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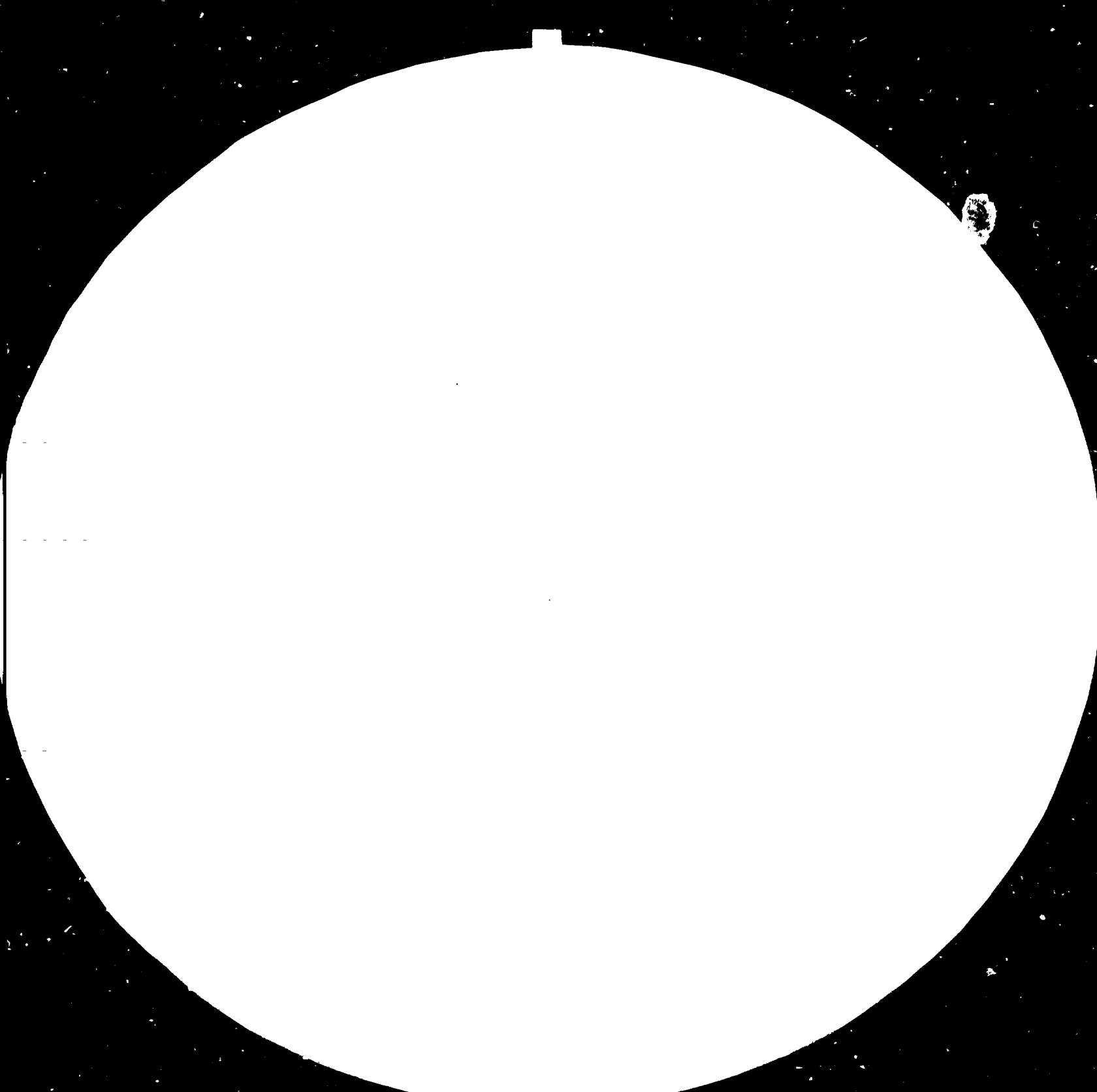
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12 March 1984  
ENGLISH

DEVELOPMENT OF HOSIERY AND KNITWEAR INDUSTRY,  
LUDHIANA, PUNJAB (PHASE II)

DP/IND/82/C06

INDIA

Technical Report: Recommendations on Training of Trainers  
for the Punjab Knitwear Facility\*

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 J.A. Smith  
Training Specialist

United Nations Industrial Development Organization  
Vienna

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## 1. INTRODUCTION

The six weeks Assignment being four weeks in the field is to:

- review Industry's training needs
- assist management of the Facility in the preparation of training programme commensurate with Industry's requirements and Facility's resources. See Appendix 2.

Overall objectives for the Project apply and are as stated in the first and second Project Documents.

These objectives are as follows:

- expansion of short term training courses of three to four days duration suitable for middle level management on specific subjects.
- yarn quality improvements
- yarn treatment
- finishing of garments
- yarn selection in relation to machine gauge and fashion trends
- expanding intensive training programmes for 6-8 weeks duration for operatives in different sections
- compilation of suitable information of immediate interest to the industry and suggesting improvements to individual units
- preparation of visual aids for educational purposes.

The second Project Documents states:

"Improving training capabilities of the Facility to meet specified quality levels."

The Facility has organised seminars and short training courses since January 20th, 1982. See Appendix 1.

Seminars have been the main input but have not produced desired results. It was expected that Industry would become sufficiently quality conscious to enter hard currency export markets with the assistance of the Facility. Knitwear manufacturers have not responded to this improved quality requirement since all products readily find a local market or, are exported to USSR where quality demands seem not so stringent. Few, if any, manufacturers are persuaded to make the necessary upgrading to the quality of knitwear, which entails using yarns of an international quality standard.

It is against this background that the Facility's resources have struggled to educate Industry to improve quality of knitted garments. Seminars have not sufficiently convinced Industry to upgrade yarn quality standards.

Successful training courses have been executed where manufacturers have needed to meet the criteria of the woolmark standard. Unfortunately there is no reference to yarn quality in this criteria and poor yarns continue to be made into garments, notwithstanding the woolmark.

The woolmark has local benefits since consumers are attracted to buy garments labelled accordingly. Therefore, there are immediate advantages to knitwear manufacturers receiving woolmark licenses. It is not surprising therefore, to find training courses have been comparatively successful in this respect.

It is recognised that training ought to be more successful in promoting higher quality yarns but little response is forthcoming

from Industry. Industry need not attend to upgrading yarn whilst there is a comfortable home and export market that makes little demands on quality. Conversely, products need upgrading to international standards since the present position may not continue indefinitely.

If this is so, the Facility's present resources will not meet the demands of future training programmes. The Facility is limited to the organisation of seminars and talks because no manager is trained to train skills. Facility staff appear competent in their respective areas of technical expertise but without training know-how it is unlikely they will be successful trainers.



## 2. CONCLUSION

The present standard of knitwear quality satisfies consumer demand, although this level of quality is not sufficient to export products to world hard currency markets, ie. Europe or U.S.A. The standard of yarn quality is one reason, but there are also other reasons, such as poor styling and low output of fully fashioned wear. The Facility exists to promote such improvements by the implementation of Project Objectives.

Fifty percent of Project Objectives are concerned with training but present activities do not reflect this. At this time, management seminars form the bulk of the training input from the Facility to Industry, whereas extended training, exercised on urgent industrial problems, such as yarn regularity/quality control, should be organised. Training should therefore, follow priorities which relate to problems of the Industry.

The content of training inputs ought to provide skills at the artisan level, reflecting those ideas for which the Facility stands. A considerable part of this training should use hands-on methods in the workplace. It is not sufficient to inform industry what to do, it must be shown how, by the various Dept Managers organising suitable programmes. The Managers should be supported by the Training Officer in these efforts.

The length of the assignment was insufficient to establish the proper working of the Facility's training organisation. The immediate development of the training function is with the Facility's Management, and is described in the recommendations of this report. See Chapter 10.

### 3. TRAINING NEEDS OF INDUSTRY

The following steps are normally taken to determine training needs:

- conduct interviews with relevant individuals to seek opinion regarding problem areas to which training provides an answer.
- observe problem areas to quantify opinions and establish priorities.

Due to the short-time in the field it was not possible to do a thorough review of training needs. Quantification of training needs has not been done, since it was not possible to spend lengthy periods in any one factory, or any one sector. Of the following sectors only knitting, garment making and spinning establishments were visited:

- top makers
- spinners
- knitters
- garment makers
- finishers
- dyers

Interviews were conducted knowing some training needs had previously been identified (See Project Documents). Checks were done to verify whether these had changed, or might change in the foreseeable future, ie. the next twelve months. Industrial units visited are listed in Appendix 3.

As well as interviews done in industry others were conducted with Facility Managers to determine:

- current needs
- future needs
- priority needs

Whilst no dyeing establishments were visited, useful information was provided through the Facility concerning this sector of industry.

The Knitwear makers were visited to verify yarn quality problems and a full diagnosis was not done into skill requirements. No knitwear manager considered any form of training was required for operatives.

Approximately ninety percent of workers in the Industry are contracted to work on a self-employed basis and the responsibility for training is with the worker, not the company to which he is contracted. No statement of training needs was, therefore, elicited from knitwear makers. No one thought operative knitters were difficult to recruit at present levels of production. One manufacturer was of the opinion that increased demand could produce a shortage of skilled operatives.

The types of dye stuff and methods of dyeing are sufficient to meet present circumstances but like yarn quality, industrial facilities are inadequate for quality markets. Improvements and consequential training is in the areas of:

- dye stuff upgrading
- colour matching
- dyehouse equipment upgrading
- methos of dyeing

Colour fast dyeing is expensive and not cost effective for local and present export markets. Equipment upgrading and training will only be necessary when new markets in hard currency areas are sought.

The most overwhelming problem for training relates to yarn quality. Long, medium and short term count variation is the present norm. This is compounded by excessive yarn imperfections. The cause of this low quality is due to:

- material selection

- machine capability
- market conditions

#### Material Selection

Due to economic constraints and lack of quality consciousness, various lengths and fineness of fibres are blended before spinning. Fibres which are shorter and coarser than the majority migrate to the surface of the yarn. Many of these are lost during the process and others, remaining on the surface, cause the problem of pilling in garments.

#### Machine Capability

As already known, machines are obsolete and technically inappropriate for spinning the desired quality of yarn needed for garment exports. Machine efficiencies are lower than need be and if regular maintenance programmes are performed, to already defined procedures, it will benefit not only quality, but improve profitability. Quality improvement in ring spun yarn will cause spinning productivity to increase.

For this reason spinners might be asked to participate in a machine and mechanic skill upgrading programme. Previously, yarn quality has been the reason to upgrade and a fresh approach in this, or other direction is desirable. One approach should be that the Facility will provide hands-on expertise from its managers to effect selected improvements in yarn quality.

Some essential pieces of yarn testing equipment are needed. Few, if any, spinners have test equipment to measure yarn quality standards, especially to the international standards. Some tests are made at the Facility but this must only be seen as a temporary arrangement and no substitute for a daily test and correct routine necessary for quality spinning.

Market Conditions

The markets currently supplied do not require improvements in quality and from this point-of-view associated training needs are minimal. Certainly the Facility's resources might not be needed, if only local, and Russian export markets had to be maintained. This export market is unlikely to last indefinitely and, because a great deal of knitwear is sent here, it must be cause for concern if, and when, it is no longer available. At such a time, other export markets will be needed but the quality, as maintained at present, could prevent this possibility. It is vital that yarn quality is upgraded and associated training done.

#### 4. TRAINING NEEDS OF THE FACILITY

A technique used to determine training needs for a job, is to develop, from a persons job description, details of skills and knowledge. These are then compared with skills and knowledge of the person concerned. If there is a shortfall here, then training is needed to equip that person for work. This assumes prerequisite skills and knowledge are present.

The requirement of a job description is desirable to determine individual training needs. Without such a document, duties, skills and knowledge elements of work, are not clear. In this case it is difficult to ascertain precisely what training, if any, is therefore required.

Facility staff have no job descriptions and those descriptions at hand need updating.

Training needs were determined through out-of-date job descriptions, project objectives, opinions of individual managers and their boss, the Technical Co-ordinator.

Among other duties, managers are required to train. Who from industry should be trained is not completely defined, but will include supervisors and middle level managers from all sectors. High level managers who have attended past seminars in small numbers would continue to be invited to future programmes. Hopefully, methods of improving attendances will be applied.

Facility managers are required to perform direct training duties. As none of the managers have skills in this area it was, therefore, decided to provide training during the Assignment. Normally, a basic trainer's course is for ten days, but this time was not available and an appreciation course of two days training was provided. (See Appendix 5.) The objective of training was to have Facility managers prepare a programme of training for their own sector by the

application of systematic training techniques. Managers were instructed in:

- the role of the trainer
- establishing training needs
- job, skill analysis
- preparing and presenting a talk
- preparing and presenting a demonstration
- learning theory
- making a training programme

More indepth trainer training is required for managers. The question of other Facility staff required to undertake training and demonstrations should be examined, since managers are unlikely to do all training themselves.

5. TRAINER TRAINING FOR FACILITY MANAGERS (See Appendix 5)

Facility resources and training needs were examined and this showed that managers urgently needed training in trainer skills. A programme of trainer training was implemented for two days to provide an appreciation of techniques by instructing how to make a training programme.

The preparation necessary for the trainer programme took four days during which time over fifty pages of hand-outs were made. (See Appendix 4.)



Two Day Programme for Trainer Training

TOPIC	OBJECTIVE	DURATION
INTRODUCTION	To explain programme	30 minutes
THE ROLE OF THE TRAINER	To explain the scope of the Trainers Job	15 minutes
ESTABLISHMENT OF TRAINING NEEDS	To explain how Industry's problem may be quantified in terms of training	30 minutes
PARTS METHOD OF LEARNING	To explain the step-by-step idea	15 minutes
JOB SKILL ANALYSIS	To explain how training elements are made	15 minutes
JOB BREAKDOWN	To give practice in Job Analysis	1 hour
TARGETS	To show how objectives are used	15 minutes
THE LEARNING CURVE	To explain the learning phase characteristics	1 hour
THE TALK	To give a talk to pre-defined rules	2 hours
SAFETY AND INDUCTION	To explain how accidents may be reduced and how to introduce trainees to new operations	30 minutes
THE DEMONSTRATION	Participants give demonstration	2 hours
PROGRAMMING	Participants make programme	2 hours
EVALUATION	Participants complete form	30 minutes

This programme is an appreciation of techniques used. It is considered more theory and practice is needed over a period of 14 days x 6 hours.

It is possible the Advance Training Institute based in Ludhiana can provide this extended training. However, this would not give the course a knitwear bias which might be desirable.

## 6. EVALUATION OF PAST ACTIVITY

Seminars and talks have been the major technique used in training at the Facility. Knowledge is given and however well received, it is an in-adequate tool without associated skill training.

Seminars have been attended by factory managers who do not need skill training but somewhere in their organisations are the mechanics and artisans who do. Seminars have reviewed problems, put more light on problems and made Industry thoroughly informed of its problems. This is a necessary step on the way to helping Industry. Help should not stop at this stage, it needs a better conclusion. Perhaps the steps can be followed as detailed in chapter 9.

The Project has no identified priority, all objectives apparently hold the same weight as far as training is concerned. Having said this many persons interviewed were of the opinion that yarn quality improvement was the first priority. If this were accepted, the Facility would adopt more training courses in this area. The Facility might also need to sell these courses using person-to person contact with Industry. A great advantage here is that most knitwear manufacturers are based in Ludhiana and there is no strong reason why personal contacts cannot be made by the respective Departments of the Facility. This tends to assume each Department has its own priority. For practical reasons this should be the case, each Department's priority being pursued accordingly.

### 7. INFORMATION CELL

There has been little time to cover this subject fully but the following points are given as an aside to the main activities of this assignment.

The content of Newsletters give an excellent account of activity at the Facility and further development might consider issuing a forward programme with dates. This idea might be developed so registration forms for courses are supplied with Newsletters.

Information Bulletins have not been studied sufficiently to allow conclusions to be made. Further study is needed and may proceed along the following lines, to review:

- publication of technical improvement and modification etc. from home and abroad
- selective mailing of various papers according to company activity
- publication of innovations brought about through improvement/  
training activity of the Facility
- timing of Bulletin issue
- methods of preparation

Library resources appear inadequate and further study is needed here. The British Council have a policy of supplying books of the kind required. This might be followed-up at a later date.

### 8. AIDS AND EQUIPMENT

If each Department is to do training then it needs certain basic aids. The following should be considered for purchasing:

- large wall mounted blackboard in each Department
- classroom/instruction area for each Department

In support of the main training activity the following items are available at the Facility:

- tutor machine
- overhead projector
- film projector
- slide projector
- camera
- main auditorium
- central training room
- small blackboard (portable)

Further equipment could be used -

- an epidiascope.
- a tape recorder.

The central training room is used as an office at the present time and thought may be given to dividing its space, for use as an instruction area near to the plant. This may then be used by one or two of the Departments, although interference from one class to another will be a problem unless soundproofing is adequate.

9. SCHEME FOR IMPROVING YARN QUALITY

1. Select 4 to 5 pilot projects, in companies where improvements are sought.
2. Quantify yarn faults by cause.
3. List priority causes according to faults.
4. Improve condition according to greatest priority cause.
5. Produce sample yarn and compare with unimproved sample.
6. Quantify improvement in terms of quality and productivity.
7. Express a cash value for improvements.
8. Train plant personnel to make and maintain improvements.
9. Organise seminars, talks etc. to broadcast pilot activities.
10. Do further training as necessary.

This procedure is adaptable to other sectors and operations.

10. RECOMMENDATIONS

1. After time spent with the Training Officer and the Managers the training section has now been upgraded to carry on the training programmes in a well organised manner, provided the technical managers who are busy with other activities are spared to devote the requisite time to conduct specialised training. For this the Project authorities have to decide about priorities and time to be made available out of the total job description of the managers for the purpose.
2. Now that the process for assessing training needs in different areas of the industry has been set rolling, the same could be quantified by the end of October, 1984.
3. The trainers i.e. Sectional Managers have to be trained in the methodology for conducting training programmes. For this purpose, a short course was conducted, in the appreciation of training techniques and also a visit made with the Managing Director and the Project Co-Ordinator to the Advanced Training Institute, Ludhiana which is fully equipped to conduct training of trainers in Pedagogy. It is recommended that full advantage of this institute be taken to train the trainers.
4. Even though other objectives of the Project have been fully identified and defined there is need to define the training objectives to be achieved in each of the operations priorities fixed and given to each manager by November, 1984.
5. Once the training status for micro-level training (needs) have been assessed by October, 1984 training activities of the Project should be re-arranged and focussed on those areas to improve the capability of the industry.

APPENDIX I

TRAINING RECORDS

DATE	SUBJECT	METHOD	NO. ATTENDING
20.1.82	MARKETING CONCEPTS & FUNCTIONS	TALK	21
29.1.82	SEWING MACHINE EXHIBITION & DEMONSTRATION	"	32
9.2.82	WOOLMARK TRAINING PROGRAMME	DEMO	29
13.2.82	DYEING OF WOOL KNITWEAR	TALK	35
12.4.82	KNITTING TRAINING PROGRAMME	DEMO	5
20.5.82	INTERNATIONAL MARKETING OF WOOL KNITWEAR	SYMPOSIUM	71
22.5.82	WOOLMARK TRAINING PROGRAMME	DEMO	23
24.5.82	" " "	"	20
19.6.82	JOB EFFECTIVENESS IMPROVEMENT OF QUALITY CONTROL IN KNITTING AND ALLIED INDUSTRIES	TALK "	15 48
9.7.82	I.W.F.O. FASHION FORECAST GARMENTS COLLECTION	DEMO	22
12.7.82	EXHIBITION OF I.W.S. GARMENT DESIGNS	-	15
30.8.82	PILLING ITS CAUSES AND REMEDIES	DEMO	23
31.8.82	EFFECT OF POST SPINNING PROCESSES AND YARN CHARACTERISTIC ON THE KNITTING PERFORMANCE AND KNITWEAR QUALITY	"	12
9.9.82	AQUEOUS FINISHING OF BOTANY WOOL KNITTED GARMENTS	"	20
17.9.82	THE ROLE OF THE SUPERVISING MANAGER	TALK	10

DATE	SUBJECT	METHOD	NO. ATTENDING
7.10.82	HIGH PILE KNITTING	TALK	15
16.10.82	MACHINE MAINTENANCE	"	34
6.11.82	APPLICATION & SELECTION OF DYES	DEMO	12
7.2.83	RECIPE FORMULATION AND SHADE MATCHING	"	4
3.3.83	PRINTING OF WOOL KNITWEAR	"	45
12.4.83	MACHINE SYSTEMS FOR PRODUCTION OF WORSTED YARN	SYMPOSIUM	38
30.4.83	EXPORT MARKETING	TALK	15
31.5.83	I.W.S. KNITWEAR COLLECTION FOR SPRING AND SUMMER 1984	VIDEO	21
7.6.83	ACRYLIC FIBRE FOR KNITTING	SYMPOSIUM	70
5.7.83	WOOLMARK TRAINING COURSE	DEMO	10
29.7.83	SPECIAL FINISHING OF WOOL KNITWEAR	TALK	60
5.9.83	KNITTING TRAINING FOR I.P.C.L. PERSONNEL		3
1.12.83	DYEING	DEMO	4
"	KNITTING TRAINING FOR FORT INSTITUTE STUDENTS	"	8
2.1.84	KNITTING TRAINING FOR I.P.C.L. PERSONNEL	"	3
VARIOUS	ORGANISED PRACTICAL TRAINING AND DEMONSTRATIONS TO INDIVIDUAL PERSONS FROM INDUSTRY:		
	DYEING	-	8
	TESTING & QUALITY CONTROL	-	13
	KNITTING & MAKE-UP	-	4



APPENDIX II

KNITWEAR FACILITY  
LUDHIANA

PROGRAMME OF MR. J.A. SMITH UNIDO TRAINING SPECIALIST

ARRIVAL AT KNITWEAR FACILITY : 6.1.1984

6.1.84 to 9.1.84	Assessment of Knitwear Facility resources and meeting with Managers.
10.1.84	Holiday
11.1.84	Visit to York Hosiery to assess training needs.
12.1.84 to 13.1.84	Preparation of training methodology/techniques.
14.1.84	Visit to Saab Knitters and Joy Hosiery Mills to assess training needs.
15.1.84	Sunday
16.1.84	Visit to Advance Training Institute and Teeknit International to assess training needs.
17.1.84	Visit to Amita Udyog and Jaidka Hosiery Mills to assess training needs.
18.1.84	Preparation of training needs of Industry based on the visits made.
19.1.84	Preparation of need based training programmes for 1984.
20.1.84 21.1.84 to	Preparation of teaching techniques to be demonstrated to Knitwear Facility Manager.
22.1.84	Sunday
23.1.84	Evaluation of training programmes and feed-back system of evaluation.
24.1.84	Design two training programmes based on needs of Industry as specimen.
25.1.84.	Review the work of dissemination of technical information already done and suggest ways and means to improve further.
26.1.84	Holiday

- 27.1.84 Use of Audio-Visual Aids for the training programmes.  
Discussions with Training Officer.
- 28.1.84 Demonstration of teaching technique to Manager to be  
followed for future training programmes.
- 29.1.84 Sunday
- 30.1.84 Discussion with Training Officer and Managers.
- 31.1.84 to Preparation of final report  
6.2.84
- 7.2.84 Departure

APPENDIX III

Companies Visited

YORK HOSIERY MILLS (PVT) LTD.  
CIVIL LINES  
LUDHIANA

TEL : 29227 & 31844

CONTACT : RAKESH KUMAR DHAWAN  
DEEPAK DHAWAN

SAAB KNITWEAR

CONTACT : B.M. GUPTA

JOY HOSIERY MILLS  
KUNDAN PURI  
CIVIL LINES  
LUDHIANA

D.P. PURI  
TEEKNITS INTERNATIONAL  
56E SARABHA NAGAR  
LUDHIANA

JAIDKA HOSIERY FACTORY (REGD.)  
133-134, INDUSTRIAL AREA-A  
POST BOX 234  
LUDHIANA

TEL : 20468

CONTACT : JAGDISH JAIDKA

AMITA UDYOG  
SPINNING UNIT  
396 INDUSTRIAL AREA 'A'  
LUDHIANA

TEL : 27432

CONTACT : LAJPAT RAI

APPENDIX IV

TRAINING OF TRAINERS SYLLABUS

1. Glossary of Training Terms
2. The Role of the Trainer
3. Preparation for Training - establishing training needs
4. Preparation for Training - job analysis
5. Preparation for Training - task analysis
6. Theory of Learning - parts method (micro training)
7. Training Method - preliminary exercise
8. Training Methods - demonstration
9. Theory of Learning - ways people learn
10. Training Methods - talk
11. Theory of Learning - learning curve
12. Training Methods - job exercise
13. Training Documents - job breakdown sheet
14. Training Methods - induction training
15. Training Methods - safety training
16. Training Methods - targets in training
17. Training Methods - performance testing
18. Training Methods - putting to work
19. Theory of Learning - retraining
20. Training Documents - programme
21. Theory of Learning - over learning
22. Training Aids
23. Training Methods - a brief guide
24. Ten Rules of Learning
25. Training Methods - evaluation
26. Equipment checklist for visual aid presentation

1. GLOSSARY OF TRAINING TERMS

TRAINING:	A METHOD OF LEARNING WHICH USUALLY RESULTS IN THE POSSESSION OF A SKILL MORE THAN KNOWLEDGE.
EDUCATION:	LEARNING WHICH USUALLY RESULTS IN THE POSSESSION OF KNOWLEDGE MORE THAN SKILL.
JOB ANALYSIS:	THE SEPARATION OF A JOB INTO ELEMENTS EACH IN ITSELF A COMPLETE ENTITY CALLED TASKS.
TASK ANALYSIS:	THE SEPARATION OF A TASK INTO PARTS CONSISTING OF SKILL, KNOWLEDGE AND KEY POINTS.
MICRO TRAINING:	THE CONCENTRATION OF LEARNING ON ELEMENTS OF THE TASK OR JOB.
DEMONSTRATION:	A SYSTEMATIC METHOD OF INSTRUCTING AN OPERATION, EXERCISE, ELEMENT OR TASK.
TASK:	A SMALL PART OF A JOB WHICH IN ITSELF IS A COMPLETE OPERATION.
JOB:	THE TOTAL OF TASKS OR OPERATIONS IN THE WORK, USUALLY FOR AN EMPLOYED PERSON IT IS WHAT THEY ARE PAID TO DO.
JOB EXERCISE:	A TASK OR GROUP OF TASKS FOR TRAINING PRACTISE. USUALLY PERFORMED WHEN THE TRAINEE IS PROFICIENT IN BASIC SKILLS.
CORE SKILLS:	SKILLS NECESSARY FOR A WIDE RANGE OF OCCUPATIONS. THE SKILLS OF: - NUMERACY - COMMUNICATION - PROBLEM SOLVING ETC.
OCCUPATION:	A FAMILY OF SIMILAR JOBS.
JOB BREAKDOWN:	ELEMENTS OF A JOB WITH REFERENCE TO KEY POINTS INCLUDING SAFETY PROCEDURES.
KEY POINTS:	A JOB OR TASK ELEMENT NECESSARY FOR THE SUCCESSFUL COMPLETION OF THE JOB OR TASK.
INDUCTION TRAINING:	INSTRUCTION GIVEN FOR INTRODUCING A TRAINEE TO THE PROGRAMME, JOB OR ORGANISATION ETC.

INSTRUCTION SHEET (SEE ALSO JOB BREAKDOWN) : A FORM OF WRITTEN INSTRUCTION USED BY TRAINER OR TRAINEE DETAILING STEP-BY-STEP TRAINING ELEMENTS FOR THE TASK OR OPERATION.

TRAINING PROGRAMME: A DETAILED CHRONOLOGICAL ORDER OF TRAINING TO BE UNDERTAKEN.

TRAINING SYLLABUS: A LIST OF SKILL KNOWLEDGE IN THE PROGRAMME OF TRAINING NOT NECESSARILY IN ORDER OF INSTRUCTION.

TASK ELEMENT: THE SMALLEST PART OF SKILL KNOWLEDGE.

JOB ELEMENT: SEE TASK.

JOB DESCRIPTION: A BRIEF STATEMENT OF DUTIES; RESPONSIBILITIES; TASKS; PREREQUISITES (TO PERFORM THE JOB) AND THE NAME OF THE JOB/JOB HOLDER AND IMMEDIATE BOSS.

JOB SPECIFICATIONS: A DETAILED STATEMENT INCLUDING INFORMATION CONTAINED IN A JOB DESCRIPTION WITH ADDITIONAL REFERENCE TO TASK ELEMENTS TARGETS AND FREQUENCY OF PERFORMANCE.

TARGET: OBJECTIVE OR SPECIFIC AIM.

## 2. THE ROLE OF THE TRAINER

The name 'Trainer' covers many jobs in the vocational teaching area. The name is applied to a person who performs any training function perhaps only for the time being, being one function of the supervisory manager. As an example, the following management jobs from time to time have a training function, and so as previously stated above, the person at that time will be referred to as 'Trainer'.

### MANAGEMENT JOBS HAVING A TRAINING FUNCTION:

- First line supervisor (regularly passes on directions to the operation)
- Dept. manager (directing the supervisor's work)
- Plant manager (planning to ensure the workforce has the necessary skills)
- etc

Normally, the role of the trainer is associated with the management service function of training manager, instructor and may be, personnel manager. The name of officer has sometimes applied to the training function is a misuse of the word 'officer', as this term is one taken from the armed forces and misrepresents the role of the trainer as a service to management. Typical duties of a training manager are as follows:

1. To determine the organisational training needs by systematic review of manpower needs.
2. To organise, direct or indirect training to meet the training needs.
3. To evaluate training inputs and assess the quality of training provided.
4. To assist management to review its manpower requirements.
5. To keep records of training.
6. Etc.

Typical duties of a trainer are as follows:

1. To provide direct instruction to trainees according to the objective of the training programme.
2. To perform pre and post-course tests with the trainees, to determine performance levels. Areas of performance being quantity, quality and safety.
3. To assist the training manager to evaluate training and training objectives.

The role of trainer therefore, will be for many jobs not normally associated with training but requiring some skill of the trainer. Some of the duties listed perhaps need clarification and the following details are given with this in mind.

A duty of the training manager, to do a systematic review of manpower needs is open to misinterpretation unless we define the meaning of "systematic". First, it may be useful to note systematic does not mean accepting opinion as fact. The trainer needs to know the difference between fact and opinion. Opinion, supported by fact, is one good tool but opinion alone must not cause training action. The following example gives a better insight to this problem.

A company, having low efficiencies, asked consultants to organise training of its weaving personnel. This was found to be opinion, since although efficiencies were indeed low, the cause was some other reason. Investigations of machine (loom) down-time categorised stoppages and subsequent analysis showed the cause as poor maintenance. At this point the skills of mechanics were in question but analysis of this situation showed the cause of the problem to be no spare part replacements. Mechanics were using skills to patch-up, and good repairs were not always possible. At this stage there was no answer to the problem although the investigation was nearly complete. Further inquiries showed no system of stores stock control. Machine down-time was listed according to various stoppages and it was shown that 80% of stops were due to breakdowns, resulting from no replacement spares. A stock-control system was implemented and the company had store-keepers trained to keep improved records. This investigation also brought to managements attention, the need



for systematic recording of machine stopped time. The benefits of a systematic approach to problems was also realised.

A danger of not investigating problems systematically, is to do unnecessary training, which is obviously wasting time and money. This is a reason for doing systematic investigation to find training needs, and knowing the difference between opinion and fact. Opinions may be used to indicate where investigations should be directed. Facts, will be obtained from systematic analysis to establish true training needs.

### 3. PREPARATION FOR TRAINING-ESTABLISHING TRAINING NEEDS

Training needs are established on fact not opinion, and the first step in the exercise is to seek opinion from the personnel concerned. The usual method training need is established is as follows:

1. Find the problem area.
2. Observe and record facts related to the problem.
3. Consider observing other areas based on facts from the first observations.
4. Discuss findings with management to verify training needs.
5. Agree and implement training plans.

The above method is put into simple terms and if further information is needed, the following details may help understanding.

1. The problem area will be indicated by opinions of managers and those closest to the problem. This may not be the cause of the problem, but it is used as a starting place for obtaining facts to quantify the problem.
2. Observation of a problem requires careful handling of a situation. Delicate human factors may be raised, and it is important to do investigations in the correct manner. In manufacturing, a problem in production will normally be revealed in the following areas:
  - Materials
  - Machines
  - Personnel

Often there is interaction between materials, machines and personnel and a problem will often be evident by observing materials or machines. There are good reasons to start observations in one of these two areas. There is little good reason to start observing personnel, since human nature can sour the assignment before it has got fully underway. Secret observations are not recommended and to obtain best

results, personnel should know that machines or materials are being examined not themselves. In this way much information will be given by operative personnel for quantification of the problem. Obviously, if people need to be observed directly it should be done with tact. Observation of human factors are best done after spending some time getting to know the personnel concerned.

Reliable sources of information are:

- Machine down-time
- quality control tests
- time study reports.

for most reliability, information should be firsthand not second.

Unreliable sources of information are:

- Opinions.
- Secondhand facts not up-to-date.
- Persons who don't understand the difference between opinion and fact. Facts can be proven, opinions have to be substantiated by fact.

#### 4. PREPARATION FOR TRAINING-JOB ANALYSIS

Job analysis is done for many reasons by management. In the training function, the purpose of a job analysis is to make the job learnable. No person could learn the whole job as one exercise, and the job, split into several parts, called tasks or training elements facilitates learning. Each task is a small job, itself composed of common elements. For example some tasks in the job of a sewing machinist are as follows:

- receives material
- assembles material before sewing
- sews material
- put material aside
- threads machine
- etc.

Job analysis is used when making job descriptions and the details used to guide individual working. It is also useful to identify areas of training need; a person can do this or cannot do that task, for example. It is also possible to use the task as a form of test used after training. On many occasions tasks will be split further into smaller elements (task elements) to identify basic skills for training.

5. PREPARATION FOR TRAINING-TASK ANALYSIS

Task analysis follows job analysis, and facilitates basic skills and knowledge to be identified for the purposes of direct training or instruction. Many tasks are composed of skill and knowledge elements and learning both may be done separately or combined as training proceeds.

This example from a sewing machinists task show these elements:

TASK	SKILL	KNOWLEDGE
SEWS SIDE SEAM	CAN SEW ACCURATLEY CAN SEW AT SPECIFIED SPEED	KNOWS HOW TO CONTROL PRESSURE FOOT KNOW HOW MANY MUST BE MADE  KNOWS STITCH FAULTS AND CORRECTION PROCEDURE

## 6. THEORY OF LEARNING-PARTS METHOD

Many experiments have been conducted into how learning takes place, and much of the theory and practical training techniques used in vocational training are based on results of such experiments. Only practical aspects are put forward here, concerning the parts method of training. A training exercise of approx 20 seconds duration with a single skill or knowledge element is an acceptable learning unit (element). Of course, some tasks are simple, and some take a greater length of time to complete, especially where there is some waiting time involved e.g. draining oil from the sump of an engine. A learning element should not last a greater length of time than 20 seconds where there is continuous action from the individual. This time is at the rate of the experienced work person, and trainees can be expected to take more time to begin with, and become proficient with proper practice.

The parts method facilitates basic skills and knowledge to be practiced apart from the main body of the task. In this way the trainee and trainer may concentrate on preliminary training exercises, without the complication of the trainees's low proficiency in the job as a whole.

As proficiency improves skills can be built-up in various tasks until the whole job is practiced.

### 7. TRAINING METHODS-PRELIMINARY EXERCISES

When the job, task or operation is complicated and requires pre-requisite skills and knowledge, preliminary training exercises will be undertaken. Vocational training often has mixed abilities amongst trainees. Some of these people will be well educated and able to learn at a greater pace than average. Others, with lower educational achievements will require further education to absorb the normal vocational programme.

Preliminary training exercises will be used not only for prerequisite skill training but also for training basic skills (in the task) upon which further skills are developed. An example; in the operation of many textile processes the skill of machine operation is developed after training a basic skill, such as tying the correct type of knot, in the supply yarn. This to a weaver, is, the weaver's knot and knitting, the fisherman's knot.

The nature of basic skills necessitates training outside the main stream of instruction. The trainer will organise a deviation to the main programme to allow this. Training will be directed from these preliminary exercises to the more complicated exercises for trainees to; consolidate learning, have variation (to maintain their concentration) and facilitate some flexibility, for the trainer to run the programme.

The normal guideline should be followed, that is, to proceed from what is known to what is not known. Or from what can be done to what cannot be done.

## 8. TRAINING METHODS - THE DEMONSTRATION

Sometimes referred to as the show-and-tell method, this method of demonstration is a most useful training technique. However, the steps in the demonstration must be practiced by the trainer to give the best training results. Steps in the demonstration are as follows:

- explain the exercise
- check existing knowledge
- show the training element step-by-step without any telling or further explanation.
- show and tell the training element taking care to emphasise all key points.
- allow the trainee to ask questions
- as necessary, have the trainee explain or tell the trainer how the training element is performed.
- have the trainee do the training element
- correct errors as necessary
- have the trainee practise until proficient
- put to work and check as necessary.

Before each new demonstration an explanation or introduction to the exercise is necessary. There are a number of reasons for this:

- it focuses attention of the trainee to training, and removes external influences, and therefore, brings both trainee and instructor to matters at hand.
- it removes doubts regarding the purpose of the exercise.
- it puts the trainee at ease in a new situation.
- it is an opening to check existing experience the trainee may have on the subject.

Checking the trainee's existing skill and knowledge on the subject is necessary for the following reasons:



- it may mean training is not required, and therefore, saves time and expense in providing unnecessary instruction.
- if the trainee has some knowledge it establishes what extra training needs doing.
- it allows the trainer to create a rapport with the trainee.

The method of checking existing knowledge and skill is important. Knowledge can be assessed by using a form of written test, known as a pre-test. Skill will be assessed by testing the trainee's performance against standards. Training is then based on test results.

Showing or demonstrating the training exercise is the duty of the trainer and is in two main parts. First, it is necessary to show the training element, allowing the trainee to only see the task is performed.

The sense of sight is more powerful for learning than hearing, and appealing to the trainee's best sense in this manner, at the beginning is a more favourable learning arrangement. Immediately after this 'silent demonstration' a further demonstration is performed, together with a full explanation of how the task is done. In this way, the trainee uses combined senses of sight and hearing to get insight into the task.

The speed, at which the trainer demonstrates, is most important and generally, the task will be demonstrated more slowly than normal for the benefit of the trainee's learning. This speed will be varied as the trainer sees fit, according to individual aptitudes of trainees.

At this stage of the demonstration, all key points connected with the task will be brought to the attention and understanding of the trainee.

Now, immediately after these 'Silent' and 'Show-and-tell' inputs by the trainer, is the time for questions from the trainee. Questions

need to be restricted to the task being learnt and should not be an opportunity for general questions outside the area of immediate interest.

At this stage the trainee is allowed to show the trainer learning that has taken place. If the task is one of skill, and providing no safety hazard is present, the trainee can proceed to show the trainer, at the same time explaining what is being done. Often mistakes are made by the trainee at this stage and errors are corrected as they occur. The purpose of the trainee talking through the training exercise allows the trainer to check related knowledge. If a task has any safety hazard or particular quality points the trainer may decide not to allow further practice until the trainee has an understanding of the task. After this stage, the trainer being satisfied, the trainee may continue practice.

The above procedures make up the demonstration and is under the direction of the trainer, who is with the trainee throughout the exercise.

Generally, errors are corrected as they occur, but there will be good in allowing the trainee to discover errors, providing these do not result in bad practices, or accidents.

When the trainee has got the right method of performing the task, the trainer allows practice. This additional practice is necessary to consolidate learning. Practice is introduced as variation into the programme at later stages in the programme.

When the programme is complete the trainee is put to work and periodic checks by the trainer is needed for a successful outcome. The trainer is an important bridge between training programme, and trainee's workplace and periodic follow-up, by the trainer, provides useful feedback from training. Follow-up facilitates evaluation of the training.

9. THEORY OF LEARNING - WAYS PEOPLE LEARN

People learn by using the senses:

SIGHT

HEARING

TOUCH

SMELL

TASTE

For training in manufacturing, the senses of SIGHT, HEARING and TOUCH, are most often used. Sight provides the most powerful means of learning; HEARING and TOUCH to a lesser extent. However, using the combination of more than one sense gives a more powerful means than any one sense. Information collected by the senses during the learning process should not be too much for the brain to absorb at one time. If, therefore, the senses are in action systematically a most favourable learning situation can be created.

During the demonstration, the trainee first saw what was demonstrated and used the most powerful sense (SIGHT) without blocking the brain with too much information. Then, on the second demonstration, the combination of sight and hearing senses produced a better learning situation than the first demonstration. Then the trainee practices and learns to understand.

The following may be remembered:

WHAT I HEAR I FORGET

WHAT I SEE I REMEMBER

WHAT I DO I UNDERSTAND

also:

A PICTURE IS WORTH 1000 WORDS.

## 10. TRAINING METHODS - TALK

Only a small part of what is heard is remembered; this is a salient fact every trainer should bear in mind. Even the best lecture will only produce a retention of no more than 20%. Faced with this fact and the possible chance of the lecture not going to plan, it may be thought that the talk is not worth doing. In reality the situation is not so bad, once the talk has been planned and visual aids added to help people remember, the talk can be a most useful training technique. The following steps in the delivery of a talk should be remembered:

### Preparing a Talk

1. Have first hand knowledge of the subject.
2. Refer to background information from books and other literature to help piece together experience.
3. Prepare real life examples if possible with a personal appeal.
4. Plan a talk in advance according to these guidelines:
  - have an introduction which should be about 5-10 minutes for an hour's talk but reducing this if the talk is for a shorter time.
  - mainbody of the talk.
  - conclusion to the talk.

In preparing a talk the above should be clear in one's mind. The introduction must attract the listener's attention and must, therefore, create the necessary impact. If the listener's attention is not got at this point, it is doubtful whether it will be throughout the talk. Included in the introduction should be a summary of what the talk will cover and this will lead into the body of the talk.

Regarding the body of the talk, it will be remembered what is to be achieved. The objective should be clear and the talk take the listeners step-by-step to the conclusion. Each step will be a self

contained unit of information, each illustrated by words and visual aids as appropriate. Simple visual aids previously prepared are most useful to support the speakers points. These aids can support facts, by graphic methods and colour used fully. At all times retain the attention of the trainee and each step in the talk will make it easy for the listener to give attention.

The conclusion of a talk should summarise the main points and provide an opportunity for the listeners to ask questions.

Many people are not naturally gifted speakers, in public, but practice using the following check list will help improve techniques:

- prepare
- speak from experience not from secondhand events
- tell the listeners what you are going to tell them
- tell the listeners using visual aids as appropriate
- tell the listeners what you have told them
- get feedback on your technique (use a tape recorder it does not tell lies)
- get as much speaking practice as possible both inside and outside your profession.

12. TRAINING METHODS - JOB EXERCISE

A job exercise may be referred to as job element or task; a job exercise will be undertaken after task elements have been trained. Doing task elements, at this stage, need not be to target performance but until enough competency in method is achieved. By performing the task as a whole, the trainee progresses. However, where the trainer observes more practice is needed, the trainee should do task training elements. One reason for having training elements is so more difficult and skillful parts of the task can be put to isolated practice.

13. JOB BREAKDOWN SHEET

TASK:

EXPLANATION:

NO.	TASK ELEMENT	SKILL/KNOWLEDGE	KEY POINTS

#### 14. TRAINING METHODS - INDUCTION TRAINING

Introducing the trainee to the job, or training programme is known as induction training. Induction may take the form of a special programme, or part of a whole programme. The content of induction programmes are those items of knowledge which are necessary and sometimes those which are just nice-to-know. Information helping the trainee feel more at ease with the situation will often be included. Since much of the induction is in the form of knowledge, consideration by the trainer needs to be given to variation in presentation. The trainee will be shown either visually, by illustrations or presented in reality. The following example is given. The order of method is the point:

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##### INDUCTION PROGRAMME (Part Programme)

JOB : LABORATORY ASSISTANT  
SUBJECT : DEPT ORGANISATION  
METHOD : 1. TOUR OF DEPT MEETING VARIOUS SECTION  
HEADS, 2. INPUTS USING ORGANISATION  
CHART AND FACTORY LAY-OUT

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The order of presenting this information will have some bearing on learning retention. The trainee will be instructed in the order written above, i.e. proceeding from practical to theory where possible; 1 then 2.

##### Induction Training Check-list

Trainee should understand:

Who's, who in the organisation especially the immediate boss.

History of organisation.

Organisation's products.

Welfare facilities such as; toilets, first aid and social facilities etc.

Organisation rules and discipline.



Grievance procedure.

Workers legal rights.

Pay + wages system.

Holiday and time-off arrangements.

Introduction to the job.

Etc.

## 15. TRAINING METHODS-SAFETY TRAINING

Safety training should be preventing accidents. Accidents are categorised as follows:

- Personal injury accidents
- damage accidents to machines and materials
- accidents where no injury or damage occurs are 'near miss' accidents.

### Personal Injury Accidents

Every work person should know of hazards facing them at work and one's responsibility in reducing hazards in the work area. Induction training will provide the trainee with a basic knowledge of safety hazards and accidents.

For induction and safety training purposes the trainer will prepare a programme of hazard awareness. A method of doing this will be to have the trainee do a tour of the department/section spotting safety hazards. A further method allows trainees to make accident prevention posters for the organisation. A study of accident reports is also a most useful training aid.

### Damage Accidents

Where no injury to a person occurs and some damage is caused to plant, machinery or materials, this is known as a damage accident. Accidents of this nature are costly and time consuming to the organisation. Trainees need training in methods of cost reduction by the elimination of damage accidents. Prepared examples of material faults will be made into a form of swatch book. The cause and preventive measures of the fault will be detailed. Further examples of damage accidents on machines will be shown, but it may not be possible to show the complete range of accidents in this area. Examples of damaged machine parts together with accident and

prevention details will be described and prepared for training purposes.

Safety training is about accident prevention and cost reduction. From this point of view it is a most worthwhile training exercise for all levels of occupation - managing director to casual worker.

REMEMBER

Accidents of any kind are unplanned events costing time and money. Reducing accidents increases efficiency from individuals wage to company profit.

16. TRAINING METHOD-TARGETS IN TRAINING

The definition of target shall be taken as the same meaning as objective i.e. that which is to be achieved. Training must be directed towards a target so it is known what is to be achieved. The idea, that if we do not know precisely what is to be done, no one can know when it has been done; should be born in mind. For example, the dept. manager has some responsibility for various duties, one of these being to keep spending within certain limits. If that manager does not know what the limit of spending is, how can expenses be kept within it? This principle will be applied to any goal orientated organisation. Further to this, training will be a means of helping the organisation reach related sub-objectives. Training assumes objectives have been made, and more importantly, sub-objectives communicated to personnel responsible for attaining them.

Targets in training are organisation objectives boiled down to sub-objectives for the job and task. What is meant by this is shown through the following example:

Knitter - knits without dropping stitches

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Sewer - sews along a straight line

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Dept. manager - ensures supervisors have an agreed weekly work schedule, by Monday 11.00 am.

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Production Manager - Ensures organisation has resources for production plan.

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Director - Ensures organisation has resources to meet planned objectives.

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An example of how these duties can be boiled down to training activities is give.

Knitters - Task - casting off stitches

Learning - How to do it without dropping a stitch 100%  
of the attempts in a set time

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Sewer - Task - material control

Learning - How to sew 1 metre of material in a straight  
line with no more than 1-1.5 mm. deviation.

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Supervisor - Task - utilises machines to 80% efficiency

Learning - How to make machine setting correct.

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Production Manager - Task - Ensures weekly production meets  
agreed amount.

Learning - How to control supervisors activities and  
communicate effectively.

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Director - Task - Ensures organisation has resources to meet  
planned objective.

Learning - How to manage objectively.

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17. TRAINING METHODS—PERFORMANCE TESTING

Why performance testing: a trainer needs objective feedback on training activities. A trainer needs to know if a trainee has difficulties, or not. These are two good reasons to give a test.

When performance testing: at the beginning and end of each learning element and the beginning and end of each job exercise, and the beginning and end of the job.

How, the testing is done: tests for skill will be pass or fail on performance according to the objective. Tests of knowledge can be written or otherwise the result scored.

Criteria used in tests will be based on the target performance.

Results of tests are used to decide whether further training is required. Results of tests provide the trainer with a progress check. The trainee may know without the trainer informing, that more or less practice is necessary. The test will be a self informing feedback system to the trainee and trainer.

Tests along these lines, will be designed by any competent trainer. Tests will be designed to fit the operation and not varied to suit trainees. Pre-tests, allow the trainer to establish the training needs and post training tests show if the training objective has been attained. Post training tests are used as the basis of a certificate provided after training.

18. TRAINING METHODS-PUTTING TO WORK

At this stage of training, time and expense will be wasted if the trainee is not put to work in an appropriate manner.

An obvious, but often neglected, point is; works should immediately be available for the trainee to do following training. No time should pass between the end of training and putting the trainee to work. It is at this time, when training should be re-enforced with experience at work. If learning is not re-enforced, little will come of training as forgetfulness takes place.

Once the trainee has been put to work there will be further contact with the trainer. During this period, immediately following training, the trainee will have difficulty and needs further guidance. If the trainer cannot check the trainee, some responsible individual will help in these matters. This is known as follow-up.

Follow-up provides the trainer with information to form the basis of programme evaluation. The trainer thus finds how effective training has been and what changes, if any, should be made to future programmes.

At this time, of putting to work, it is not expected the trainee is at target performance. Work experience brings individuals upto the required work standard. This point suggests the boss of the trainee is informed and so, helps in developing the trainee to full capacity.

19. THEORY OF LEARNING- RE-TRAINING

Re-training gives the trainer the biggest problem. If all goes well it may just be a matter of checking existing knowledge and providing the necessary programme. It may be expected that checking previous skill and knowledge may take more time than with the inexperienced trainee. Re-training assumes some past experience and new ideas and skills may present trainee and trainer alike with a problem. The reason for this is well known. Old habits are difficult to change. Even if the trainee is willing and wants to learn, old practices are difficult to change. The trainer will have this in mind and plan for it in the programme.



22. TRAINING AID - CHECK LIST

Aid	Advantages	Disadvantages
Blackboard Chalk	Available, cheap and once the technique is mastered an acceptable method of giving information to large groups. Facilitates a subject to be developed in a logical manner.	Contact is lost between the group and tutor when the board is in use.  Is not permanent. Information is only received at the rate the slowest trainee takes notes.
Overhead Projector &	Not so expensive. Allows tutor to face trainees. Makes use of previously prepared illustrations etc. Permanent or not depending on the type of pen used. Facilitates animation.	Effectuated by power-cuts.  Needs time to make good transparencies.
Epidiascope	Text can be projected from a printed page or transparencies.	Limited in use.
Audio/ Slide Projection	Allows fresh slides to be inserted.  Relatively cheap to buy when compared with film and video. Useful to show key points.	Needs camera and recording facility to get the best use from the system. Readymade slide/tapes are too general and not specific.
Flip Chart	Better than blackboard. Allows previously made information to be used. Useful for small to medium size groups. Cheap to buy.	Small writing surface.
Posters & Wall Charts	For permanent or semi permanent display of routine facts.  For short pieces of information	More suitable for illustrative work.  Looses impact if left on permanent display.

Aid	Advantages	Disadvantages
Simulate work place and Mock-up	Shows without stopping regular work. Expensive if specially engineered.	Abstracts training Does not show related mechanism, if any.
Colour Coding of Machine Mechanisms	Shows separate mechanism within a whole machine	Machine should be switched-off from power supply during demonstration.
Photographs	Useful for visual records of faults and saves spoiling materials. Useful for saving visual faults from the knitwear industry.	Colour expensive Black & White is best value. Limited in use.
Film (16mm Projection)	Creates initial interest. Useful for supporting lectures.	Limited in use, are usually of general appeal since costly to produce.
Video/Camara/ Recorders and VDU	Creates a versatile training system. Useful for: obtaining feedback on skill training such as lecturing, sales and communication, etc.	Expensive, if not used sufficiently. Participants may be camera shy.

### 23. TRAINING METHODS - A BRIEF GUIDE

<u>WHAT IT IS</u>	<u>WHAT IT WILL ACHIEVE</u>	<u>POINTS TO WATCH</u>
<u>Lecture</u> A talk given without much, if any, participation in the form of questions or discussions.	Suitable for large audiences where participation of the trainee is not possible because of numbers. The information put over will be worked out beforehand. The timing will be accurately worked out.	The lack of participation on the part of the audience means that unless the whole of it, from beginning to end, is fully understood and assimilated, the sense will be lost. Limited feedback to trainer.
<u>Talk</u> A talk incorporates a variety of techniques, and allows participation by the trainees. Participation will be in the form of questions, brief periods of discussion.	Suitable for putting across information to groups of not more than twenty trainees. Participation by trainees keeps interest and helps learning.	Trainees have opportunity to participate but may not wish to do so. The communication will then be all one way and the session will be little different from a lecture.

### Discussion

Knowledge, ideas and opinions on a particular subject are freely exchanged among trainees and instructor.

Suitable where application of information is a matter of opinion. Also when attitudes need to be induced or changed. Trainees are more likely to change attitudes after discussion than they would if they were told during a talk what their attitude should be changed. Also suitable as a means of obtaining feedback to the instructor about the way in which trainees may apply the knowledge learned.

Trainees may stray from the subject matter or fail to discuss it usefully. The whole session may be blurred and become entrenched about their own attitudes.

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### Role Play

Trainees are asked to enact, in the training situation, the role they will be called upon to play in their job of work. Used mainly for the practise of dealing with face-to-face situations (ie: where people come together in the work situation).

Suitable where the subject is one where a near-to-life practise in the training situation is helpful to the trainees. The trainees can practise and receive expert advice or criticism and opinions of their colleagues in a "Protected" training situation. This gives confidence as well as offering guidelines. The trainees get the feel of the pressures of real life situations.

Trainees may be embarrassed and their confidence sapped rather than built up. It can also be regarded as 'a bit of a lark' and not taken seriously.

### Case Study

A history of some event or set of circumstances, with the relevant details, is examined by the trainees.

Case studies fall into two broad categories:

- a) Those in which the trainees diagnose the causes of a particular problem.
- b) Those in which the trainees set out to solve a particular problem.

Suitable where a cool look at the problem or set of circumstances, free from the pressures of the actual event, is beneficial. It provides opportunities for exchange of ideas and consideration of possible solutions to problems the trainees will face in the work situation.

Trainees may get the wrong impression of the real work situation. They may fail to realise that decisions taken in the training situation are different from those which have to be made on-the-spot in a live situation.

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### Exercise

Trainees are asked to undertake a particular task, leading to a required result, following lines laid down by the trainers. It is usually a practice or a test of knowledge put over prior to the exercise. Exercise may be used to discover trainees existing knowledge or ideas, before further information or new ideas are introduced. Exercises may be posed for individuals or for groups.

Suitable for any situation where the trainees need to practise following a particular pattern or formula to reach a required objective. The trainees are to some extent 'on their own'. This is a highly active form of learning. Exercises are frequently used instead of formal tests to find out how much the trainee has assimilated. There is a lot of scope in this method for the imaginative trainer.

The exercise must be realistic and the expected result reasonably attainable by all trainees or the trainees will lose confidence and experience frustration.

### Application Project

Similar to an exercise but giving the trainee much greater opportunity for the display of initiative and creative ideas. The particular task is laid down by the trainer but the lines to be followed to achieve the objectives are left to the trainee to decide. Like exercises, projects may be set for either individuals or groups.

Suitable where initiative and creativity need simulating or testing. Projects provide feedback on a range of personal qualities of trainees as well as their range of knowledge and attitude to the job. Like exercise projects may be instead of formal tests. Again there is a lot of scope for the imaginative trainer.

It is essential that the project is undertaken with the trainee's full interest and co-operation. It must also be seen by the trainee to be directly relevant to his needs. If the trainee fails, or feels he has failed the project, there will be severe loss of confidence on his part and possible antagonism towards the trainer.

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### In-Basket (In-Tray)

Trainees are given a series of files, papers and letters similar to those they will be required to deal with to the place of work (ie: the typical content of a desk-worker's in-tray). Trainees take action on each piece of work. The results are marked or compared one with another.

Suitable for giving trainee desk-workers a clear understanding of real-life problems and their solutions.

The simulation of the real situation aids the transfer of learning from the training to the work situation.

A valuable way of obtaining feedback on trainees' progress.

Also useful for developing attitudes towards the work, eg: priorities, customers' complaints, superiors, etc.

It is important that the contents of the in-tray are realistic. The aim should be to provide trainees with a typical in-tray.

The marking or comparison of results must be done in a way which will not sap the confidence of the weaker trainee.

## WHAT IT IS

### Business Games

Trainees are presented with information about a company - financial position, products, markets, etc.

They are given different management roles to perform. One group may be concerned with sales, another with production and so on.

These groups then 'run' the company. Decisions are made and actions are taken. The probable result of these decisions in terms of profitability is then calculated.

### Sensitivity Training (Group Dynamics)

Trainees are put into situations in which:

- a) the behaviour of each individual in the group is subject to examination and comment by the other trainees;
- b) the behaviour of the group (or groups) as a whole is examined.

(The trainer is a psychologist, sociologist or a person who has himself received special training).

## WHAT IT WILL ACHIEVE

Suitable for giving trainee managers practice in dealing with management problems.

The simulation of the real-life situation not only aids the transfer of learning but is necessary because a trainee manager applying only broad theoretical knowledge to the work situation could cause major problems.

Also a valuable way of assessing the potential and performance of trainees.

It helps considerably in developing many aspects of manager's role.

A vivid way for the trainee to learn of the effect of his behaviour on other people and the effect of their behaviour upon him.

It increases knowledge of how and why people at work behave as they do. It increases skill at working with other people and of getting work done through other people.

## POINTS TO WATCH

The main difficulty is in assessing the probable results of the decisions made. Sometimes a computer is used for this purpose.

The trainees may reject the whole of the learning if they feel the assessment of the probable outcome of their decisions is unrealistic.

There is also a risk that the trainees may not take the training situation seriously.

Difficulties can arise if what the trainee learns about himself is distasteful to him.

Trainees may 'opt-out' if they feel put off by the searching examination of motives.

It is important that problems arising within the group are resolved before the group breaks up.

#### 24. TEN RULES OF LEARNING

1. The capacities of learners are important in determining what can be learned and how long it will take.

The implication of this principle is that trainers should know their audience. Bright people can grasp a complex message that is over the heads of the less bright ones. And they grasp significance of a simple message in less time.

2. The order of presentation of materials to be learned is very important.

Points presented at the beginning and end of the message are remembered better than those in the middle. Thus, if four reasons "why" are given in a series of copy, the two most important points should be given first and last.

3. Showing errors in how to do something can lead to increases in learning.

The effectiveness of a demonstration might be increased by showing not only "what to do" but "what not to do". Thus, to show how not to use a product and also how to use a product will be useful.

4. The rate of forgetting tends to be very rapid immediate after training.

Accordingly, the continuing repetition of the training message is desirable. It usually takes a lot of repetition in the early weeks of a programme to overcome rapid forgetting.

5. Repetition of identical materials is often as effective in getting things remembered as repeating the same story but with variation.

Psychologists term this identical vs. varied repetition. Using training films, they have failed to find significant differences in learning, after employing a lot of different examples versus repeating the same few over again.



6. Knowledge of results leads to increases in learning.  
If you are interested in teaching a given amount of material to people, knowledge of how well they are doing as they are learning leads to greater learning gains.
  
7. Learning is aided by active practice rather than passive reception.  
This point is of great importance. If you can get your audience members to "participate" in your presentation, they are much more likely to remember your points.
  
8. A message is more easily learned and accepted if it does not interfere with earlier habits.  
Thus, a training theme which draws on past experiences of the audience will help learning.
  
9. The mere repetition of a situation does not necessarily lead to learning. Two things are necessary - "belongingness" and "satisfaction".  
Belongingness means that elements to be learned must seem to belong together, must show some form of relationship or sequence. Satisfiers are real or symbolic rewards, as distinguished from annoying consequences that may be present in the learning process.
  
10. Learning something new can interfere with the remembering of something learned earlier.  
This is most important when the learner is being asked to change his habits or methods of work. For example, if you study French for an hour, and then study Italian for an hour, your ability to recall the French will probably be less than it would have been, had you substituted an hour's interval of rest in place of the hour's study of Italian.

## 25. TRAINING METHODS - EVALUATION

Evaluation is the careful study and appraisal of training activity. Evaluation can be done on several levels each level is given various notations but normally these can be resolved to the following:-

- immediate level
- intermediate level
- long term level

For training feedback, further definition is necessary, so it is clear what is being evaluated at these levels.

### IMMEDIATE EVALUATION LEVEL

For measuring the reaction to a classroom input, practical demonstration or self-learning activity. The evaluation may be direct questions, questionnaire or ability to do a task. A trainer will be expected to design an evaluation system to fit the programme. Design of a system will be based on the objective for the training session. Feedback will be geared to measuring the attainment of objectives at this the immediate level. This implies the trainer will be involved in the process of setting objectives. Such objectives will be designed by the trainer bearing in mind the objectives of the organisation. Trainers will not set objectives without regard to the organisational needs.

### INTERMEDIATE EVALUATION LEVEL

For measuring the outcome of the training programme. Evaluation at this level provides information and feedback regarding, trainees knowledge at the end of course, trainees skill at the end of course and whether the course/programme objectives were overall achieved. If the objectives were not achieved indications as to why, will be the result of evaluation. Evaluation at this level will also be aided and supported by evaluations done at the immediate level. This pre-supposes evaluation at both levels forms part of a total system. As before when evaluating immediate objectives, evaluation measures

and the trainer corrects future inputs accordingly until organisational and long term objectives are realised.

LONG TERM EVALUATION LEVEL

This implies the evaluation for the organisation and is often out of the control of the trainer or even training manager. It requires a sophisticated system and evaluation is affected by other organisational factors. Generally, the trainer need not be concerned with this kind of evaluation.

26. EQUIPMENT CHECKLIST FOR VISUAL AID PRESENTATIONS

(For Adaption to Individual Needs)

When considering the use of visual aids equipment, ask yourself the following questions:

- What equipment do I need?
- Where is the equipment?
- When and where should it be put in the conference room?
- Who will arrange to put it in the conference room at the right time?

CHALKBOARD - white chalk, coloured chalk, eraser or sponge, pointer.

- Is the board large enough for the purpose ?
- Is the board clean ?
- Are the chalk and eraser at hand ?
- Is the erasing sponge wet ?
- Is there a ruler or other pointer available ?

FLIP CHART - tripod or stand, paper pads, felt pens.

- Have prepared pages been securely attached to the pad ?
- Are writing pens at hand ? In several different colours ?
- Are pens full of ink (and not dry) ?
- Is the stand stable ?
- Have special pages to which you must refer been marked with a clip or folded corner ?

FLANNEL BOARD - on tripod or wall, with prepared appliques.

- Is the board slanted and positioned for easy viewing ?
- Is the stand stable ?
- Does the flannel surface need to be brushed up ?
- Have you planned the arrangement of your appliques ?
- Are the appliques arranged in the order they are needed ?
- Do all pieces stick on ?
- Are letters and figures clearly readable ?

OVERHEAD PROJECTOR - roll of plastic, prepared transparencies, screen, grease pencils or felt pens, erasing cloth, alcohol for erasing if necessary, extra bulb.

- Where are the electrical outlets ?

- Is an extension cord needed ?
- Has the projector been prefocused and centred on the screen ?
- Has the screen been tilted to avoid a trapezoidal projection image ?
- Are the prepared transparencies arranged in order of use ?
- Do the transparencies lie flat on the projector ?
- Is there a supply of blank plastic sheets at hand ?
- Are the pens full of ink ?
- Do the pens write smoothly and darkly, without evaporation ?

FILM PROJECTOR - SLIDE PROJECTOR - TAPE RECORDER - screen, extra bulb, extension cord, film reels and slides, tapes.

- Has someone been asked to set up and run the projector at the proper time ?
- Have preparations been made for darkening the room ?
- Where are the electrical outlets ?
- Are the chairs well placed for viewing ?
- Has the lens been focused on the on the screen?
- Is the sound control adjusted for the size of the room?
- Is the machine ready to run when it is turned on? Must it warm up first?
- Is the loudspeaker, or the recording microphone, well placed?

APPENDIX V

PARTICIPANTS IN TRAINERS PROGRAMME

P.T. BANERJI	QUALITY CONTROL MANAGER
K.P. JANAKIRAMAN	PROCESSING MANAGER
MANJEET SINGH	KNITTING MASTER
D.V. BIST	SPINNING & WINDING MANAGER
A. VASHISHATH	RESEARCH & DEVELOPMENT OFFICER
BALDEV SINGH	CHIEF ENGINEER
AMRIK SINGH	ASSISTANT DYE MASTER
G.D.P. REMI	TRAINING OFFICER

