, every workman should be aware that he plays a key role in the quality and quantity of the production of the mill and he is also responsible for developing good work culture in the mill. So he must be well aware of his duties and shall attain the optimum skill of doing his jobs and in the same time he has to maintain a good relation with his co-workers and superiors. So, he has to report for the duties well in advance of the shift and take the responsibility of target production in the allotted machine with supplied feed material and work instructions.

Some General Guidelines for work-improvement:

01. Report at the work place or near the machine or at the specified place a few minutes before the beginning of the shift.

02. Take charge from outgoing colleague at the start of the shift. Take instructions from superiors and clarify doubts regarding changes made in the previous shift, if any, and check and make sure that the machine, feed material etc. are in right or good conditions.

03. Hand over the machine to the operator of the next shift in running condition.

04. Avoid unnecessary discussion/conversation with co-workers or superiors.

05. Tie the waste bag as specified and deposit waste only in the waste bag and do not drop any waste on the floor or on the machine.

06. Use appropriate material handling equipment for transporting jute bales, opened jute morah, spreader & breaker roll, sliver can, spinning bobbins etc. and handle the materials carefully.

07. Apply specified lubricants to the trolleys and maintain them always in clean and good working condition and leave the material handling equipments at the specified place immediately after use.
08. Keep the work place and machine in clean and good working condition.

09. Inform the sardar / supervisor immediately whenever -

a) If, a breakdown occurs.
b) If, a unusual/abnormal sound is heard.
c) If, any defect in the equipment or in any devices is found.
d) If, broken or damaged doors, windows, skylight etc. are seen.
e) If, any stop motions or any of the safety devices are not working.
f) If, any electrical fault occurs.
g) If, any heads of a machine producing defective products (say defective rolls in breaker, defective yarn bobbin in spinning etc) or if there recurring jam occurring in any machine.
h) If, any machine parameter cannot be maintained as required (say pressure on drawing pressing roller is not proper in drawing machine etc.)
i) If, any difficulty in running a machine (Say grist monitor in breaker card or stop motion in drawing machine not working properly).

10. Accept without any objection other work assigned on other machine or in other departments or in other part of the dept, whenever necessary, as per instructions of superiors.

11. Co-operate with the superiors and work normally without any objection, whenever any changes are made in the work place or when new type machines are erected or when a particular machine is modernised under major change. One operator has to be conversent with new methods and operating a machine without unnecessary resistance for benefit of keeping an organisation alive in tune with current market demand of product etc.

12. Co-operate with superiors in increasing production, eliminating waste generation, improving quality and maintaining industrial peace, discipline, etc. to keep an organisation economically liable in present market situation. For changes suggested for cost reduction, adoption of modern / new method / equipment, all workers should co-operate.

13. Attend to proportionate additional work assigned by the supervisors whenever underloaded or essentially required by the organisation to overcome a particular situation.

14. Close/open the departmental doors, windows and sky lights/ventilators depending upon the departmental conditions as per superior's instructions and help in running the humidification plant effectively.

15. Follow up strictly the marking procedure or token systems as instructed to avoid quality mix-up.

16. Collect spare parts, materials, etc., if these are found lying on the floor or on the machine and place them at appropriate places.

17. Do not change the rollers or any machine parts from one machine to another without superior's permission. Do not change any pinion or gear without the permission of the Sardar/Supervisor / other superiors.

18. Maintain and use the safety equipment and other safety devices properly and follow safety norms.

19. Run the machine for getting the production till the end of the shift without any unnecessary stoppages of machine even after achieving the target production.
20. Do not run the machine at slow speed unnecessarily without Supervisor's instruction.

21. Load or unload the machine parts, etc., whenever necessary, as per instructions of supervisor.

22. Take special care in reducing waste generation.

23. Reduce time-consuming rework and repair. Call mechanical and electrical mistri immediately for quick repairing of the machine.

24. Electrical devices and equipment should be handled only by the trained electrical persons.

25. Handover the machine, equipment, workplace, etc. for the incoming shift-worker in clean and good condition and explain in detail regarding the changes, if any, made during the shift to incoming shift worker.

26. Carry out the special duties immediately for export quality goods and co-operate for improving/achieving better quality product, following all instructions strictly. Export earning brings financial affluences to the organisation and company grows, employment opportunity, staff welfare facilities etc. the can be improved.

27. Follow each and every instruction of Supervisors, while changing the quality.

28. Clean the oil/grease on the floor immediately to avoid accident.

29. Avoid wearing loose-fitting garments while working.

30. Don't carry match-boxes and other inflammable materials and not to smoke in the work place.

31. Leave the work place only after getting permission from the supervisor and return within the specified time. This may be required for tiffin, tea, nature's call, etc.

32. Must report the superior when going out even for any teamwork/representation or otherwise.

33. Use the fire buckets and other fire fighting equipment only for fire fighting and ensure that they are always kept at the specified places and ready for use.

34. Leave the work place only after the signal (red light) glows or the siren is heard.

35. Assist supervisors in the respective department in taking process-stock.

36. Assist the S.Q.C. assistants or staffs whenever necessary, for taking all types of studies and trials.

37. Maintain good housekeeping and keep everything clean.

38. Carry out all existing duties, which are already in practice, not keeping the work left for next shift.

39. As a whole, quality of the products of the mill has to be maintained and is to be improved. A quality circle activity/meeting in each week will be beneficial in this regard.

40. Those who understand and can explain the new and improved work methods, those should be conveyed to others. A Study circle activity between trained and untrained group of workers under a Supervisor/HRD officer of the mill in each week will be beneficial for improving work culture and skill of the workers.