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## OCCASION

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ORGANIZATION (UNIDO)  
Purchase and Contract Service  
P. O. Box 300  
A-1400 Vienna,  
AUSTRIA.

Our Ref. MA/LP-85/89

Genoa, 26th June 1989

Dear Sirs,

Re : Draft Final Report, as per sub-paragraph  
2.19 b of Contract N. 26/127 relevant to  
UNIDO Project N. US/URI/85/229 - ACTIVITY  
Code : US/01.31.7.

In accordance with para 2.01 of the aforesaid Contract, the Contractor has fulfilled his obligations and performed the work as follows :

1. Supply of technical knowledge required for the organization of the production in the two Mills.

The Contractor's Team of Experts have properly and successfully implemented their job through theoretical lessons



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some and practical interventions, aimed to get good production, in quantity and quality, smooth running of the Mills, proper maintenance and machine settings, organization of Labourers' activity at all levels, control and manufacturing of spare parts.

The achievement of the above mentioned objectives has occurred thanks to a coordinated plan which was studied and implemented on the following criteria :

## 1.1 Organization of Production.

A production manual has been studied and introduced taking into consideration all prevailing factors of the local working conditions, so as to properly fit to :

- . Shift supervisors
- . Champ hands
- . operators
- . Helpers.

A first group of selected personnel has been initially trained by the Contractor's Experts to be of help in explaining, showing in practical way and finally assign the job to the personnel recruited for production.

In parallel to this training, the team has checked the "production control forms" being in use and duly modified, when necessary, or added new ones so that the entire flow of production could be kept under strict control.

Apert a better cost analysis per section or department, this system has proved to be of great utility in identifying the "bottle-necks" and consequently to rectify shortages or over productions (not always positive, as slivers, yarn or twist can lay up and loose strength).



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Based on all the above, the organization of production has finally been accomplished through a proper distribution of the working force, in number per machine/section and according to the characteristics of each worker.

### 4.2 Machine setting.

The field of intervention was more on the mentality of the workers than on the machinery.

In fact, the common mentality was not "to touch" a machine if it is in working condition.

Apart the preventive maintenance, which will be dealt with later, it took a lot of effort to train the local people for regularly checking and setting the machines. It seems to us that the quality of product has improved a lot, as well as the manufacturing cost, but a great benefit has been gained also by the workers themselves, as better the machine is set, lower is their working load.

The little sections more involved in these operations are:

#### 4.2.1 Feeding.

Due care has been given for a correct pin projection and shaves setting.

#### 4.2.2 Feeding.

The placing of the filler bars is an essential key for an efficient operation of the machines.

#### 4.2.3 Spinning.

Alignment of the high draft group with the repiecing device and, in general, the spinning pot has been



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due diligence taken care of and locally made jigs have been manufactured to help the local personnel to properly perform their duty.

*Tuning.*

Tuning of the loom is an essential condition to have the machine to produce in quantity and quality.

In the Hills there were teams of "loom tuners" which have been retrained and also the mechanics and some operators have been instructed so as to have the machines in efficient conditions as much as possible.

### 1.3 Preventive maintenance.

As already mentioned in Gardella's report HA/CE/LA 01703 of 15/6/88, a new maintenance programme has been prepared and implemented.

It provides for :

- Daily maintenance, which consists mostly on proper cleaning, checking and lubrication.
- Weekly maintenance, to be carried out at the end of the week to complete, through a deeper cleaning and checking, the daily maintenance.  
Particular attention is given to the fast running parts, to those components more exposed to a quick wearing out and those which cannot be manufactured locally and have to be imported.
- Monthly maintenance, where replacement of worn out parts take place. This operation has also the purpose of repairing these parts so as to reutilize the



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... that or to manufacture them, whenever possible, to restore their level in the warehouse.

The monthly maintenance is carried out by a selected team of mechanics.

Furthermore a six month and a yearly preventive maintenance programme has also been introduced in the carding section.

In fact the pins are replaced when missing or worn-out and this operation is already included in the weekly or monthly programme, but the pins of the cylinders have, in any case, to be replaced every six months while those of the workers and doffing roller at least once a year, to have a uniform projection and consumption to properly card the fiber and so having a regular surface for the subsequent operations.

The preventive maintenance programme is carried out on the following basic concepts, which are properly implemented:

\* Recording of the maintenance.

Various forms, covering all the machines, have been introduced and are regularly filled up.

\* Control of spare parts stock.

The store has been organized in a way that for each spare part a minimum and a maximum "re-order level" have been identified and should a given part drop to the minimum, the store keeper orders the quantity to reach the "maximum".

Spare are identified as "locally available", "to be manufactured by the Hill" or "to be imported".

The Chief Engineer has been encharged also to check regularly the list of the spares delivered to the



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Mills, so as to decrease abnormal consumption.

1.2 Repairing and manufacturing of spare parts.

Each Mill had its own workshop, equipped to carry out the repairing of machinery's broken parts.

To increase the mill efficiency of the Mills it was found necessary not only to repair broken parts but also to manufacture spare parts.

A central workshop has been built and machinery installed with tools and instruments; a Contractor's Expert has been allocated to start, organize and produce as many parts as possible.

His duty has been carried out as follows :

- \* through the statistical data of consumption, a list of spares have been identified as locally producible;
- \* a working plan has been studied, comprehensive of material required, quality of goods, etc.;
- \* training has been given to local personnel to properly exploit the workshop equipment, to read the mechanical drawings and to follow the working plan.

Thanks to the Central Workshop a great number of spare parts are now locally produced and the Mills can save a great amount of foreign currency.

Of course there is still plenty of room for improvement, for higher quantity of production of local spares, for more exhaustive training, but really a lot has been done and the results achieved are more than satisfactory.



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of factory.

### 1.5 Training.

On the job training has been given, for all the sections, to a large number of operators, mechanics, helpers, supervisors, etc.

A training programme has been prepared and can be summarized :

#### - Spinning section.

Fibers blending, correct percentage and way of batching. Gerdston preparing and its application. Different fiber fermentation according to temperature, relative humidity, grade of fibers and quality of batching.

#### - Carding and Drawing sections.

Regular feeding on the card. Setting of the staves. Replacement of wear-out pins. Phasing of the faller bars.

Maintenance of the rubber rollers. Safety stop motions to be properly adjusted to avoid missing doublings.

#### - Spinning section.

Maintenance is the most important factor to have the high speed spinning frames always performing well. These are the most expensive machines in the production line, so the impact in the manufacturing cost is substantial.

Training of personnel to become skilled is the other important factor.





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Winding and Preparing to Weaving sections.

As the machines of these sections are relatively simple in maintenance, the Experts have concentrated their job in training the operators because through their good performance the efficiency in the weaving section will be benefited.

Machine section.

Maintenance and good operations share the same importance.

Great effort has been given by the Contractor's Experts to train the weavers to operate well the Looms to get good quantity and quality of production.

Tuning of the Looms has been exhaustively explained, both in theory and in practice, to the concerned Looms and to the mechanics (plus some operators that have shown a good attitude).

Some Looms have been kept for training of operators, mechanics and tuners: local personnel can now properly train their own countrymen, as the rate of turnover is very high.

The supply of technical know-how has been performed, a lot of people have been trained, the production manuals, the tuning programme, preventive maintenance programme, etc. are among the benefits that TECL, Mill 1 and Mill 2, have enjoyed thanks to the hard and valuable job of the Contractor's Experts.



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2. Supply, CIF Bar Es Saloon of all equipments, spare parts, tools, etc. as enlisted in the Annexes H and I of the Contract.

All Contract equipments in accordance with the Terms of Reference, Annex E of the Contract, as enlisted in Para 2, pages 3, 4, 5 of said Annex E, has been properly and timely delivered (September 1987).

In fact all the above has already been dealt with in our previous reports and confirmed by Mr. Antero Eraneva in his Mission Report, dated 3rd February 1988, page 3, para 1. (11).



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### 3. Assignment of Experts:

3.1 The contractual period of assignment is 96 man/month, for which 4 Experts have been assigned to IBCL for 24 months.

The Experts were identified and their curriculum vitae sent to UNIDO.

Their "Project Functions" were clearly assigned and the team leader nominated, and in 1987 the contract became operational.

UNIDO has already certified that by the end of May 1988, a total of 52 man out of 96 man were already completed (see Gardella 3rd Progress Report 215/88 of 15/6/88).

The planned departure of the team was set to be at the end of May 1989.

These Experts (Mr. Garavaglia, Mr. Traverso and Mr. Orlandi) have regularly completed their staying, whilst Mr. Dragonetti, for health reasons, was replaced, in December 1987, by Mr. Persiani, who has similar expertise of Mr. Dragonetti.

UNIDO was duly informed of the replacement, by our letter PA/cas - 360/69 dated 12/11/87 and has accepted it.

3.2 Due to shortage of raw material, which has forced the Mills to reduce the working shifts, it was decided, in consultation with IBCL and UNIDO (Mr. Eraneva) to reduce the presence of the Contractor's Experts in number and to extend the same in field duration.

It was in fact found to be more suitable to have 1 Expert (the Team Leader) for 4 months than to have 4 Experts for one month when the Mills were running only one shift because of the aforementioned fiber shortage.



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Furthermore this arrangement would also avoid the gap of having the Mills without Experts until the extension of the Project, about to be formalized, will be implemented.

Mr. Persiani went back in November 1988 and the period of staying of the 3 Experts was extended to end July (see Gardella letter 16/88 of 1/2/89).

In April 1989 Mr. Oricelli returned to Italy, while Trovoso left Nocchi at the beginning of June.

Now to complete the 96 m/a as indicated in the Contract, Mr. Garavaglia will stay there till the end of October.

  
GARDELLA ISI s.p.a.

Dr. (Mrs.) ANNAMARIA MICHELI  
EXECUTIVE AREA MANAGER