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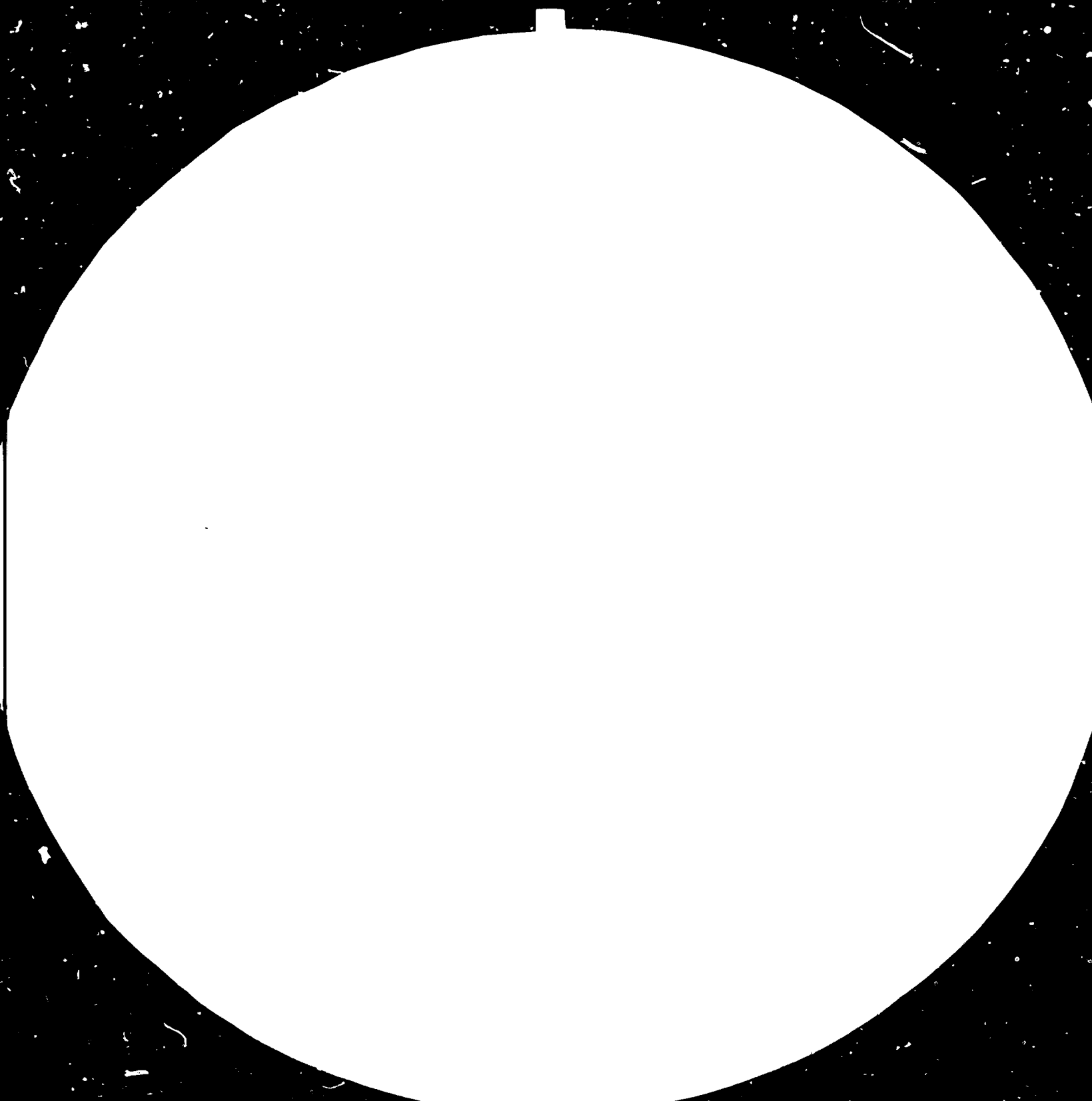
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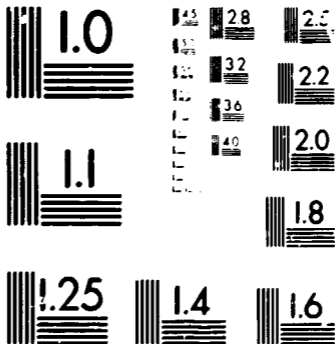
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29 June 1984  
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India.

DEVELOPMENT OF HOSIERY AND KNITWEAR INDUSTRY,  
LUDHIANA, PUNJAB (PHASE II)  
DP/IND/82/006  
INDIA.

Technical Report: Chief Technical Adviser's Technical  
Evaluations of Project Status (2nd Mission)\*

Prepared for the Government of India  
by the United Nations Industrial Development Organization,  
acting as executing agency for the United Nations Development Programme

Based on the work of Stuart Brook,  
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Vienna

2593

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## 1. INTRODUCTION

This Report covers the 2nd mission of the C.T.A. This mission was of 2 months duration from April 1984 to June 1984.

Specific items outstanding which were mentioned during briefing were:

- i) to establish a time for the Tripartite Review Meeting;
- ii) to finalize the imminent study tours;
- iii) to re-submit copies of the Project Evaluation Report (see later);
- iv) to organize the next Project Advisory Committee Meeting to immediately precede the TPR meeting.

Points i) and iv) above were dealt with immediately upon arrival on station the respective dates for the meeting being:

|        |             |
|--------|-------------|
| P.A.C. | 29 May 1984 |
| T.P.R. | 20 May 1984 |

The Project Evaluation Report which has been submitted in December and subsequently returned from Delhi to Ludhiana for some additional entries, had been lost in transit. A copy of the document was re-submitted on 30 April 1984.

A Work Plan for this mission was prepared and is included at Appendix I.

The T.P.R. Meeting took place whilst this Report was being prepared. In preparation for this Meeting several papers were compiled to assist with the clarification of various topics which were included in the N.P.D.'s presentation.

The status of inputs and objectives were covered in the C.T.A.'s presentation and for the sake of completeness are included in Appendices V and VI.

Also during the T.P.R. it was agreed that the C.T.A. should extend his mission by a few days and attend a meeting with local industrialists called by the new Secretary (Industries) State Govt. of Punjab, Mr. S.S. Bhopari. This was scheduled for Saturday 9 June.

Before this meeting could take place a curfew was imposed throughout Punjab prohibiting all movements and the Knitwear Facility was closed from 2 June and is still not operational at this time (11 June).

Obviously the meeting was cancelled and this Report was completed at UNDP, Delhi.

## 2. CIRCULAR KNITTING

The Circular Knitting Expert Mr. M. Bithell was fielded ahead of schedule and before the two Circular Knitting machines has been installed. He was thus able to supervise the commissioning of these machines, and during his initial few weeks he visited several industrial plants for the purposes of familiarization with local conditions. His mission is coming to an end and his report is being prepared at the time of writing. This will include his own detailed observations.

Judging by his comments and general experience in working with the staff, he is most favourably impressed by the competence and response from the national staff in this department.

If this conclusion is added to the opinion of Mr. Kotesovec, the Flat-bed Knitting Expert, then the impact of the Experts as far as knitting is concerned has been most favourable.

## 3. STUDY TOURS

NPD will prepare the programmes and submit Nomination Forms shortly for four staff members who are due to go on study tours:

- i) Tech. Service Manager and Quality Controller
- ii) Processing Manager
- iii) Knitting Master
- iv) Knitting Supervisor.

### 3.1 Tech. Service Manager

The Tour was discussed with Mr. Banerji and the Project Staff, and his itinerary finalized. There is no restriction on the timing of his trip so direct contact is being made with the organizations to be visited to cut down on delay so that the tour may begin in the next few weeks. A full itinerary will be prepared in due course by Mr. Banerji and submitted through the N.P.D. to appropriate parties.

### 3.2 Processing Manager

Due to staff changes Mr. Jankiraman will need to remain on duty until after the Dyeing season is over. Also he will need to be on hand later in the year when the Dyeing Expert is on station.

For these reasons it was decided to postpone his tour until early 1985 but the itinerary has been finalized. As soon as confirmation of his visits is received Mr. Jankiraman will submit his final itinerary via the N.P.D.

### 3.3 Knitting Manager

There has been a great deal of activity in the Knitting Department with Experts, Technicians etc. being on hand almost continuously for the past year. It was deemed prudent therefore to allow some time for consolidation and fix the tour of 1985.

### 3.4 Knitting Supervisor

As 3 above.

## 4. MACHINERY ERECTION

### Buildings:

The Spinning and Preparation areas are now almost complete. Crates containing machinery were moved inside and placed in position during early March.

The extension to the knitting department is still under construction and expected to be completed by end June. Apart from some temporary congestion in the knitting department this is not creating a problem.

No work has begun to date on the S/R Department Building.

Power cables for the Preparation and Spinning depts are in the process of being laid but temporary supplies are available for the test running of the machines.

### Preparation Machinery:

M/s Schlumberger (Preparation Machinery suppliers) indicated that it would require 7 weeks for their fitter to erect and commission the machines. It was the intention that the visits of this fitter and the Zinser (Spinning Machinery suppliers) fitters' should overlap so that material could be completely processed under their supervision.

In fact the preparation fitter completed the task in 2 weeks (2 April to 12 April) and did not run the machines. Also one machine was erected in the wrong location and will need to be moved. A return visit is now imminent to complete the work and process material to commission the spinning machinery.

### Spinning Machinery:

Two Zinser fitters are presently erecting the Spinning Machinery. In spite of the heavy manhandling of crates there have been few breakages and most of these can be repaired or replaced locally. Erection is going well and a heavy complement of Facility staff are engaged in the work. It seems as if the schedule will be improved and this makes it imperative that the Schlumberger fitter should return to complete the job. A tentative date for possible first running for the Zinser machinery is mid June.\*

### Repco and Twisting Machinery:

No dates have been fixed as yet for erection of these machines. Until the major machinery is erected and commissioned any further load would overburden the spinning staff.

\*

In view of the curfew imposed on the State of Punjab during June 1984 the time-schedule for erection and commission of all machinery related to SR treatment and spinning has to be revised.



Mini-Stenter:

To date no action has been taken on this machine. Arrangements for erection are being made and no doubt will be handled by the N.P.D before CTA's next mission.

5. TRAINING

The Training Experts' Report has been carefully studied and the Project staff are working on the recommendations. It is becoming clearer what are the realistic objectives for the project as far as training is concerned. These may be summarized as follows:

- i) To ensure that the Project staff have the capacity to pass on their considerable technical knowledge to interested parties within the country.
- ii) To conduct seminars, lectures, etc. to acquaint the industry with new developments taking place.
- iii) To provide training courses as required in the various techniques.

Points ii) and iii) above have been in operation for over a year, but it was pointed out by the Training Expert that the Facility staff were not sufficiently experienced to best project themselves and their topics to a wider audience. Some initial work was done during his mission but time did not permit this to be concluded.

During the mission the Training Expert and Project staff visited a local Advanced Training Institute which has subsequently agreed to provide training along the lines described. This work has already been arranged and will continue over a period of one month.

The success or otherwise of this exercise will be monitored by C.T.A. and Project management and, if it is decided that extra work by a Training Expert is needed, a second mission will be called for.

6. R+D, TECHNICAL SERVICE AND CONSULTANCY

The Technical Service Manager is due to undertake a Study Tour in the near future and it is the intention to deal with this topic in greater depth on his return.

This note serves to set the perspective and outline some of the main points for consideration:

## 6.1 R + D

Because the processes undertaken within the local industry are relatively unsophisticated it is unlikely that the Facility will be called upon to perform an R+D function as this title is understood in developed countries. It is more likely that findings developed elsewhere will be applied in Ludhiana with modifications to suit the local conditions.

To be effective it is therefore essential for the Facility to be aware of developments in other institutes in India and in similar organizations in other countries, so that the problems can be tackled speedily. This implies having the access to a wide range of information which can be easily retrieved. This topic has been dealt with more extensively in the paper on the Information Cell at the Facility, which shows how an effective compendium of data can be acquired and accessed at relatively little cost.

An efficient Information Department makes the job of researching a problem so much easier and when this can also be done quickly it leads to greater effectiveness all-round.

## 6.2 Technical Service and Consultancy

Although this is one of the main functions of the Facility and has been in operation for over four years it is not operating to the satisfaction of either the project management or those working in this section. One would expect the industry to welcome such a service and use it extensively, but, maybe because of the attitudes of some local manufacturers towards others, any useful work is never credited and certainly the Facility comes in for scant praise.

For example, if an industrialist has a problem, he will ask for assistance, maybe act on the advice given, probably benefit from it, but almost never give credit to those who helped him. In fact he is more than likely to pour contempt on the Facility's capabilities in order to dissuade his associates from approaching this organization for similar help. In this way he feels he is then at an advantage compared to his associates or more correctly his competitors.

Fortunately the Facility staff are aware of this preaching of "no success", but this does not remove some degree of rancour which is natural after having worked on a project and getting no praise or satisfaction and knowing well that the recipient has improved his own profitability by virtue of the work done.

One of the factors influencing the minds of the industrialists is that they are financially successful. This makes the job of the Tech. Service department even more difficult when they are aware that bad practices are widespread, and ought to be eradicated if better and consistent quality is the aim. It is easy to suggest that since the manufacturer deals exclusively in monetary terms then the Facility's approach should be in terms of hard cash saved.

It is most difficult however, to get sufficient informations and so be able to present a convincing cost benefit argument, when dealing with a group of people who withhold costing and other financial data. It is more likely that the manufacturer will buy a costly piece of new machinery before he will spend a fraction of the amount on improving his internal systems or changing the method of working.

Technical assistance under these conditions is a hard line to sell. It is far easier to show cost benefits when the operation is on a large scale and small improvements are multiplied by the sheer size of operation, but unfortunately this is not the prevailing situation in Ludhiana.

### 6.3 Proposed Action on Technical Services and Consultancy

Between now and the next mission of the C.T.A., information on how other organizations tackle this problem needs to be collected. Fortunately the Technical Service Manager will be able to study organizations based overseas whilst on his Tour. Also the Technical Coordinator through his many contacts, will carry out a similar exercise, and together with the Technical Service Manager prepare data and ideas for future work.

The C.T.A. will analyse information from UNDP/UNIDO aided projects and, early in his next mission, carry out a survey alongwith members of the Project staff a chosen firm. Some preparatory work will need to be done with the firm in preparation for the visit. This has already been outlined with the two Managers mentioned.

The objective is to give the Company a Report on the areas where the Facility could help them, and to quantify the results. If the outcome is successful, follow up visits will be arranged to carry through the proposals, and the effect of the actions taken will be carefully monitored. If this approach bears fruit similar approaches will be made with other manufacturers and if those are successful the pattern may be repeated.

Wherever possible maximum publicity to the survey and its effects will be given.

## 7. INFORMATION CELL

The purpose of the Facility in this aspect is as follows:

- i) to collect information on topics of interest to the Facility staff and members of the industry.
- ii) to disseminate this information as appropriate to all parties involved.
- iii) to provide and maintain a Data Bank for use as a reference source by all parties involved.

### 7.1 Collection of Information

Resources generally are low and the job of collecting and compiling information is left to the Training Manager, and his background is not in Textiles.

Most information is collected via periodicals received.

The periodicals are usually late in arriving and are the main source of technical information. Although some of this information is out of date, the lateness is not of great significance. Other publications from a variety of sources provide some additional data.

### 7.2 Dissemination

At regular intervals the Information Officer/Training Manager collects together items of interests and taking advice from the other Managers, if necessary, he compiles and circulates a Newsletter to members of the industry.

Just how effective this is is difficult to judge. Also seminars and Training Courses are held as felt necessary to introduce or discuss various topics. In some cases these talks are held in conjunction with other organizations such as fibre manufacturers and I.W.S.

### 7.3 Data Bank

The present Data Bank is the Library where all publications are stored. This is the weakest part of the Information system, principally because it simply contains very little useful information.

It may seem to be a critical over simplification of the situation but it would appear that technical information is being processed for the benefit of recipients who either cannot, or do not understand its significance. Mention has been made elsewhere of the background and type of person which we label "industrialists". Many of them do not appreciate some of the information passed on to them and even cannot be bothered to read the Newsletter and openly admit it. Yet the Newsletter is the printed "Voice of the Facility".

But even if much falls on deaf ears a start has been made to organize a Cell and it is capable of being formalised to make it easier to operate, quicker to use and of more value. The various aspects of an information system are dealt with in turn in Appendix IV. This has been discussed with the Information Officer who will examine the proposals and implement as appropriate.

8. MAINTENANCE

Output No. 7 as set out in the Project Document cannot be realistically achieved. In the light of experience it was decided that this Output should be ammended as follows:

- an operational Preventive Maintenance Model Scheme for the machines and equipment installed in the Facility including trained staff for implementation and maintaining this scheme and capable of introducing Preventive Maintenance Schemes to industry for all new machinery to be installed.

A Routine Maintenance Scheme will therefore be operated at the Facility along appropriate lines.

The Chief Engineer has studied the Maintenance Expert's Report and has begun to implement a Routine Maintenance Scheme on the machinery at the Facility. The machinery was of course already being maintained but, as explained to the Chief Engineer, a Scheme is intended to simplify operations and allow them to be carried out with the minimum time spent on supervision. Time spent on initial work involving the detail of the maintenance jobs to be done on each machine, and some further routine clerical work will ensure that any Scheme will run smoothly and effectively. A Proposed Routine Maintenance is attached as Appendix III.

9. MARKETING

The entire subject of Marketing has been covered in other documents and was discussed at length during the T.P.R. so no further comments will be included here.

Provision had been made in the C.T.A. Work Plan (Appendix I) for discussions with Mr. Hyvarinen the selected Marketing Expert who was due to visit Ludhiana on another mission on 21 and 22 May. This visit was postponed until 28 May but did not in fact take place even then.

Due to this, no meetings were possible with Mr. Hyvarinen so the status of this input has not changed beyond the outcome of the T.P.R.

This topic still requires some clarification, because if the Project Management accept the proposed plan of action there is a job to be done. Who does this, and under what auspice, must be decided finally or delays will cause further frustration and tension between the Facility and the industry.

It is obviously imperative that a national counterpart to the Marketing expert is engaged, and this task is not being helped by the local situation in the Punjab.

#### 10. GOVERNMENT CONTRIBUTION

In the letter of 27 December 1983, the DEA indicates that it is well aware that the Project must become self-sustaining. It makes no suggestions as to how this state is to be achieved however.

Already the cost of providing the present level of service is proving to be burden and the root cause of many minor disturbances.

Provision of an adequate income to sustain and improve the Technical Service, Consultancy etc. require continuous subsidizing from other sources.

Plans to raise funds via Membership Fees will at best bring in only a fraction of the monies required for operation, hence the proposal to operate the Spinning Dept. as a revenue producing section.

During the TPR meeting on 29 May 1984, Mr. S.S. Bophari, Secretary of Industries of the Government of the State of Punjab and Chairman of the Meeting suggested that the National Project Director should work out a financial plan for submittance to the Board of the PSHC (cost/benefit projection).

It was also stressed that for the spinning unit about 10 million Rs. were needed as working capital.

Despite the concern expressed in this chapter, during the remaining lifetime of the project, ending December 1985 PSHC is certainly capable in assuring the financial resources needed for an adequate functioning of the Knitwear Facility in accordance with the objectives of the project.

## 11. RECOMMENDATIONS ON OUTPUTS

### Spinning:

Select and field the Expert as quickly as possible.  
(One candidate to be interviewed in U.K. by the C.T.A. during June 1984).

### Knitting:

Provide an Expert in Making-up techniques as quickly as possible. This position was discussed with Mr. Minke and N.P.D. after T.P.R. Meeting.

### Colour Matching:

Provide an Expert with qualifications as discussed with N.P.D. and Mr. Minke.

### Maintenance:

Redraft the output as agreed in T.P.R. Meeting to read:

"an operational Preventive Maintenance Model Scheme for the machines and equipment installed in the Facility including trained staff for implementation and maintaining this scheme and capable of introducing Preventive Maintenance Schemes to industry for all new machinery to be installed".

### Designing:

Ensure that Expert is available to be on station according to schedule prepared by N.P.D.

### Training:

Different interpretations of the output as written in the Project Document were possible. Actual correct interpretation was clarified at T.P.R. Meeting. This is in fact the interpretation already being implemented. Check if Training Expert is available for a further mission in late 1984, to review progress and/or initiate further action.

### Marketing:

The approach as outlined in Mr. Hussein's letter to Mr. Eršneva dated 9 March 1984 still applies (Phases I-III only). We should engage a marketing specialist to work out the details and appoint a national counterpart.

## 12. CONCLUSIONS

With a few exceptions the implementation of the Inputs is under control and although behind the original schedule time is being made up. Measures are being taken to finalize the selection of those Experts still outstanding.

The delay would have resulted in a bulge in the activities of the Project dangerously close to the projected ending date (Mid 1985). During the T.P.R. it was proposed to defer this date to End 1985 thus allowing some measure of consolidation before UNDP/UNIDO withdraw.

There is still some unease on the part of the industrialists towards the Facility, but the Facility staff are taking measures to step up their own P.R. activities. (See section 6).

Future funding to keep the Project viable after UNDP/UNIDO withdraw is now being given active attention and it seems that a workable solution will be found.

The Marketing role of the Project still requires some clarification. Past attempts by various organizations in this area have had limited success, but a proposal has been outlined to break down the present barriers and give some sections of the industry the help they desperately need.



APPENDIX I - WORKPLAN - C.T.A. (2nd Mission)

| Week No.                     | 15      | 16        | 17        | 18 | 19 | 20      | 21 | 22 | 23      |
|------------------------------|---------|-----------|-----------|----|----|---------|----|----|---------|
| Week Ending                  | 15/4/84 |           |           |    |    | 20/5/84 |    |    | 10/6/84 |
| Briefing                     | ←→      |           |           |    |    |         |    |    |         |
| Re-familiarization           |         | ←→        |           |    |    |         |    |    |         |
| Proj. Eval.                  |         | ←→        |           |    |    |         |    |    |         |
| Prep. for T.P.R.             |         |           | ←→        |    |    |         |    |    |         |
| Meetings with industrialists |         |           | - - - - - |    |    |         |    |    |         |
| Review of Training           |         |           |           |    | ←→ |         |    |    |         |
| Information Cell             |         |           |           |    | ←→ |         |    |    |         |
| Maintenance                  |         |           |           |    |    | ←→      |    |    |         |
| Erection of Machr.           |         | - - - - - |           |    |    |         |    |    |         |
| Review R + D                 |         |           |           |    |    |         | ←→ |    |         |
| Marketing Meeting            |         |           |           |    |    |         | ←→ |    |         |
| Review Circ. Knit.           |         |           |           |    |    |         | ←→ |    |         |
| P.A.C. and T.P.R.            |         |           |           |    |    |         |    | ←→ |         |
| Prepare Report               |         |           |           |    |    |         | ←→ |    |         |
| De-brief                     |         |           |           |    |    |         |    |    | ←→      |

APPENDIX II

Recommended list of Periodicals:

Canadian Textile Journal  
Colourage  
Cotton Times  
Indian Journal of Textile Research  
Indian Textile Journal  
Journal of the American Association of  
Textile Chemists and Colourists  
Journal of the Indian Society for  
Cotton Improvement  
Journal of the Textile Association  
JTN (formerly Japan Textile News)  
Knitting International  
Man-made Textiles in India  
Pakistan Textile  
Textile Asia  
Textile Chemist and Colourist  
Textile Dyer & Printer  
Textile Highlights  
Textile Machinery Accessories & Stores  
Textile Month  
Textile Organon  
Textile World  
Textiles  
Wool & Woollens of India

APPENDIX III

A PROPOSED PREVENTIVE MAINTENANCE SCHEME

The scheme involves the use of data sheets which are described below:

1. Machine Inventory

This document needs to be prepared to include a complete list of all the machinery on the plant. It must be updated as new machinery is acquired. Each machine should have a serial number (The method of numbering can be left to the C.E. to decide). Each entry in the inventory will give the function of the machine, name of supplier, location, etc. Each machine should have the Inventory number painted on it in a prominent position.

2. Machine Maintenance List

For each machine, detailed maintenance instructions should be prepared, indicating exactly what is to be done, how it is to be done and when it is to be done. This is intended as a reference book and should be filed with the Chief Engineer. Copies of the Maintenance lists may also be kept by appropriate Departmental Managers. These lists are usually based on the instructions supplied by manufacturers (with additions if needed) and translated into the working language if appropriate.

3. Routing Maintenance Sheets (R.M.S.'s)

Routine Maintenance is carried out at regular intervals say Daily, Weekly, Monthly, Yearly. For each machine, say the Air Compressor, a list of all those items to be checked say every week is taken from the Machine Maintenance List - (Compressor) and copied on to a Weekly R.M.S. - Air Compressor. In most cases the full instructions are not needed, particularly if the Maintenance Engineer is experienced. There is of course always the Machine Maintenance List for reference if required.

R.M.S.'s are compiled for each machine for Daily, Weekly, Monthly, 3 monthly, 6 Monthly and Yearly intervals. It is convenient if for each interval the instructions are typed on different coloured cards. Also it is useful if these cards, which are handled frequently by the Engineer, are kept in transparent folders to avoid soiling.

4. Special Maintenance Request/Breakdown Form

Any Departmental Manager may submit a request for additional maintenance for any of his machines. Justification has to be provided due to the element of cost evolved. For the sake of simplicity these forms should also act to initiate action in case of a Breakdown. Either the Manager or Chief Engineer can originate these requests, and they act as record sheets for the work involved.

5. Master Schedule

This is a Schedule Board which displays the status of Maintenance for all the machines. It is laid out in Week Number order and indicates (with colour-keyed markers if possible) when a Weekly or Monthly etc, check is due for all the machines. It is the document which ties together the entire system.

6. Maintenance History Sheet

A sheet is prepared for each machine and is updated each time any maintenance is carried out on that machine. The following details should be noted:

Date of action:

Special Request/Breakdown/Emergency/Daily/Weekly/Monthly/ etc....

Action Taken - Faults - Symptoms  
Time elapsed on maintenance check  
Materials used on maintenance check  
Signature of Maintenance Engineer  
Countersignature of C. Engineer  
Countersignature of Dept. Manager

From the information contained on this history sheet a cost of maintenance can easily be compiled for this machine and hence a Dept. Maintenance Cost can be computed. Also the economic level of spare parts can be established.

Modifications to the Routines can be adjusted to either increase the frequency of maintenance or reduce it depending on the needs.

7. Maintenance Routine

Having set up the records as described above the routine is very simple:

- 1) Maintenance Clerk notes from Master Schedule what machines are due for attention. He extracts the relevant R.M.S.'s from the file and makes them available to the Maintenance Engineers.
- ii) Maintenance Engineer carried out the work marking each job off on the transparent cover of the R.M.S. with an erasable marker.

- iii) Engineer then completes the History Sheets for all the machines he has examined and signs it. This is countersigned by the Chief Engineer who should verify that all the items on the R.M.S. have been dealt with. It should also be countersigned by the Departmental Manager concerned.
- iv) Maintenance clerk extracts any information required for the History Sheets. The History Sheet is updated, filed and the R.M.S. wiped clean and filed for future use. He then updates the Master Schedule, noting all relevant details and marking the Schedule with coloured markers according to some key e.g.:

| <u>MARKER COLOUR</u> | <u>COMMENTS</u>       |
|----------------------|-----------------------|
| 1.                   | Awaiting spares.      |
| 2.                   | Maintenance complete. |
| 3.                   | Breakdown reported.   |
| 4.                   | Special request.      |
| 5.                   | M/C not operating.    |
| '                    | '                     |
| '                    | '                     |
| '                    | '                     |

At any time the Master Schedule gives a daily status of all the machinery. It indicates when each machine is due for maintenance, when it was last maintained, if any breakdowns have occurred and when and if any machines are awaiting spares etc.

Planned shut-downs can more easily be planned with those Departmental Managers concerned, to minimize the disturbance to work flow.

In those Departments which have specialist machinery requiring specific detailed maintenance, it will probably be more advantageous for the frequent maintenance (Daily and Weekly) to be carried out by the Departmental staff. This will usually cover cleaning and lubrication, and generally if operators are involved in maintaining their machines they get a better appreciation of the machines, and take more care when using them. The Chief Engineer should agree the areas of responsibility for maintenance with each departmental Manager concerned.

One of the main reasons for introducing a Routine Maintenance Scheme at the Facility is for it to act as a demonstration unit to encourage the local industrialists to adopt similar systems. Most of the machinery at the Facility will not be run as continuously as similar machinery in industrial plants so there is an element of over-kill built into the proposed scheme. Because it is to act as a demonstration unit, it is therefore essential that any Departmental Schemes are designed along the same lines as the Scheme proposed for the whole plant.

It is essential that regular reports on Maintenance are prepared and submitted by the Chief Engineer to the Project Management. The dates for the submission of these reports should be agreed and noted on the Masters Schedule. Having most of the details to hand and easily retrievable makes the formulation of these Reports relatively easy. Also if the Departmental Manager follow a similar routine, all the Reports can easily be consolidated to give a total picture for the whole Facility.

APPENDIX IV

A PROPOSED INFORMATION SYSTEM

i. Collection of Information

1.1 Sources

Because of the long delays in the arrival of periodicals there must be no added delay in processing the information contained therein. This is dealt with later; also some sources will need to be added. The Periodicals deal with general technical topics and in some instances the articles do not provide sufficient depth say for a person doing some particular item of research. It is therefore essential to provide extra sources of technical information, and these are available from a variety of sources usually at some cost.

The most comprehensive publication is the World Textile Abstracts (W.T.A.) it costs £ 166.00 per annum and is delivered every two weeks. There is also an Annual Index to give access to past literature. Examples of both have been lodged with the Information Officer, The Abstracts give digests in English of Scientific, technical and techno-economic literature of the World relevant to fibre-forming polymers, the textile and related industries and the application of fibres and textile materials in conventional textile products and in various branches of engineering and elsewhere.

The classifications include Fibres, yarns, fabrics, chemical processing, products, management, analysis. Within one classification say "Products, Manufacture, Properties, Aftercare" are subdivisions

- a) General (clothing, medical textiles, household fabrics, industrial fabrics, fibre- and textile-reinforced materials)
  - b) Making-up (laying, cutting, sewing)
  - c) Labelling and packaging
  - d) Laundering and drycleaning
- Patents

There then follows a series of Abstracts of about 10-15 lines each, giving a summary of the article referred to and the source. It is not likely that the Facility will need such detailed information on a wide scale but it should be aware it exists. There is also a Monthly publication "Textile Digest" which is extracted from W.T.A. but does not include polymer science, fundamental textile science, laundering and drycleaning and patents. A sample copy is with the Information Officer.

In addition it is possible to use the very elaborate information retrieval systems operated by various institutions. These make use of information data banks held in London and California and are accessed via computer terminals. These banks also include other topics besides textiles. Such systems are well outside the scope of the Facility but it is useful to know of their existence. All of the institutions who sell an information service operate mailing or photocopying service also.

On a completely different level Shirley Institute of Manchester publish a journal called "Textiles" 3 times per year. It presents a wide range of topics of general interest and has become very popular magazine because of its ease of readability. A copy is with the Information Officer.

The above covers the technical and general aspects of information sources with the exception of Publications which will be dealt with later. As far as fashion and colour information is concerned there are many organizations who offer this service at a price. The Design Expert will be better able to suggest sources but all the leading fibre manufacturers, the I.W.S., the International Institute for Cotton and some yarn suppliers offer trend guides; notably for knitwear. Additionally independent design services produce a wide variety of information in an equally varied range of packages. These are usually based in the major cities and some offer commissions for individual manufacturers.

The situation is changing continuously as firms spring up, flourish and die, but apart from an awareness of their existence such services are not likely to be of use to the Facility. Again some Publications covering colour and design in knitweaves will be listed later and the Design Expert will be able to give further examples.



- SPECIMEN -

INFORMATION COLLECTION

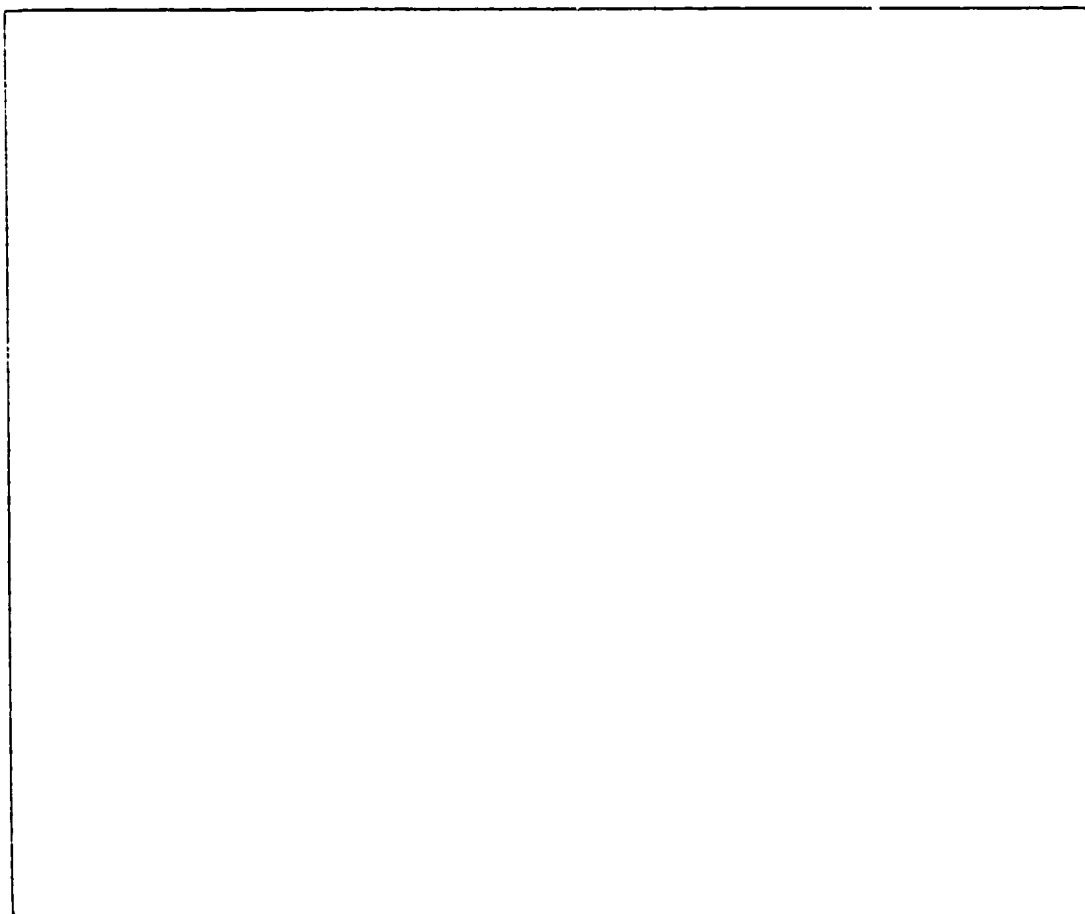
To: ..... Manager

Dear Mr. ....

Please read the item(s) listed below and prepare a short review  
by ..... (Date) .....

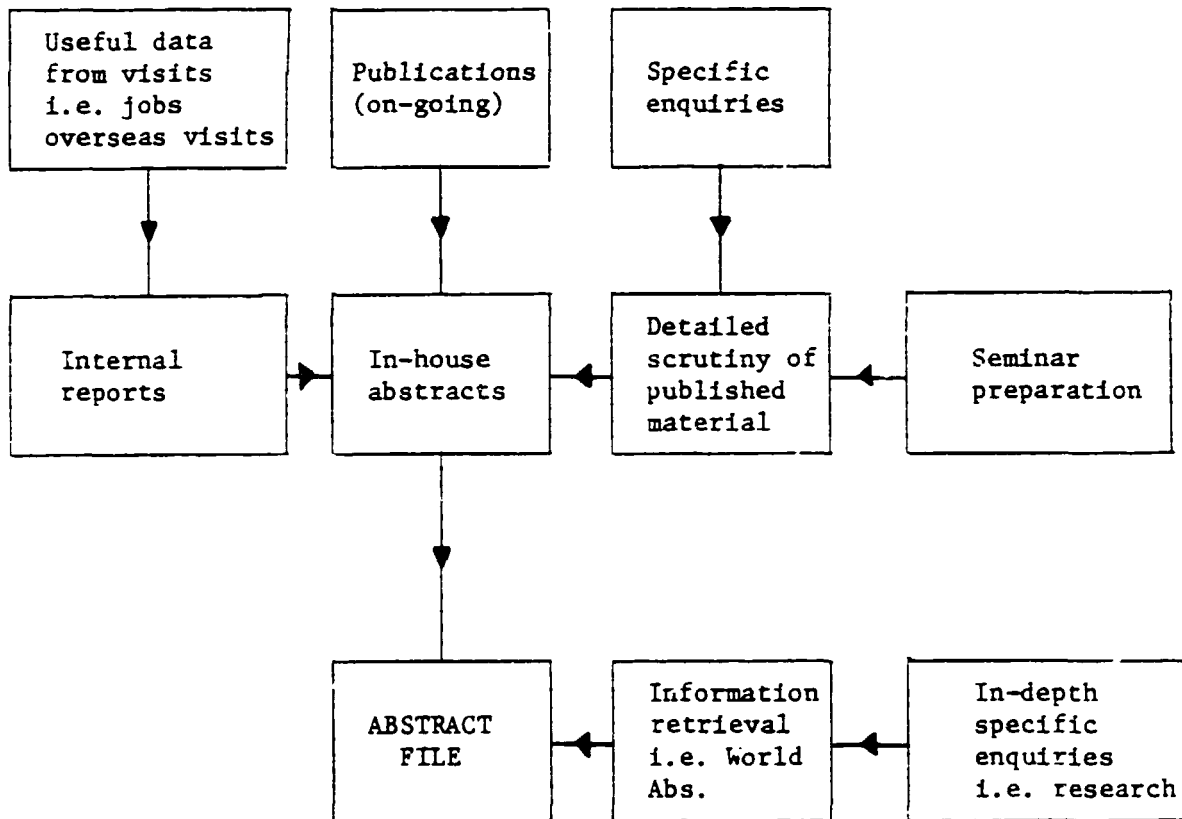
Publication:- Textile Research Journal No. 14

1. Effect of twist on spirality of woollen fabrics p. 149-52
2. Some novel effects with wrap-spun yarns p. 200



cc: Tech. Service Manager

INFORMATION CELL - SCHEMATIC



1.2 Proposed Routine for Collection of Information

This is similar to the routine already in operation but because it is more formalized it can be more easily controlled and used for retrieval of information.

- i) Periodicals, books, leaflets, etc. arrive at Information Officer.
- ii) Information Officer (I.O.) speedily scans the issue and selects likely items for issue.
- iii) I.O. makes out an Abstract Sheet (See example) for each item selected and requests the respective Managers to write a brief note on his topic. The above should be done on the same day or within 2 days after the information arrives.
- iv) Allowing 3 days maximum for processing, the Abstract Sheets are collected and compiled (if used) into the Newsletter.
- v) The I.O. prior to circulating the publication will attach a top sheet asking each Manager to suggest any further items in that publication he thinks would be useful either for abstracting or publishing in future Newsletters.
- vi) After use these In-house abstracts are filed in the Library in subject order.

In order to unify the system other enquiries for information made during particular research work, work for clients, preparations for seminars, etc. should all be abstracted and filed - See schematic.

2. Dissemination of Information

The major channel for dissemination of information is the Newsletter and it is likely to remain so for the foreseeable future. It can and should be made more readable by increasing the content to include anything of interest to the readers who, as already noted, are far from "bookish" individuals. The style should be more chatty and less formal. It is recommended that a similar style as used in the publication "Textiles" is adopted and wherever possible promotion of the Facility, its work, and what it can offer should be emphasized. Any new books or periodicals can be mentioned and encouragement to visit the Facility and use the services including the Library and Information Service should be the underlying theme. Obviously as the work of the Facility expands the publication of the Newsletter will become easier and more comprehensive.

Its potential as a Public Relations Vehicle must be realized and since it is the only "output" for many industrialists it must be of good quality and interesting.

Presentation is most important and the Facility will need to improve its capabilities for copying and presenting documents like this.

Other means of dissemination such as seminars and Discussion Groups are already being dealt with. It is always a benefit if the participants feel that they have learned something to their advantage and before launching seminars, etc. the Managers should be allowed a preview where mutual constructive criticism can only make the show better and thus more interesting for the participants and thus more likely to be successful. The criterion should be "Interesting People Communicating with Interested People". One final general comment is that much work needs to be done on the Public Relations aspect at the Facility and due credit and emphasis must be given to all these promotional outlets.

### 3. Data Bank

The Library presently is grossly under provided. Many more books and periodicals should be displayed. Sophisticated machinery has been installed in the Facility at great cost whilst a few thousand dollars spent on a better library service has the potential to reach a far wider audience. Basic textbooks are not available and as a starting point approximately 1000 titles have been provided to the Information Officer covering all aspects of textiles in book form and as Periodicals. All Managers should examine these comprehensive lists and make proposals for purchase or subscription. In time, as the scope of the Facility's work grows, other disciplines e.g. management techniques, financial works, etc. will need to be added.

Members of the industry should have access to the Library and its facilities, and a better system of control will have to be re-introduced over the withdrawal and borrowing of documents.

APPENDIX V

STATUS OF OBJECTIVES\*

Immediate Objective i)a)

Imparting technical know-how to adopt modern worsted spinning techniques and produce worsted type yarns meeting internationally adopted Uster quality parameters.

Status of i)a)

Modern Preparatory machinery and Spinning machinery is under erection at the present time although behind the original schedule by about 6 months due to a slow start in construction of the building. The Spinning Master has undertaken a Study Tour and the choice of the Worsted Spinning Expert still has to be finalized. He is due to undertake his assignment Mid-end 1984. Upto the present time therefore all the efforts in this aspect have been towards providing buildings, machinery and training of national staff (supervisors and future operators are helping with the erection and commissioning). So this aspect is still not matured. It can only be judged in a true light after the Expert has completed his assignment and all the department is in full operation. No comments can be made on the quality standard of any yarn still to be produced but all the inputs (with the exception of the Expert) have been provided and there is every indication that the outcome will be satisfactory.

The Laboratory is already equipped to check yarn quality and ensure that it meets the quality standards laid down.

Summary

Solid progress so far. Extra efforts during past few weeks has improved the possible starting date. Expert still to be selected. Prospects good.

Immediate Objectives i)b) and c)

Imparting technical know-how; b) for appropriate knitting, dyeing and finishing relative to the requirements of manufacturing of knitwear garments of dimensional stability; c) to produce knitwear of dimensional stability in particular to meet IWS standard of wool materials and equivalent standards of other materials.

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\* The Immediate Objectives listed in the Project Document are basically outputs and even partly activities. The outputs are to be further defined in order to become a better tool for assessing progress of the project.

Status of 1)b) and c)

Manufacture of dimensionally stable knitwear depends initially on the knitting process. To date the Knitting Department has been subjected to a great deal of involvement with one Expert in Flat-bed technology, one Expert in Circular Knitting technology, several machinery erectors, a Knitting Technician and involvement with a demonstration of a high-tech. knitting machine. This section has had a massive concentration of attention and, according to both Experts, the staff have responded extremely well and can produce fabric and garments well up to international standards. This knowledge is being imparted to the industry on an increasing scale.

There is no machinery for piece dyeing of fabric thus the dyeing undertaken is restricted to yarns. No yarns are yet produced in-house so there is no control over the quality and grade of the component fibres. Once yarns are produced at the Facility then the situation in dyeing will become regularized. Wet finishing of garments is a relatively straight forward routine if the fabric is stable and there are no major problems in this area.

Making-up finishing techniques are not as satisfactory. The industry in general is let down by this section and will need further attention. These techniques at the project are much above the norm but need extra assistance. It was only with experience and discussions with Experts that this deficiency came to light, so it is recommended that a Making-up Expert is fielded to improve this capability and bring it to the level of the rest of the department.

Summary

With the exception of Making-up aspect this objective has been successfully completed.

Immediate Objective ii)

Developing technological and practical procedures in dye recipe formulations for indigenous dyes and chemicals.

Status of ii)

The choice of the Colour Matching Expert still has to be finalized although the basic work of compiling a data bank for the colour matching computer is underway. Local dyestuffs are being tested alongwith international samples. This is a time consuming job but all the ground work is being prepared.

Summary

With a suitably qualified Expert the staff will be very well able to meet this Objective.

Immediate Objectives iii)

Specifying levels of maintenance standards in all sectors of the industry.

Status of iii)

Close examination of the industry reveals that a vast proportion of the machinery is old and, to be realistic, breakdown maintenance, which is the system most immediately used, is probably the most appropriate. It was decided therefore, that to demonstrate how to operate a Preventive Maintenance Scheme the Project should install and run such a system. Then, as new machinery is introduced into the industry, a model system is available for all to examine and assistance can be given to specify standards for maintaining this machinery and demonstrate the cost benefits. This system is being introduced at the Facility and is being implemented progressively throughout all departments.

Summary

The Objective set out in the Project Document cannot be realistically achieved and should be modified in the light of experience gained.

Immediate Objectives iv)

Creating within the Facility a unit as a nucleus for designing assistance and prototype development of knitwears for the industry.

Status of iv)

Prototype development has been undertaken by the Facility for some 9 to 12 months. With increasing experience and under the guidance of various Experts the quality of samples has measurably improved. Two Designers are on Fellowships and are due to return Mid 1984. Their expertise will enhance the capability of the Knitting Department in this area. To date industrialists can only get limited style and colour advice from the Facility. Additionally during the period End 1984 and Mid 1985 a Design Expert will be fielded to coach, guide and actually work alongside the national counterparts to provide this output.

Summary

This Objective has only partially been fulfilled. Indications are that when the Designers are on station and an Expert has been fielded it will be completed. A cautionary note; designs are changing all the time so provision must be made to allow for regular updates for the Design Staff.

Immediate Objectives v)

Improving training capabilities of the Facility to meet training requirements of the industry to reach specified quality levels.

Status of v)

One Expert has completed the initial part of the Training assignment. His observations led the Project management to examine the interpretation of this objective as it is stated in the Project Document.

It became clear that the breadth of training contemplated by the Project initially, was too ambitious in relation to the resources available.

The emphasis was thus clearly focused on improving the levels of skill within the Project staff to enable them to impart their knowledge more effectively.

Summary

Because the industry is diffuse total training requirements are beyond the resources of this project. The objectives should be re-defined in more specific terms in the light of experience gained. Work is underway on the training of Project staff as Trainers.

N.B.: This point was clarified at T.P.R. Present interpretation being implemented is correct one.

Immediate Objectives vi)

Establishing a cell for disseminating information on new technological developments and results of practical work done for the industry.

Status of vi)

The Information Cell which is already operating is currently being examined and recommendations will be made to improve its effectiveness.

Sources of information are being increased and the present system will be tightened to allow better retrieval.

Summary

Additional effort is currently being made to improve this Facility to the level where it can fulfil the objective completely.



Immediate Objectives vii)

Creating a cell to stimulate drives for export of Indian knitwear to sophisticated markets.

Status of vii)

The Marketing Expert has been selected and is due Mid/End 1984. Of all the aspects of the Immediate Objective this one is proving the most difficult to fulfil and in fact it now seems that the original Marketing Objective was too limited in scope to be effective. It has been examined closely during the past nine months, and whilst there is more awareness in the industry of the need to penetrate GCA markets it is now obvious that the industry will need much more help and advice than the statement in the Project Document implies. Basically, as written and initially understood, the Marketing Cell would provide information and have a limited role in the drive for exports. Experience indicates that the industrialists need assistance in Marketing and realise this fact. They see this need more acutely than the need to improve their technical abilities to the extent that before they will make full use of the Knitwear Facility as a technical centre they are asking for help in Marketing. Because there is ample business elsewhere there is little drive to enter GCA markets although the industrialists realise the danger of too narrow a market base. With the extra impact which the Project could provide in the area of Marketing a major step towards the Development Objective could be achieved to the greater benefit of the other aspects of the Project.

Summary

The scope of the Marketing aspect of the Project should be examined closely and redefined with a wider scope taking into consideration the findings and recommendations of the Marketing Expert, when these are available.

APPENDIX VI

SUMMARY OF STATUS OF INPUTS

Only a Summary of the Status of Inputs is included here since most topics have been dealt with elsewhere and all were discussed in detail during the Tripartite Meeting held in Ludhiana on 30 May.

1. Buildings:

Initial delays are being minimized by extra efforts. Apart from S/R building (See N.P.D.'s Report) all civil works are sufficiently advanced to give no cause for concern.

2. National Staff:

Overall standard is good and according to Experts fielded they have responded well. Two areas not included in the above statement are Worsted Spinning - where the machinery erection is still underway, and Marketing where a new staff member is being appointed. In neither of these two latter categories have the Experts been fielded, both are due Mid/End 1984.

3. Worsted Spinning:

Plant still under erection. Successful output likely.

4. Knitting:

Now a most responsive and technically competent Department.

5. Sample Production:

As 4. above.

6. Colour Matching:

Preliminary work going ahead. Expert still to be selected. Required as soon as possible.

7. Maintenance:

Work in hand, successful outcome likely.

8. Training Courses:

See Activity Report of T.P.R. Meeting.

9. Technician Training:

See Activity Report of T.P.R. Meeting.

10. Information Cell:

Initial work started. To be monitored later.  
Likely to achieve success.

11. Marketing:

See comments under 2. above. Change of emphasis also needed  
for this objective.

12. Joint Studies:

See Activity Report of T.P.R. Meeting.

