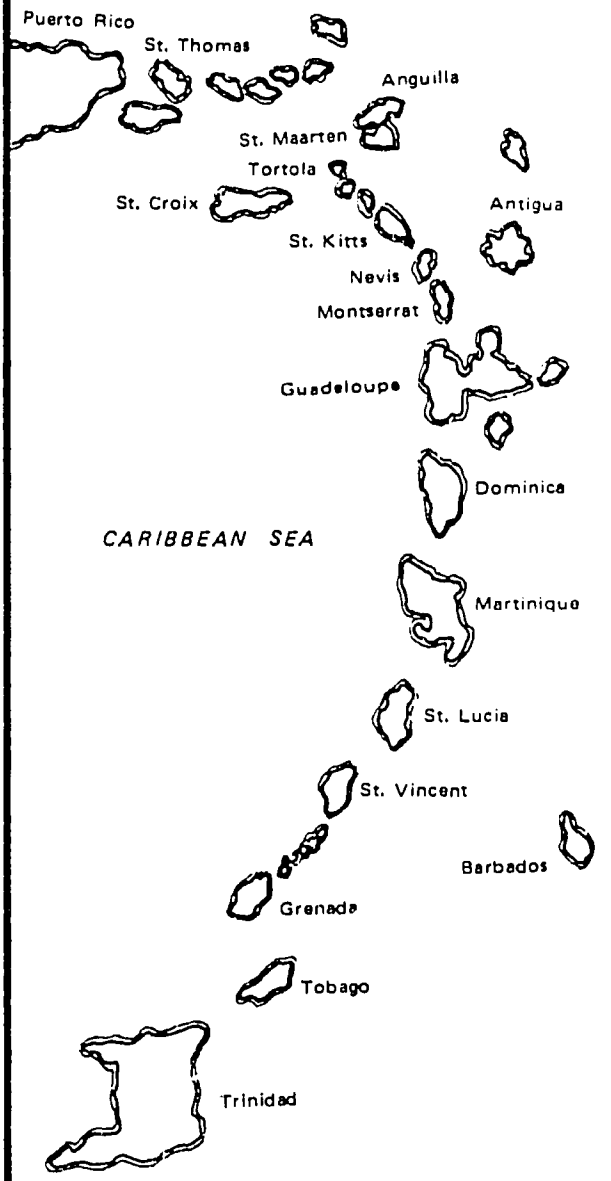
CARIBBEAN BASIN WATER MANAGEMENT PROJECT

INSTRUCTOR'S MANUAL & PLANNING GUIDE

FOR

TRAINING OF TRAINERS

A SERIES OF THREE 20-HOUR WORKSHOPS



A JOINT-VENTURE PROJECT OF THE GOVERNMENTS OF:

ANGUILLA, ANTIGUA, BRITISH VIRGIN ISLANDS, BARBADOS, DOMINICA, GRENADA, MONTSERRAT, ST. KITTS/NEVIS, ST. LUCIA, ST. VINCENT, CANADA

AND

THE PAN AMERICAN HEALTH ORGANIZATION

OCTOBER/1978

CARIBBEAN BASIN WATER MANAGEMENT PROJECT

INSTRUCTOR'S MANUAL AND PLANNING GUIDE

FOR

TRAINING OF TRAINERS

Developed By

JOHN H. AUSTIN
Educational Systems for Environmental Control
1216 Tanley Road
Silver Spring MD 20904, USA

JEFFREY BARROW
Senior Plumbing Instructor
Samuel Jackman Prescod Polytechnic
Bridgetown, Barbados

QUINCY FRANCIS
Acting Senior Vocational Training Instructor
Vocational Training Development Institute
Kingston, Jamaica

STANFORD GRAHAM
Vocational Instructor
Vocational Training Development Institute
Kingston, Jamaica

DORIAN WHITTINGTON
Senior Engineering Assistant
Barbados Waterworks Department
Bridgetown, Barbados

PROGRAMME ADMINISTRATION

NEIL F. CAREFOOT
Project Manager
PAHO/WHO
Bridgetown, Barbados

CARIBBEAN BASIN WATER MANAGEMENT PROJECT

INSTRUCTOR'S MANUAL & PLANNING GUIDE FOR *"TRAINING OF TRAINERS"*

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1. PREFACE

Both within and outside of the waterworks industry there is a growing awareness that new and more sophisticated water systems will either be misused or under-utilized unless development of human resources is done as a parallel activity with the physical improvements. Capital investment alone for waterworks improvements will not ensure good water service or even an adequate supply of water.

There is a realization within the waterworks industry that past training efforts have not kept pace with requirements and that training of supporting sub-professional personnel has often been completely neglected, the question is, how to increase training effectiveness in order to improve managerial and operational competence? An an integral part of this question is the matter of developing on-going training delivery systems which are fully cognizant of the appropriate technology to serve the expanding needs of the waterworks industry.

To close the training gap and simultaneously develop in-country capabilities for sustaining a training delivery system, new approaches must be found and perfected. The following pages address themselves to that problem and outline innovative methods toward such development with accent on establishing the framework to facilitate technical cooperation among the countries of the Eastern Caribbean.

2. CONTACTS FOR MORE INFORMATION

ON ALL ASPECTS OF THE PROJECT

Engineer Neil F. Carefoot
Project Manager
PAHO/WHO
P.O. Box 508
Bridgetown, Barbados

ON IMPLEMENTATION IN EACH COUNTRY

COUNTRY	TRAINING COORDINATOR
ANGUILLA	Alister Richardson
ANTIGUA	Doreen Southwell
BARBADOS	Denis Yearwood
B.V.I.	Louise Phillips
DOMINICA	Schelfaut Pacquette
GRENADA	Kenwrick Phillip
MONTSERRAT	Margaret Dyer
ST. KITTS/NEVIS	Clifford Thomas
ST. LUCIA	Doris Warner
ST. VINCENT	Dennis Mounsey

ON PROJECT DEVELOPMENT

John H. Austin
Educational Systems for Environmental Control
1216 Tanley Road
Silver Spring MD 20904
U. S. A.

3. BACKGROUND

It is conservatively estimated that over the past ten years an investment of US$50 million has been made to improve and expand water supply systems in ten countries* of the Eastern Caribbean (EC).

Despite this massive capital investment water supply objectives have not been fully achieved, i.e., to supply the consumer potable water conforming to international standards in adequate quantities under adequate pressure twenty-four hours a day. The Governments recognize that their shortfall is not for lack of construction funds, but mainly due to lack of sound management, operation and maintenance.

During this 10 year period from 1967 modest efforts were made to update and upgrade personnel who would play an expanded role in the day-to-day management/operation of their improved water supply systems. It should be mentioned that the training of these water utility employees was, for the most part, of a purely technical nature carried out away from their home countries with the consequence that it was not always fully appropriate for the Eastern Caribbean setting.

In early 1977, PAHO and CIDA undertook to assess** the status of water utility training needs; training capabilities; and the adequacy of training efforts in the Region. Some of the findings were as follows:

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*Anguilla, Antigua, Barbados, B.V.I., Dominica, Grenada, Montserrat, St. Kitts/Nevis, St. Lucia and St. Vincent.

**Title of Document produced "Revision of the AMRO-2174 Project - Caribbean Basin Water Management - ASSESSMENT AND RECOMMENDATION (April/77)"

1. There are over 2,000 employees in the waterworks industry of these 10 EC countries;
2. Training activities over the past 10 years have been essentially through PAHO and CIDA sponsored fellowships and/or seminars and short courses. The EC Governments do not normally budget for training waterworks personnel;
3. It is estimated that since 1967 approximately 80% of the funds available for training have been spent on engineers and technicians, who represent only 3.8% of the total work force. This indicates a serious training imbalance.
4. In recent years some basic training of office and supervisory personnel has been carried out. These groups represent 14.9% of the total staff;
5. Little, if any, training has been provided for skilled, semi-skilled and unskilled employees which constitute 81.3% of the total labour force. These employees therefore represent a backlog of training;
6. The majority of the technically-oriented people returning from fellowships have not acquired the communication skills and instructional techniques to pass on their knowledge and experience within the utilities they work for;

7. EC Governments have not required or encouraged the recipients of fellowships returning from study tours to train other staff members;

8. Although no organized mechanism exists for water-works training in the 10 EC territories, two factors strongly indicate that a capability has evolved for developing a self-sustaining training delivery system to serve the on-going needs of the industry, viz., a nucleus of technically-trained people in each island and the establishment of local vocational training institutions.

As an integral part of the April "Assessment" a series of recommendations were prepared for the joint consideration of the 10 countries, PAHO and CIDA. The recommendations, which called for a deliberate departure from traditional approaches to training, were unanimously endorsed by the countries and adopted as a course of action. In brief, these recommendations proposed that major emphasis be placed on:

- Development of a self-sustaining Training Delivery System for the water utilities of the Eastern Caribbean (Fig. 1);
- Training of Trainers, so that home-country training could be substantially increased;
- Development of appropriate Training/Job Manuals, focusing on "need-to-know" rather than "nice-to-know" information;

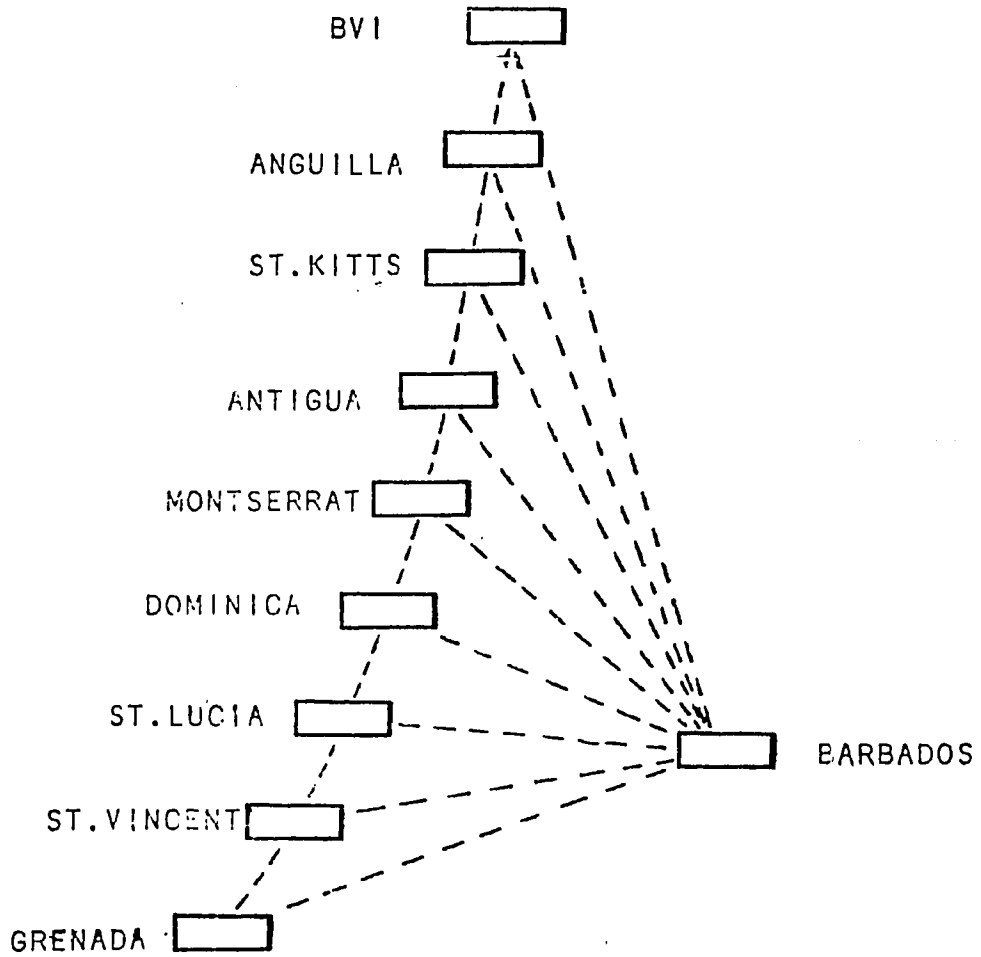

FIGURE 1. PARTICIPATING EASTERN CARIBBEAN COUNTRIES

- Establishing linkages between water utilities and existing EC training institutions; and
- Manager/Supervisor training.

Following endorsement by the countries of this innovative proposal, a detailed "Program of Activities"* was designed for the period October/77 through to December/78 and said document became the guide for the initial steps to implement those recommendations contained in the April/77 "Assessment".

4. THE CARIBBEAN BASIN WATER MANAGEMENT PROJECT

The four major activities of the project during 1978 are:

1. Development of the Training Delivery System (TDS) organization;
2. Training of Trainers;
3. Development of Training/Job Manuals; and
4. Manager/Supervisor Workshop and Premier Briefing.

4.1 DEVELOPMENT OF THE TDS ORGANIZATION

The objective of this phase of the project is to develop the human resources, an organizational framework and linkages between EC water utilities as well as with existing local training institutions for a self-sustaining waterworks Training Delivery System.

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*Full title of document "AMRO-2174 Project - Caribbean Basin Water Management - PROGRAM OF ACTIVITIES (Oct./77 to Dec./78)"

It is proposed that:

- A National/Regional Office of Training Coordination (OTC) in the Barbados Waterworks Department (BWWD) be established.
- BWWD staff this office with a Training Coordinator, an Assistant Training Coordinator and a Secretary.
- The Eastern Caribbean Water Utilities be encouraged to nominate one of their own staff members as local training coordinator. The intent is that coordination of training be performed as a prime responsibility rather than overtime work. The local training coordinator through his water authority manager, will provide the linkage with the OTC in Barbados.
- Collaboration be provided by CIDA/PAHO on a "fade-out" basis through the AMRO-2174 project to establish and initiate the operation of said OTC and carry out on-the-job training of the OTC staff.
- The OTC will be established to perform a dual role in National (Barbados) and Regional (Eastern Caribbean) waterworks training.
- Starting with the third year, at least 50% of the salary of the Regional Training Coordinator will be provided, on a cost-sharing basis, by the smaller islands through payment of a training fee from each water utility budget. (Such a fee could be established on the basis of numbers of water employees).

- For each fellowship trainee processed, an additional handling fee of EC$10.00 is suggested.
- The functions of this National/Regional Office of Training Coordination would be divided between national duties for Barbados and a coordination role on an international basis.

On a NATIONAL basis, the OTC will serve as the nerve center for a national training delivery system for Barbados, and would perform the following:

1. To monitor and forecast national manpower requirements in the water sector.
2. To evaluate training materials from other Training Offices or the WHO International Reference Center, and modify as required to meet specific needs of the country's trainees.
3. To develop training manuals and teaching aids.
4. To make contractual arrangements for the national or international training resources, e.g., institutions, instructors, courses, etc.
5. To maintain up-to-date information on local, national, regional and international training options (courses, institutions).
6. To select and develop the instructors and trainers who will form part of the national training delivery system.

7. To plan, organize and coordinate (also implement in some cases) local and national training programs.

8. To establish an "accountability" system for providing the Training Coordinator and top management with qualitative/quantitative evidence of training effectiveness giving due consideration to cost/benefit indicators.

NOTE: The local Coordinator in each country will gradually assume like responsibilities.

On a REGIONAL basis, for all countries of the English-speaking Caribbean, it is intended that OTC play a supportive role to water utility training efforts and therefore its proposed functions would be:

1. To facilitate the interchange of information regarding training developments e.g., manuals, available courses, training methodology, teaching aids, etc.

2. To optimize the utilization of training resources within the region by maintaining and disseminating a master list of specialists; and a schedule of programmed courses in the various countries of the region.

3. To collaborate with water utility Training Coordinators on the basis of requests for advisory services, e.g., Short-term Consultants, instructional seminars, observation tours, etc.

4. To coordinate, where practicable, training courses within the region, in order to avoid duplication.

5. To assist the various water utilities in training of trainers and key water personnel.

4.2 TRAINING OF TRAINERS

The objectives of this phase of the project is to provide personnel already technically trained with the necessary communication skills and instructional techniques required to assist with or carry out training at their own utility as well as to assist with instructional programs in their specialities at other locations.

Despite the fact that the majority of top level managers and supervisors have received technical training in one form or another, only one has received any preparation for the role of instructor. These technically trained persons do represent a potential resource as waterworks training instructors.

Obviously, direct instruction of the employee by his supervisor is a very appropriate avenue for training. Unfortunately, for varying reasons, most supervisors do not always regard training in this form, or any other, as their job.

Supervisors in the water utilities, and existing instructors in the various training institutions are only vaguely familiar with performance-oriented training or with the basic communication skills required in the instructional process. They require preparation in these techniques.

During the "Training of Trainers", a concerted effort will be made to provide supervisory personnel with the perspective that

TRAINING IS A CONTINUOUS COMPONENT OF MANAGEMENT ACTION. With this orientation, and as supervisors and foremen become better communicators, day-to-day managing of their own employees should become more effective. Thus immediate in-service benefits are anticipated from the "Training of Trainers" Workshops.

A series of 3 Workshops and 2 intervening home study courses will be designed for implementation in each of the territories.

Four Vocational Training Instructors working in two 2-man teams, will complete 3 circuits through the Islands in order to carry this training course to the prospective local Instructors (Fig. 2).

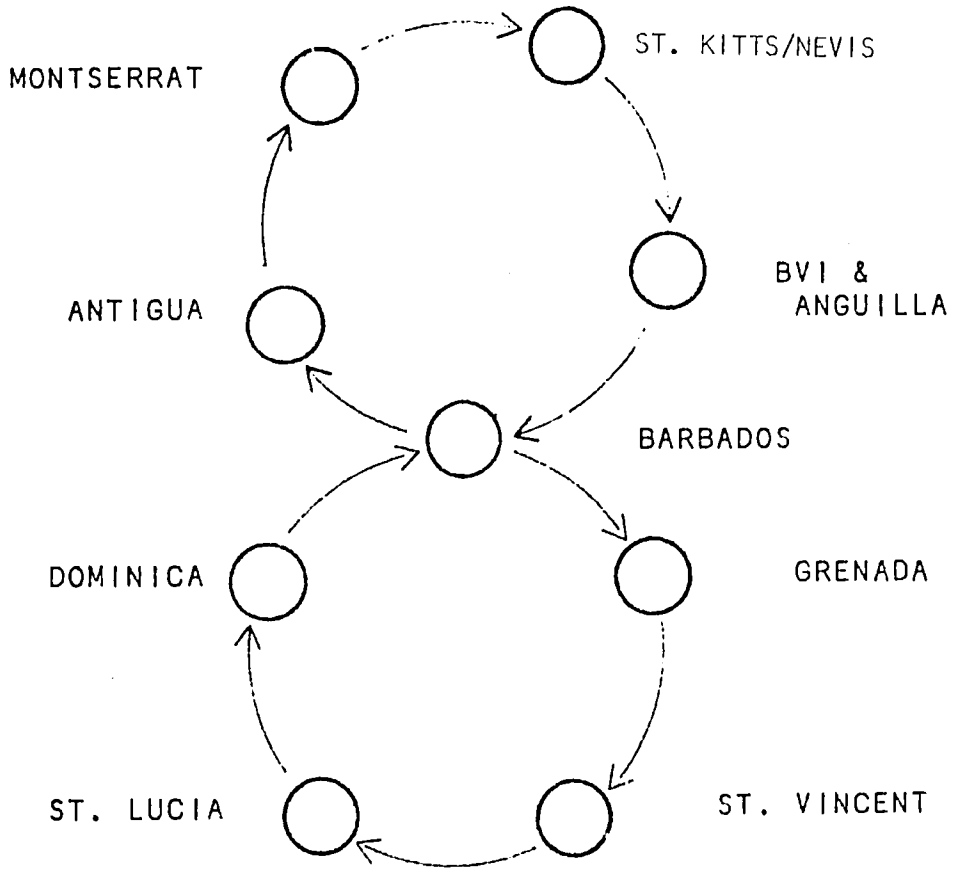


FIGURE 2. TRAVEL ROUTE (SCHEMATIC)

In order to minimize interruption of work at each utility, it is proposed that the 3, one-week, on-location workshops have a duration of 4 hours/day.

In each territory, the Instructors, in consultation with the local Training Coordinator, will be required to determine:

1. Which of the participants have potential for a future role as national and/or regional instructors;
2. Training priorities. Such information will provide the basis for determining which training/job manuals should be prepared during the following phase of the project and in which country;
3. Audio/visual aids required for future on-site training;
4. The availability of an illustrator who could assist during the subsequent phase when instructional materials are developed;
5. The availability of Government and/or commercial printing facilities.

Water utilities will be encouraged to arrange for the attendance of potential trainers from outside their own ranks, e.g., existing technical or trade schools and other departments of Government.

4.3 DEVELOPMENT OF TRAINING/JOB MANUALS

The objective of this phase of the project is to produce performance-oriented instructional materials and user manuals on-site which are appropriate to the local conditions and the academic level of the trainees.

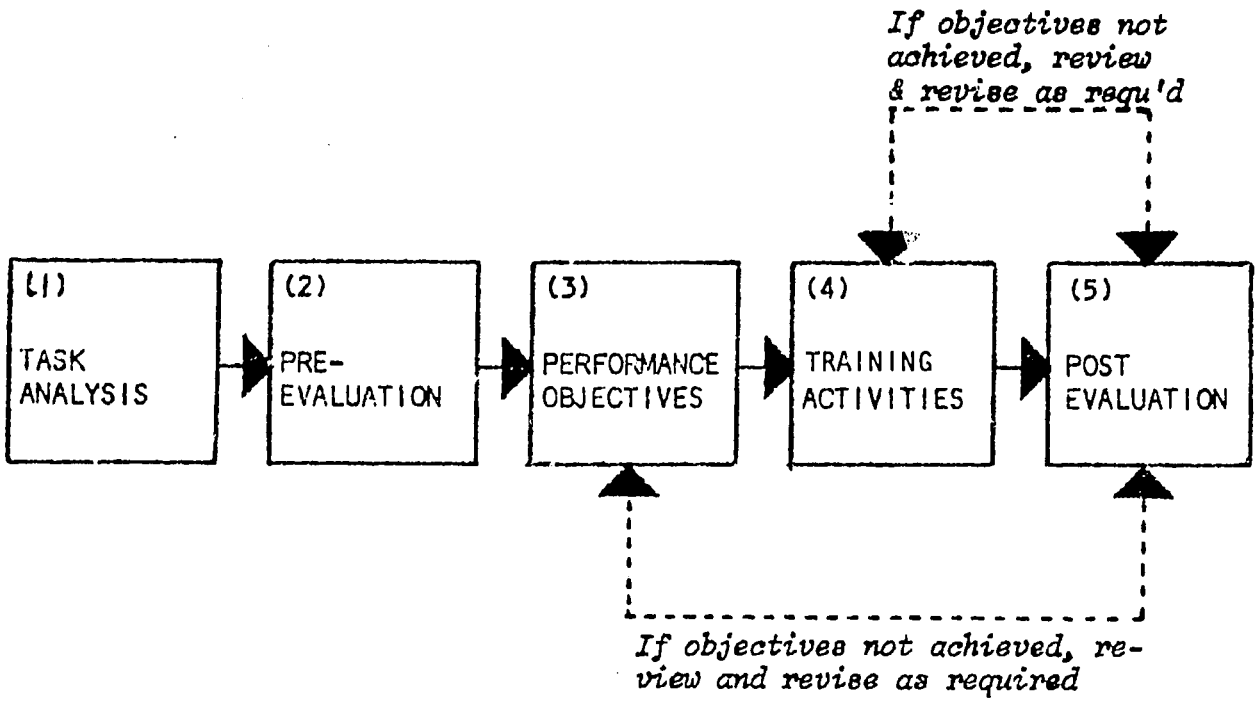
Performance-oriented instructional materials, i.e., training/job manuals, suitable for water utility personnel do not presently exist in the Eastern Caribbean Islands. Existing texts, and other teaching aids are oriented toward increasing the trainee's knowledge rather than improving his performance and providing him with a manual appropriate for his use as a reference in his work.

With the assistance of the instructors, it is proposed that the most promising of the newly trained instructors themselves develop Training/Job Manuals appropriate to the specific local conditions and trainees.

During the preceding phase of this project a detailed multi-island Training Timetable will be prepared, in collaboration with all the island Training Coordinators, to field test the instructional materials and trainers developed locally.

Special care will be taken to avoid unnecessary duplication. It is the intent to inter-change trainers, job obligations permitting, thus utilizing local expertise in the full spirit of technical cooperation among developing countries.

The thrust of the step-by-step development outlined in this program is toward a systematic approach to intelligent and creative training and can be illustrated as follows:



It is intended that materials developed during this phase be shared with all countries participating in the Eastern Caribbean TDS.

4.4 MANAGER/SUPERVISOR WORKSHOP AND PREMIER BRIEFING

The objective of this phase of the project is to:

1. Provide top level waterworks leaders with broader perspectives on how to assess internal and external factors that influence the well-being, effectiveness and future of their utilities. Further, to suggest options on how to adapt to the restrictions of the environment within which they work and the forces affecting their decisions.
2. Discuss with the Premier and top level decision makers of each country areas of critical importance

in the relationship of quantity, quality and management of water, e.g., the economic and social well-being of the country, the influence on foreign exchange earnings through manufacturing and industry, the tangible benefits of waterworks training etc.

A Working Group will be selected to plan, organize and assist with implementation of the two activities contemplated under this section. In order to provide the Working Group with further insight to both the managerial/supervisory and political intricacies associated with the operation of island water authorities, an EC Advisory Team will be enlisted whose members have this two-way experience.

The Working Group assisted by the Advisory Team will prepare a detailed outline of the proposed manager/supervisor course focusing on managerial/supervisory problems specific to the EC waterworks industry. Subsequently, the Working Group will design and implement a series of training modules, slanted toward trainee participation, which will serve to provide each participant with further insight into solving the day-to-day problems facing them in their work.

Inter-related to development of the manager/supervisor course will be the detailed planning and preparations for briefing sessions with top level political leaders in each country. The actual implementation of this activity will be carried out by the members of the Advisory Team.

5. TRAINING OF TRAINERS WORKSHOPS

5.1 OBJECTIVES

Upon completion of this series of Workshops the trainees in their normal work will be able to:

1. Perform a task analysis;
2. Write and evaluate performance objectives;
3. Demonstrate communication techniques on-the-job, in the classroom and workshop;
4. Demonstrate use of training aids;
5. Demonstrate question and answer techniques;
6. Develop and implement an instructional sequence on-the-job, in the classroom and workshop; and
7. Develop evaluation instruments.

5.2 SUGGESTED SELECTION CRITERIA

The Workshops are specifically designed for supervisory level personnel. Thus, to ensure that each utility chooses appropriate participants, selection criteria are suggested as shown in Table 1.

5.3 DESCRIPTION OF UNIT FORMAT

The three Workshops have been divided into a number of units and each unit into a number of lessons. Each unit is developed in a standardized format to facilitate use by instructors. Table 2 summarizes the components of each unit. The material included under "Instructional Plan for Each Lesson" will be repeated for every lesson in the unit. A description of each item of the unit format follows Table 2.

TABLE 1

SUGGESTED SELECTION CRITERIA

- The participant should:

1. As a minimum educational requirement, have attained a School Leaving Certificate;
2. Be a key person who will make a substantial contribution to training activities;
3. Be someone with enough remaining service time that a "return" can be realized from the training investment;
4. Be a person who has demonstrated an ability to improve employee performance on-the-job;
5. Occupy a position that has authority over other people (or will in the near future).

- Further, it is important that:

6. At least 20% of the participants be available for occasional short periods in the future to develop instructional materials;
7. The local training coordinator (person in the utility assigned to organize and implement training activities) be a participant;
8. A reasonable balance be struck between senior office staff and senior field staff;
9. That the manager of the utility participate in the training sessions to the maximum extent possible.

- In addition:

10. It may be found desirable to include some employees who are exceptions to the above suggestions.

TABLE 1 CONT'D

11. Utilities were to encourage to arrange for the participation of potential trainers from outside their ranks, e.g. existing technical or trade schools and other departments of Government.

TABLE 2

TOPICS TO BE INCLUDED IN EACH UNIT

- TITLE
- WHAT IS THIS UNIT ALL ABOUT
- WHY DOES THE TRAINEE NEED THIS
- WHAT DOES THE TRAINEE NEED TO KNOW BEFORE BEGINNING
- WHAT EQUIPMENT AND SUPPLIES ARE NEEDED
- NUMBER OF LESSONS AND TOTAL INSTRUCTIONAL TIME
- INSTRUCTIONAL PLAN FOR EACH LESSON
    - WORKSHOP NUMBER
    - UNIT NUMBER
    - LESSON NUMBER
    - ESTIMATED TIME
    - PREREQUISITES
    - INSTRUCTIONAL/PERFORMANCE OBJECTIVES
        - PERFORMANCE
        - CONDITION
        - STANDARD
    - INSTRUCTIONAL RESOURCES
    - INSTRUCTIONAL ACTIVITY
        - INSTRUCTOR ACTIVITY
        - TRAINEE ACTIVITY
    - EVALUATION ACTIVITY
- TRAINEE HANDOUTS
    - INFORMATION SHEET
    - WORK SHEET
    - ASSIGNMENT SHEET
    - OPERATION SHEET
- OVERHEAD TRANSPARENCIES, SLIDES, FLIP CHARTS, ETC.

TABLE 2 CONT'D

RESOURCE MATERIAL FOR INSTRUCTOR

NONCLASS ACTIVITIES

HOME STUDY ACTIVITIES

TITLE - Title of Unit.

WHAT IS THIS UNIT ALL ABOUT - A summary statement concerning the content of the unit.

WHY DOES THE TRAINEE NEED THIS - A brief explanation of why the trainee needs to master the material in this unit. This justification should state why achieving the objectives will enable the trainee to better perform on-the-job.

WHAT DOES THE TRAINEE NEED TO KNOW BEFORE BEGINNING - A listing of the skills and knowledge required by the trainee before beginning this unit of instruction. Reference may be made to the knowledge or skill needed or to a prior unit or lesson.

WHAT EQUIPMENT AND SUPPLIES ARE NEEDED - A listing of all equipment needed to carry out the instruction (such as AV equipment and demonstration apparatus) and the supplies (such as hand-outs and work sheets). These are to be listed for each objective.

NUMBER OF LESSONS AND TOTAL INSTRUCTIONAL TIME - The total number of lessons in the unit and the total time trainee and instructor will interact for the unit.

INSTRUCTIONAL PLAN FOR EACH LESSON - The instructional plan is composed of the several sections indicated in Table 2. Each lesson will have all these sections where they are applicable to the implementation of the lesson.

LESSON NUMBER - Number the lessons in the unit consecutively.

ESTIMATED TIME - Write the amount of time the trainee and instructor will need to spend to master the material in this lesson.

It is probably a good idea to estimate the time after you have completed the other sections of the lesson so that you can better estimate the required time.

PREREQUISITES - A listing of previous lessons needed by the traine before beginning this lesson. Where a series of lessons which follow one another are needed, then only list the last lesson of the series. If the prerequisite material is not in one of the previous lessons, then list the knowledge and skills required, (e.g., ability to use screwdriver, wire cutters, wire strippers, spanner and adjustable spanner).

INSTRUCTIONAL OBJECTIVE - The instructional objective is the core of the lesson as it spells out in detail just what is expected when the trainee has mastered the material in the lesson. It is composed of three sections: performance, condition and standard.

PERFORMANCE - A statement of what you want the trainee to do as a result of working on this lesson. Action verbs (e.g., write, adjust, lubricate, etc.) must be used which describe observable acts.

CONDITION - A statement describing the situation the trainee will be in when asked to carry out the performance listed above. This should be conditions as they will occur on-the-job. Thus it would contain a list of tools, equipment, books and other work conditions the trainee will encounter on-the-job.

STANDARD - A statement of the minimum level of performance which

the trainee must achieve when carrying out the performance above. This may be expressed as a percentage of correct responses, a time limit, a degree of accuracy, etc.

INSTRUCTIONAL RESOURCES - A listing of books, booklets, handouts, overheads, slides and other instructional materials for use by the instructor and the trainee.

INSTRUCTIONAL ACTIVITY - INSTRUCTOR ACTIVITY - A listing of activities that will enable the trainee to master the material in the objectives. Suggest as many and as varied activities as you can.

TRAINEE ACTIVITY. - A listing of activities other than those listed for the instructor that the trainee will engage in, independent of the instructor, to ensure mastery of the material.

EVALUATION ACTIVITY - A listing of appropriate methods to test whether or not the trainee has achieved the objective. The evaluation method must be appropriate to the performance called for in the objective.

TRAINEE HANDOUTS - INFORMATION SHEET - A summary of the material covered in the instruction session. This material may be a list, chart, figure or whatever is decided that the trainee should have to master the objectives.

WORK SHEET - Forms, charts or other sheets on which the trainees will carry out an assignment.

ASSIGNMENT SHEET - A statement of an exercise a trainee should perform (often with a work sheet) to practice so that the trainee will be better able to master the objective.

OPERATION SHEET - A step-by-step procedure for accomplishing an operation.

OVERHEAD, TRANSPARENCIES, SLIDES, FLIP CHARTS ETC - A listing of the instructional aids that are available for use by the instructor and trainee.

RESOURCE MATERIAL FOR INSTRUCTOR - The background material the instructor must be familiar with for this lesson. Since these workshops will be implemented in areas without resource materials, it is important that all materials be supplied with this guide.

NONCLASS ACTIVITIES - As indicated in sub-section 4.2, the workshop should be conducted only during a portion of the day. During the time the trainees are back on the job, the instructor should visit them in their work situation and amplify the material covered in the workshop. Thus this section suggests activites that might be considered for these visits.

HOME STUDY ACTIVITIES - During the period between the workshops the trainees should stay active in practising the objectives and implementing them in their day-to-day activities as a supervisor/trainee. This section lists activities that the trainees should carry out in their work situation so as to perfect their ability to implement the material.

5.4 CODING SYSTEM USED

UNITS	TITLES	
	TA	Task Analysis
	PO	Performance Objectives
	PT	Presentation Techniques
	IM	Instructional Media
LESSONS		
	L1	Lesson One
	L2	Lesson Two, etc.
SUBSECTIONS		
	IS	Information Sheet
	AS	Assignment Sheet
	WS	Work Sheet
	OS	Operations Sheet
	OH	Overhead Transparency
	RM	Resource Material
DATE		
	0178	Month (01) and year (78) material developed
EXAMPLES		
	TA.0178	Unit on Task Analysis developed in January 1978
	PO.L3.0178	Lesson Three of Unit on Performance Objectives developed in January 1978
	PT.IS.05.0178	Information Sheet five of Unit on Presentation Techniques developed in January 1978

OUTLINE

UNIT (U)		LESSON (L)	
NO.	TITLE	NO.	TITLE
1.	Task Analysis	1.	Task Analysis Concepts.
		2.	Definition and Identification of Tasks.
		3.	Definition and Identification of Operations.
		4.	Job Structure Flow Chart.
		5.	Analysing the Task.
		6.	Operation Breakdown.
2.	Performance Objectives	1.	Definition of and Reasons for Performance Objectives.
		2.	Performance Objective Components.
		3.	Writing and Evaluating Performance Objectives.
3.	Presentation Techniques	1.	Principles of Learning.
		2.	Factors Affecting Learning.
		3.	Instructional Methods.
		4.	The Instructional Plan.

TIMETABLE

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
..... Start	OPENING	U1 - L3	U1 - L6	U2 - L3	U3 - L4
Break					
	INTRODUCTION	U1 - L4	U2 - L1	U3 - L1	U3 - L4
Break					
	U1 - L1 Start L2	U1 - L5	U2 - L2	U3 - L2	RECAP
Break					
..... Finish	U1 - L2	U1 - L5	U2 - L2	U3 - L3	CRITIQUE AND CLOSURE

WORKSHOP 1 Training of Trainers

UNIT I *TASK ANALYSIS*

WHAT IS THIS UNIT ALL ABOUT

This unit describes the procedure for identifying Tasks, Operations and Steps of Positions. The trainee will learn how to ultimately identify operations for which training must be provided then list the steps and key points of such operations to determine the instructional content. By so doing, he will include only the must know and eliminate unnecessary or irrelevant information. In the long run the trainee will be able to standardise an approach to improving job performance of the persons he supervises.

WHY DOES THE TRAINEE NEED THIS

As the trainees prepare to upgrade the skills of the workers under his supervision, he must be able first to identify the skills which are included in the tasks of the workers. He therefore needs to develop the techniques of analysing tasks to identify such skills.

WHAT DOES THE TRAINEE NEED TO KNOW BEFORE BEGINNING

The trainee must be proficient in the knowledge and skills required by the workers he supervises, and be able to communicate effectively in his language to the standard of the ninth grade level or equivalent of the public school system.

WHAT EQUIPMENT AND SUPPLIES ARE NEEDED

ITEM	LESSON-OBJECTIVE							
	1		2	3			4	
	1	2	1	1	2	3	1	2
Information Sheets	X	X	X	X	X	X	X	X
Assignment Sheets			X	X	X	X	X	X
Work Sheets			X				X	X
Overheads	X	X	X	X	X	X	X	X
Overhead Projector	X	X	X	X	X	X	X	X
Graphics				X	X	X		
Flip Chart	X	X	X	X	X	X	X	X
Chalk Board	X	X	X	X	X	X	X	X

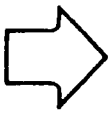
NUMBER OF LESSONS AND TOTAL INSTRUCTIONAL TIME

Total Lessons: 4

Total Time: 6½ hours

WORKSHOP 1 Training of Trainers

UNIT 1 Task Analysis

LESSON 1  *TASK ANALYSIS CONCEPTS*

ESTIMATED TIME 30 minutes

PREREQUISITES Trainee must be able to communicate in the written and spoken 'word' to the standard of the Grade 9 level or equivalent of the public school system.

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  provide a valid definition of Task Analysis; and

  explain the function of Task Analysis in supervision/training.

- Under the following condition:

  by recall after 30 minutes of class presentations and discussion.

- To this standard:

  80% correct.

INSTRUCTIONAL RESOURCES

Information Sheets TA.IS.01 and TA.IS.02

Overhead Transparencies TA.OH.01 - TA.OH.09

Resource Material TA.RM.01

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Discuss the broad functions of the supervisor.
2. Explain how knowledge of the job being supervised makes or breaks the quality of supervision.

3. Discuss the ways in which task analysis provides the supervisor with knowledge of the job for his supervision.
4. Define Task Analysis and direct the understanding of the definition.
5. Discuss attempts made by supervisors to find out about jobs to improve their supervision.

TRAINEE ACTIVITY

1. Trainees to list their broad functions avoiding including specific activities.
2. Trainees to explain to the class ways in which:
   a) Knowledge of the job aids and increases the quality of supervision.
   b) Lack of knowledge of the job hampers effective supervision.
3. Trainees to explain how task analysis assists the supervisor in ensuring maximum productivity of the crew.
4. Trainees to explain the definition given and define in their own terms task analysis.
5. Trainees to list five ways in which supervisors have attempted to use details in their supervision.

EVALUATION ACTIVITY

1. Oral spot checking of the highlights of presentation:
   a) Define task analysis.
   b) List two functions of task analysis in supervision.
2. Evaluation of trainee's efforts in the training activity.

TASK ANALYSIS CONCEPT

The training of individuals in the performance of jobs associated with trades and industries enjoys a very special and important position within the structure of manpower training. To ensure that it fulfills its purpose, the training is based upon the job-tasks the trainee is expected to perform. The training curriculum is constructed to include no less than the minimum of skills, facts and attitudes required of the worker in the performance of his duties. The skills, facts and attitudes are identified through the medium of a complete and accurate identification and description of the tasks of the job and an accurate and complete identification and description of the requirements the job places upon the individual for successful performance. This, in short, constitutes the concept of Task Analysis.

Whilst the analysis method has been used principally by trainers it was developed initially:

a) To eliminate all unnecessary elements in performance.

b) To determine the most efficient method of performing each task.

c) To standardise equipment, methods and working conditions.

d) To train operators in standard methods.

e) To measure accurately the time needed for performing each task.

Task analysis therefore plays two vital roles in the World of Work: it first functions as a basis for objective supervision and secondly as a basis for efficient training. Because task analysis forms

the basis of the two broad functions of the supervisor, i.e., supervising the work activiites and training his crew, it has become the single most important skill or ability of the "The Modern Supervisor".

THE FUNCTION OF TASK ANALYSIS

Task analysis serves two very important functions, viz:

1. It provides the supervisor with the necessary information about the job which ensures better decisions, better planning and generally better supervision.
2. It provides the supervisor with the necessary information needed to identify training needs and initiate staff training.

HOW DOES TASK ANALYSIS HELP IN IMPROVING THE QUALITY OF SUPERVISION

Supervisors have primary responsibility for ensuring efficiency in the organization, in the sense that men, machines and facilities are to return maximum benefits to the organization. Supervisors make decisions within the organization, make projections and monitor the daily activities of the workers.

In order to carry out these performances efficiently, they need to know what is involved in each of these jobs. The demands they make on the workers and the decisions they take should be based on the facts of the job and the worker. Task analysis provides them with the facts of the job.

The analysis reveals details such as the skills, abilities, tools, materials, equipment, etc., needed for performance. Task analysis

1. ensures effective use of the organization, labour and facilities;

2. reveals unnecessary and wasteful procedures and operations; and

3. provides a basis for work measurement.

Task analysis is the single most important ability needed by supervisors who are efficient in their daily supervising roles.

WHERE DOES TASK ANALYSIS FIT INTO STAFF TRAINING

Many supervisors have failed to show any worthwhile returns for funds spent on staff training while others have failed to get funds approved for staff training. Why? Often the case for training is weak since it is not based on facts but rather on training sentiments etc. On the other hand, some have managed to provide some training but again often this training is not relevant. Training is intended to provide the missing skills or knowledge so as to improve performance.

What is the basis for staff training? When should the staff get training? What kind of training is to be given? What should be the content of the training? These are some questions which the supervisors must be able to answer before they embark on training.

How many supervisors can answer these questions? Few, if any. Why? These decisions are based on the facts revealed by the task analysis. As the analysis identifies the required skills, knowledge and attitudes of each operation, the supervisors can evaluate their workers and determine which of such skills are lacking and make provision to supply these through training.

Training which is provided after a task analysis will not only prove relevant but efficient all round and this will become more obvious as one proceeds through the succeeding discussions.

TASK ANALYSIS CONCEPTS

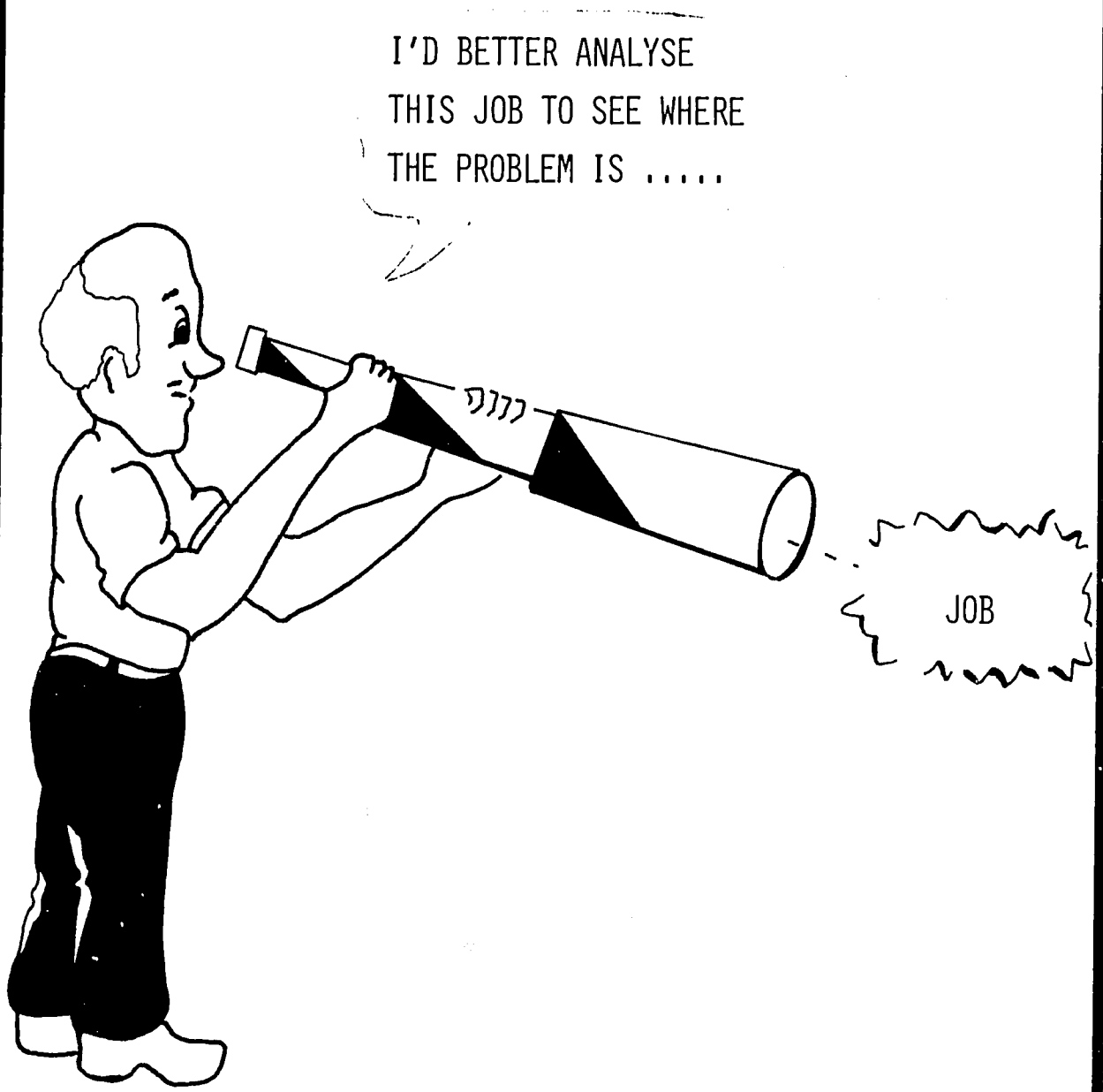
OBJECTIVE

- TO DEFINE TASK ANALYSIS
- TO EXPLAIN THE FUNCTIONS OF TASK ANALYSIS IN SUPERVISION/TRAINING

TA.OH.01

- DO YOU MAKE UP A LIST OF DUTIES FOR YOUR CREW?
- DO YOU EXPLAIN TO YOUR CREW WHAT TO DO IN PERFORMING AN OPERATION?
- DO YOU SHOW OR EXPLAIN AN EASIER WAY OF DOING SOMETHING?

  - YOU HAVE ALREADY DONE SOME TASK ANALYSES



THE SUPERVISOR MUST ANALYSE THE
JOB TO SEE WHERE THE PROBLEM LIES

TASK ANALYSIS IS A METHODICAL PROCESS

OF BREAKING DOWN A TASK INTO OPERATIONS

AND STEPS

TASK ANALYSIS . . . . .

PROVIDES THE SUPERVISOR WITH THE NECESSARY INFORMATION ABOUT THE JOB WHICH ENSURES BETTER SUPERVISION.

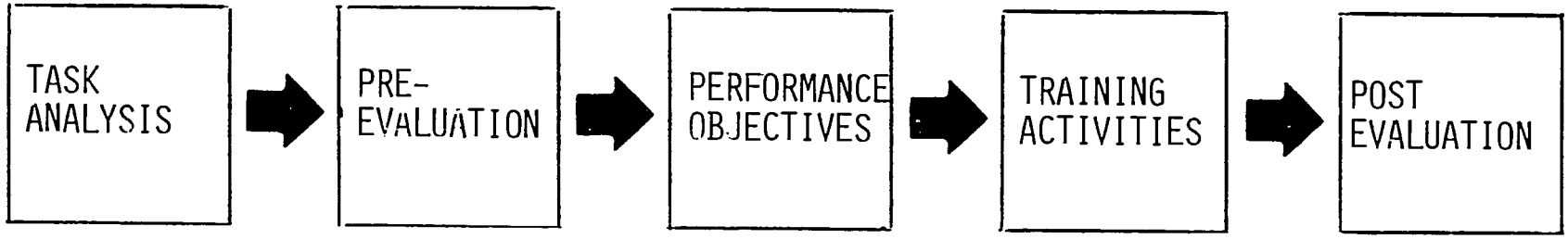
TASK ANALYSIS . . . . .

PROVIDES THE SUPERVISOR WITH THE INFORMATION NEEDED TO INITIATE EFFICIENT STAFF TRAINING.

TASK ANALYSIS LEADS TO IMPROVED
WORK PERFORMANCE

TA.OH.06

SYSTEMATIC APPROACH TO TRAINING



THE ONLY VALID BASIS FOR TRAINING IS A CAREFUL ANALYSIS OF THE TASKS OF THE JOB

TA.OH.07

TASK ANALYSIS REVEALS:

- SKILLS
- KNOWLEDGE
- ATTITUDES

WHICH WORKERS NEED FOR EFFICIENT PERFORMANCE

TA.OH.08

REVIEW

- DEFINE TASK ANALYSIS USING YOUR OWN WORDS
- LIST THE TWO WAYS IN WHICH THE SUPERVISOR CAN USE DETAILS OF A TASK ANALYSIS
- LIST IN THE ORDER AS THEY ARE PERFORMED THE FIVE (5) ACTIVITIES OF THE SYSTEMATIC APPROACH TO TRAINING

ANALYSIS AND SYNTHESIS OF WORK

Generally speaking, the crafstman or technician usually employed to teach his trade or technology was elected primarily because he had excelled in the work customarily performed on his job. He had mastered the required skills, developed a practical understanding of the theoretical requirements of the job, and through hard work and determination, had achieved pre-eminence among his colleagues.

Such credentials are excellent, and fundamental among requisite qualifications for new trade-technical instructors. Even so, they provide little assurance by themselves that an experienced worker will be able to teach individuals the skills and knowledge essential to successful job performance. Teaching is an altogether different job or occupation from that of the craftsman or technician. Teaching requires of the individual a mastery of new techniques and methods of job performance. From the moment the change in jobs is executed, the expert craftsman or technician becomes a novice instructor and he remains a novice until training and experience brings about the desired transition. To make the change from one job to another is as difficult or as easy in proportion to the similarity or lack of similarity between the two. In this case the skilled worker benefits through the retention of old skills and knowledge in the subject matter content he will use in his new job. However, to assume that he will be as successful teaching others the rudiments of the job as he was in performing them, is a concept without any basis. In teaching others successfully, he will need to comprehend the psychological

and social changes involved in the learning process as well as what to teach, the order of teaching, how to teach, and numerous other important activities.

For the inexperienced trade-technical instructor, the what-to-teach can present serious difficulties, not because he is unskilled or lacks knowledge in the job or trade, but rather because he excells in these characteristics. To him the job is structured as a whole, yet it will have to be presented and learned in part. To accomplish this will require a systematic analysis followed by a thorough synthesis. Each task or element of the job must be identified and described to determine essential skills, facts, and attitudes to be learned and then restructured into a comprehensible whole that is significant to the learner. For an experienced worker who has reduced a cognizance of the skills and job knowledge to a series of habits, this is a difficult task indeed.

A considerable amount of the work performed by a skilled worker has become habitual or second nature to him. Naturally, little thought is given to much of what he does or how he may do it. Years of experience in work performance and problem-solving have simplified the entire range of duties and responsibilities inherent with the job. First principles that once had to be learned are no longer fresh in mind. Many of the complex things that were difficult to learn will seem so simple and obvious he may assume they are common knowledge. Very likely he will fail to realize the extent of the vast array of facts and skills he has mastered. Furthermore, because of his great ability, what he teaches could very well be beyond the power of the learner to assimilate. This is ample justification for expanded efforts in organization geared to prevent such an occurrence.

Organization must be learned and developed. Where the individual previously had developed organized procedures for job performance during the course of his work experience, he would recognize the need for organizing his course of study. As a result of his experience, he is acquainted with and is knowledgeable about the factors involved in the trade or technology he is to teach. If he has a weakness, it is in organizing these factors in some sort of logical sequence to promote and facilitate the learning process. His own experience is of little help to him in this determination, because it was based upon production with little consideration for easing the complexities of his own learning situation. Besides, once he had become skilled in the tasks and duties of his work, his recollection of what he learned and how he learned probably became rather vague. Having had no reason to analyze his job in relation to skills, facts and attitudes -- previous to his employment as an instructor -- he would experience considerable difficulty in determining the proper relationship of skill to fact, or fact to attitude within the learning situation.

Experienced as well as inexperienced instructors have difficulty in determining these relationships. The problem presents itself the moment they attempt to write the teaching sequence of skills and facts to be presented. A skill or fact, to be learned, should be based upon a skill or fact already learned. Where a new skill has little or no relationship to previously learned skills, it would be reasonable to assume that a skill or fact that would provide the necessary connection is missing. To develop the proper sequence it is necessary to have <u>all</u> occupational information. To depend upon one's memory of the facts

available is no guarantee that the teaching plan will be effectively and efficiently organized.

JOB INFORMATION

The initial step in organizing for implementation of some desired action is to secure the facts, get them accurately, and get them all. In the world of work these facts are sometimes classified as occupational information on the basis they describe an individual's work and its related environment. The description is not related to the characteristics of the individual but rather to the physical conditions (sometimes cultural) affecting him. In general, occupational information is the medium for the study of requirements the job places upon the worker for successful job performance, but not necessarily the determination of job requirements.

Usually occupational information is second hand; that is, it is gathered or selected from sources other than the original or primary source. Guidance counsellors, for example, use resource material published by various agencies, notably the United States Government Printing Office which publishes for all Federal Agencies. In 1934 the United States Employment Service established an occupational research program to gather and publish pertinent information for use in its nationwide system of local offices. The Dictionary of Occupational Titles, currently used by all counsellors and personnel specialists, was an outgrowth of the interest generated by this program. The Bureau of Labour Statistics of the United States Department of Labour publishes and distributes the Occupational Outlook Handbook which provides general information about the world of work as well as brief descriptions of various jobs.

Trade-technical instructors are also indebted to publishers for

texts and reference books, to trade associations for journals and periodicals, and to the various Government agencies for information about jobs and the national economy. Such information is vital if one is to maintain an effective and on-going program of work. Without such competent assistance in collecting and processing this information, much of it would never be available to the instructor and the learner would be the loser.

Although few would refute the importance of this information to the instructional program, all would agree that its origin is secondary, not first hand. Such information is useful in the function provided by counsellors and instructors to assist students in making wise decisions concerning careers or vocations. But once the decision or choice has been made, there is little that general occupation information can contribute to any subsequent design or goal. At this point specific occupational information is needed to implement the decision which was based upon the general information. The need for specific information occurs simultaneously with the change in emphasis. This is illustrated by the shift of interest in the broad occupational field to a more specific portion or area of the field. Here, interest is focused upon a specific job with unique characteristics.

Occupational information, as a definitive term, is too general to be used with clarity in discussing characteristics unique to one job. For this task, we need to be more specific. A more appropriate term that would describe satisfactorily our meaning, would be job information. Job information is specific and exact. It describes in detail the skills, abilities, responsibilities and knowledge required for successful worker

performance in only one job. Tasks of the job are identified and further described in relation to: (1) what the worker does; (2) how he does it; (3) why he does it; and (4) what he needs to know to do what he does. Consequently, the compiler of these facts must turn to the primary source to secure the desired information.

THE MEASUREMENT OF WORK

Modern industry began not with the factory, writes Daniel Bell, but with the measurement of work.[1] And from the record, measurement of work began with Frederick W. Taylor. Taylor, an unusual individual by any standard, could not tolerate idleness in men or machines. He was stricken with an obsession for efficiency so that most of his wakeful hours were spent in analyzing the motions of people, oftentimes, so his critics stated, even insignificant motions or movements. An essential part of his analysis incorporated precise timing with a stop watch. Jobs had been timed before but only in their entirety. What Taylor did was to break down a job into its constituent elements through a systematic process of analysis, time each element, and re-arrange them into the most efficient combination.

Taylor achieved fame in 1899 when he taught a Pennsylvania Dutchman, named Schmidt, how to move by hand forty-seven tons of pig iron in one day, over thirty-four tons more than was customarily handled on the same job by one man. Through analysis, all elements of the job were identified, recorded, and re-arranged by Taylor - how much weight to carry, when to pick up the iron, how to pick it up, how to carry it, how to put it down,

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[1] *Daniel Bell, Work and Its Discontents (Boston: Beacon Press, 1956) p.53*

how to load it, when to rest, how to rest, and the like.

Taylor's experiments helped him develop and refine his techniques of analysis and synthesis to such an extent that they became the accepted standard throughout industry. Management became scientific. Each man's work could now be measured by itself with a degree of accuracy no one had thought possible.[2] Once this was understood, the established of time rates for each element performed by the worker could be set and his pay computed in units of fractionated time and the amount of work done.

Although Taylor's accomplishments lay in the field of management, his techniques of analysis and synthesis were adopted in other fields, notably in personnel administration. Here, there was a great need for job facts, particularly in hiring, training, and placing workers on the job. When industrial establishments were small, foremen usually hired their own men off the street, but as the size of operations increased, foremen were compelled to spend so much time supervising that they were unable to spare the time necessary to interview and hire new workers. In time this function, a prerogative of foremanship, was assigned to men specially trained in personnel administration. It became their responsibility to provide foremen with workers qualified to perform the tasks each job required. These men, in the new job of personnel management, used Taylor's analysis as the fundamental method of obtaining job facts from which they wrote their job descriptions that were used in hiring and placing workers.

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[2] *Frederick W. Taylor, The Principles of Scientific Management (New York: Harper & Brothers, 1947). pp.40-48.*

Additional refinement and further development of Taylor's process of scientific management -- later to be called methods engineering, then methods analysis -- occurred as a result of experiments carried out by Frank G. Gilbreth and his wife Lillian. Like Taylor before them, they stressed the importance of the detailed study of methods. In his younger days, Gilbreth had been am apprentice bricklayer and had noticed, among other things, that most bricklayers practised three ways of performing the same task; one that was used when working at a normal rate under optimum job conditions, another when working slowly, and a third when teaching apprentices. Such interesting behaviour fascinated Gilbreth who sought out the latent reasons behind it. With his wife's help, he set up a laboratory where he could duplicate working conditions and for the rest of his life applied scientific methods to the measurement of work. From this scientific approach came his greatest achievement, the technique of motion study.

Through his attempts to measure work, Gilbreth sensed the need for some kind of measureable unit or units that would remain constant, regardless of changing conditions. He could calculate or measure work mathematically in the manner of the physicist, but this was irrelevant to what he had in mind. He wasn't interested in work that was measureable in any known units. His interests lay in analyzing work into measureable units that would lead to a valid method of eliminating useless or needless work.

As a fledgling bricklayer's apprentice, he studied the movements of each bricklayer on the job where he was working and in short order, identified the wasted motion (effort) involved in each man's work.

He reversed the customary relationship between apprentices and journeymen by becoming the teacher rather than the learner. Within a year he was laying bricks faster than any experienced man on the job. With his knack for analyzing the movements of his teachers, he was able to make improvements in their methods, discarding long and tedious motions and devising new, shorter motions to replace them, requiring less effort. He designed a scaffold that could be raised easily to the working height of the wall under construction on which he placed his loose brick and mortar. This eliminated the necessity of bending over -- and in this position, selecting a brick, turning it various ways to place the best face outward -- and returning to an upright position. By using his unique scaffold, he had only to grasp a brick with one hand and a trowel full of mortar with the other. Convinced of the advantages presented by this unusual scaffold, Gilbreth's foreman built identical ones for all the men on the job.

In much less time than was usually required, Gilbreth was promoted to foreman in charge of his own crew. As a foreman he was able to introduce his innovative ideas and train his men to use his new methods. The results were astounding. New records were established with each succeeding contract. As a consequence, he was promoted again, this time to construction superintendent. With this promotion came the opportunity to install his methods throughout the company structure. His success at every level of operations within the company encouraged him to resign and establish his own construction company. Although this venture proved highly successful, he gave it up to devote full time to the development of the technique of motion study.

About the time Gilbreth became a foreman, his concept of measurement of work began to take shape. His experience in methods analysis had revealed to him the critical importance attached to motions in the successful performance of any task. This being true, he reasoned that the logical unit of measurement was a unit of motion. Further research and development convinced him that there were seventeen distinctively different types of motion or (in contrast) lack of motion. Each one of these conditions could be termed a unit of motion including instances of lack of motion, or still motion. Further, how each one was used could determine how easy or difficult one's work would be. To describe these units of motion he coined the word "therblig" (named for himself; Gilbreth spelt backward, with one slight variation).

To clarify the meaning of the term therblig, an illustration will be useful. Suppose a customer has driven his automobile into the service station, and, in response to the attendant's inquiry replies, "fill it up with super." The attendant knows where the nozzle is located in relation to the gasoline pump, but first he has to locate it with eye and hand. This represents the therblig "search". Next he "grasps" the handle of the nozzle with his hand. Then he "transports loaded," carries the nozzle to the gasoline tank. This is followed by repetition of the above three stated therbligs in relation to the gasoline tank cap. He "positions" the nozzle in the gasoline tank and "releases load." There are twelve remaining therbligs not used in the activity just described. However, it is sufficient for the moment to remember that any motion can be described using all or part of the seventeen therbligs.

Gilbreth analyzed each tank to determine the therbligs involved,

then set about to eliminate any that were unnecessary, or at the least to reduce the time necessary to perform each one. The latter might be accomplished by rearranging the parts or materials one is working with to reduce the time required for "search" and "select". Of course, improved economy of motion would result where it would be possible and practical to utilize two therbligs simultaneously. For the sake of efficiency, he reasoned, both hands should not be idle at the same moment except during periods of "rest". Where both hands were in motion they should be moving in opposite and symmetrical directions. Any violation of these rules would result in wasted motion.

Because industry is constantly concerned with devising methods that increase production and reduce costs, a great deal of emphasis has been accorded the entire scope of "work study". Engineers responsible for production have found it a valuable and useful technique for maintaining the competitive position of a plant or establishment. They have refined it, and improved it until it has become an essential ingredient in the successful operation of any medium or large scale enterprise. As a technique it is continuously used, even in the same operations, because it can never be considered complete. Today's costs may be satisfactory and competitive but in a comparatively short time the situation could change due to new or improved innovations in other parts of the industry.

Work study requires extensive use of analysis to determine the nature and scope of the tasks the worker is expected to perform and the acceptable standard of quality of the work done. Since production or output is the primary factor of interest, the analysis would reveal all details affecting output -- tools, materials, processes, speeds,

working conditions, and the like. Its purpose would be threefold: (1) to insure effective use of the organization, labour, and facilities; (2) to reveal unnecessary and wasteful procedures and operations; and (3) to provide a basis for work measurement.

The principle tool of engineers in work study is "methods analysis". As Gilbreth developed it, methods analysis is the process of (1) analysing each task to eliminate all unnecessary elements, (2) determining the most efficient method of performing each task, (3) standardizing equipment, methods, and working conditions, (4) training operators in the standard method, and (5) determining by accurate measurement the time required to perform each task. Within the scope of this definition, methods analysis incorporates a series of tasks to secure results. First a systematic analysis of the job in question is carried out to determine its task and to break them down into their basic elements. Then a careful study is made to identify any non-essential element(s) that could be discarded without harming in any way the efficiency of the worker. Next, attention is directed to the development and implementation of the most efficient methods to be used in performing each task of the job. This last step is completed after a series of time studies are run with various combinations of equipment to determine the optimum working conditions. When the method, equipment, and working conditions have been standardised, then all workmen are trained in the standard method.

The philosophy, which guides industry in the development of training programs, is displayed in an illuminating and succinct statement by Dodd and Rice. "The accomplishment of a job is both the end to be

attained and the means for instruction."[3] Anything other than a quick examination would reveal the latent meaning contained within this statement. First, the main objective of industrial training is to help individuals develop the required ability for job performance. This is the desired and hoped-for end result. Secondly, the criteria for measuring the individual's performance would be determined. Then the measured results would be compared with an acceptable standard of job performance. The standard could be established only through analysis and synthesis of the job to be performed.

It should be remembered that the company is paying the costs of the training program and that these costs must be absorbed with production costs. Cooper illustrated this in a concise manner:

> *It is right and proper that all employee training should show results in direct savings in operating costs...job training should cut production costs; safety training should definitely lower the frequency and severity rates of injuries to workers; sales training should increase sales; public relations training should result in unquestionable, measureable improvement in public attitude toward the organization.*[4]

Employee training is required to produce concrete results in terms of measured improvement in employee conduct and performance.

As educators, involved in training individuals in the best methods of work, we are deeply concerned with the approach to problem-solving initiated by industry. Since our product, the trained workman, is to be employed by industry; we must insure that he is competitive

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[3] *Alvin E. Dodd and James O. Rice, How to Train Workers for War Industries (New York: Harper & Brothers, 1942), p.3.*

[4] *Alfred M. Cooper, Employee Training (New York: McGraw-Hill, 1942), p.8.*

with all other products produced by all other means or methods used throughout the country. To do this properly, we must be just as concerned with the end result as is industry. The end product of our efforts should be as valuable and as qualified to perform work tasks for industry as the product of industry's own efforts. We are compelled to practice the same diligence as industry in preparing the individual to discharge his duties as a semi-skilled or skilled workman. To achieve these objectives will require as much expertise in the use of analysis and synthesis as that practised by methods engineers and personnel management people. Consequently, we need to acquaint ourselves with the methods evolving through industrial innovation in principles of production. For us methods analysis becomes more than a pattern of operation; it becomes the means of operation. It provides us with direction,beginning with planning a program of training and ending with placement and follow-up of trainees. From beginning to end the steps are laid out so we can follow with surety, confident that the goals anticipated will be achieved. The five steps in methods analysis are listed in figure 1 with parallel events in the schedule of preparing individuals for useful and gainful employment.

PRINCIPLES OF JOB ANALYSIS

Job information is the basic material used in manpower training to bring about change in an orderly and systematic manner. The type of job information required in training varies in regard to the kind and degree of change desired and in the area of work in which the change is to occur. Consequently, the information secured and used as a basis of change must be accurate, complete and presented in a form suitable for

METHODS ANALYSIS

INDUSTRY	
1. Job Analysis Complete and accurate identification of the tasks of the job. Complete and accurate description of the tasks of the job. Determination of the requirements the job places upon the individual for successful performance.	1. Job Analysis Complete and accurate identification of the tasks of the job. Complete and accurate description of the tasks of the job. Determination of the job requirements the job places upon the individual for successful performance.
2. Restructures the job. Eliminates unnecessary elements. Adds useful and beneficial elements.	2. Task Analysis and Synthesis. Eliminates unnecessary elements. Adds useful and beneficial elements.
3. Standardizes methods of work, equipment, and working conditions.	3. Course construction.
4. Trains worker in standardized methods.	4. Trains learner in standardized methods.
5. Evaluates results.	5. Evaluates results.

FIGURE 1

the study and use of a variety of individuals in a number of different ways. Chief among these would be the training director, the advisory committee, and the instructor. To insure the accuracy and completeness of the information secured, a systematic method for collecting and tabulating is required. The method used in securing and reporting job information is termed "Job Analysis."

The term "Job Analysis", as used in this text, is defined as the process of identifying and describing the tasks of the job and determining the requirements the job places upon the worker for successful performance. The processis accomplished through various means; among these are observation, questioning, interviewing, studying, and reporting.

Job Analysis is the breakdwon of a job into its tasks and elements and the identification of the skills, facts, abilities, and responsibilities required of the worker for successful performance. Pertinent information for the breakdown is obtainable only through on-site visitation, observation, questioning (worker and supervisor) and study of the facts recorded after the visit. The analysis is complete when written in report form after the manner of good technical writing and when referred to, is called a Job Analysis Schedule. In order to comprehend completely and fully the meaning and implications of this definition, the analyst must know exactly the reasons for the analysis and the types of information he must obtain. For our purpose, we intend to use the information obtained through job analysis to construct a practical and useful course of study. To accomplish this worthwhile project we need to know what the worker does, exactly how he does it, precisely why he does it, and why he does it that way.

When the analysis is complete and the job analysis schedule (JAS)

is ready to be used, a casual inspection will reveal to the reader that the JAS is divided into three basic parts. For training purposes these are:

1. A complete and accurate identification of the tasks of the job.
2. A complete and accurate description of each task of the job in terms of its elements.
3. The requirements the job places upon the individual for successful performance.

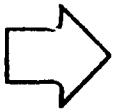
If the analysis is to be of value, it has to be complete and accurately constructed. If not, it will mislead anyone who may have occasion to use it. For instance, it would be impossible to completely and accurately describe the tasks of the job if the analyst was unaware of one or more tasks. Because of this it is essential that the analyst "leave no stone unturned" in his search for and identification of the tasks of the job he is analysing. Observation of the job being performed by the worker is important but, alone, it may not be sufficient to enable the analyst to identify all the tasks. This is particularly true in occupations where the tasks are not performed in chronological sequence. The time required of the analyst to witness the performance of all tasks in jobs of this type might be prohibitive. To counteract this limitation, the analyst relies upon the interview technique to identify those tasks he might otherwise fail to observe during the course of his on-site investigation. Questioning of both the worker and his immediate supervisor will bring to light the existence of the remaining unknown tasks.

Once all tasks have been positively identified, the analyst is

chiefly concerned with the problem of constructing a written description of each task that is both complete and accurate. Furthermore he can state, without equivocation, what the worker does. To describe the tasks, or what the worker does, requires additional treatment by the analyst. For the description to be complete and accurate, he must relate precisely how the worker performs the task in terms of the elements that make up the task. He must list the elements in the order they are performed, if the task is cyclical in structure; or in a series of related groups, if the task is functional in structure. These criteria will be discussed in greater detail in the WORK PERFORMED section of the job analysis schedule.

WORKSHOP 1 Training of Trainers

UNIT 1 Task Analysis

LESSON 2  *DEFINITION AND IDENTIFICATION OF TASKS*

ESTIMATED TIME 60 minutes

PREREQUISITES Lesson 1 of this Unit and proficienct in the knowledge and skill of positions he supervises.

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  define tasks and identify tasks of specified positions.

- Under the following conditions:

  using the positions under his supervision after a sixty minute workshop discussion.

- To these standards:

  each task to meet the criteria as stated and each definition to represent 80% accuracy.

INSTRUCTIONAL RESOURCES

Information Sheet TA.IS.03

Overhead Transparencies TA.OH.10 - TA.OH.13

Resource Material TA.RM.02

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Introduce and explain position as 'post' or title.

2. Explain the fact that each position represents one worker and each worker has specified tasks - use TA.OH.10 and TA.OH.11.
3. Define task using TA.OH.12. Discuss the details as the definition is analysed.
4. Discuss the characteristics of task - use TA.OH.13 - discuss each characteristic timely.
5. Discuss tasks in relation to list of duties contained in job descriptions.
6. Discuss the description of task - use TA.IS.03.

TRAINEE ACTIVITY

1. Trainee to list the several positions which are in the utility.
2. Trainee to identify some tasks of some of the positions listed.
3. Trainee to give examples of mental and physical tasks and explain tasks as fundamental work unit.
4. Trainee to explain each characteristic giving example from utility jobs to illustrate details.
5. Trainee to review list of duties and identify tasks using the characteristics of tasks as a guide.
6. Trainee to describe task identified, as guided by trainer.

EVALUATION ACTIVITY

1. Assessing the results of the efforts in the trainee activity.
2. Trainee compiling a list of the tasks of the positions he supervises.

3. Listing the four characteristics of tasks.

4. Defining task as discussed.

All activities to be assessed according to the objectives stated.

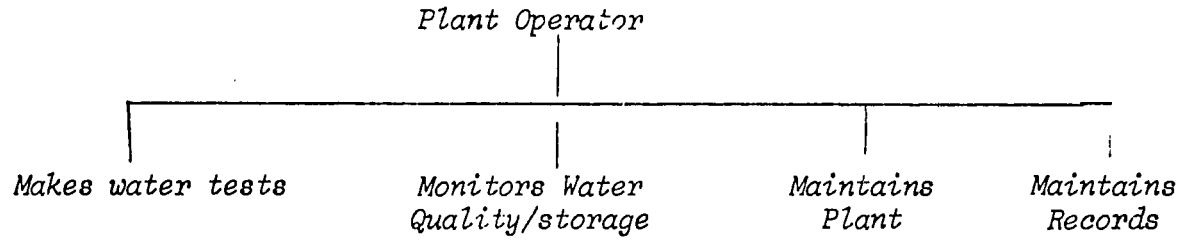
DEFINITION AND CHARACTERIZATION OF TASKS

A task is recognized whenever human efforts - physical or mental - is exerted for a specific purpose. It is the fundamental work unit involving methods, procedures, or techniques required to accomplish a major or significant part of the job.

Whether the effort exerted is tangible (i.e., physical) or intangible (i.e., mental) each task has certain distinguishing characteristics.

1. It is considered a major responsibility of a worker.
2. It requires a significant portion of his working time.
3. It involves work operations which utilize closely related skills, knowledge or abilities.
4. It is performed for some purpose, by some method, according to some standard, with respect to speed, accuracy, quality or quantity.

Below is a list of the tasks attached to the position of Plant Operator.



(When this particular operator was interviewed these tasks met all the above-stated characteristics and were therefore accepted as Tasks. Make a similar listing for the positions under your supervision then test them against the four characteristics stated above.)

Tasks represent the major responsibilities of a position. In this respect *"Makes a Chlorine Test"* would not be considered a task as this is only one activity of the overall responsibility which is *"Makes Water Tests"*. If the four characteristics of tasks given above are used, it would be easy to distinguish Tasks.

The position of a water utility auto servicemen would have the following tasks listed:

1. Lubricates automotive chassis.
2. Services and refills gearbox.
3. Drains and refills crankcase.
4. Replaces oil and air filter.
5. Repacks front wheel bearings.
6. Maintains work stations.

Note here that each task begins with an action verb; this is so because these details were actually arrived at by the asking of the question *"what the worker does"*. In the example cited above, the question produced the responses, *"lubricates automotive chassis, etc."* Note that the use of long sentences were avoided and the tasks were described as clearly and succinctly as possible.

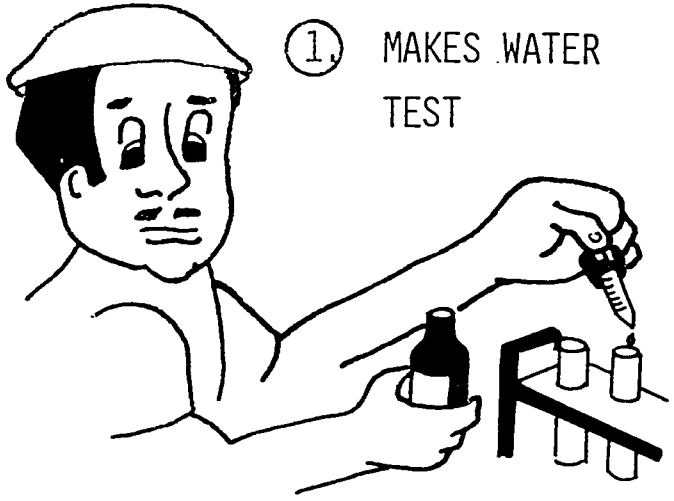
The following guidelines will help to ensure proper description of tasks:

1. A terse direct style should be used.

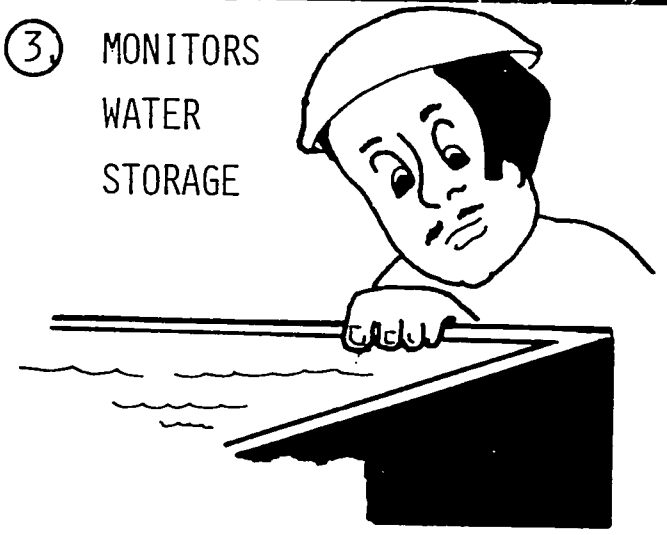
2. Each statement should begin with an action verb.
3. The present tense singular should be used throughout.
4. All words should impart necessary information: the others should be omitted.

HI! ... I'M REDMAN!
I OCCUPY THE POSITION
OF PLANT OPERATOR
CWA
WATER TREATMENT
PLANT

TA.OH.19



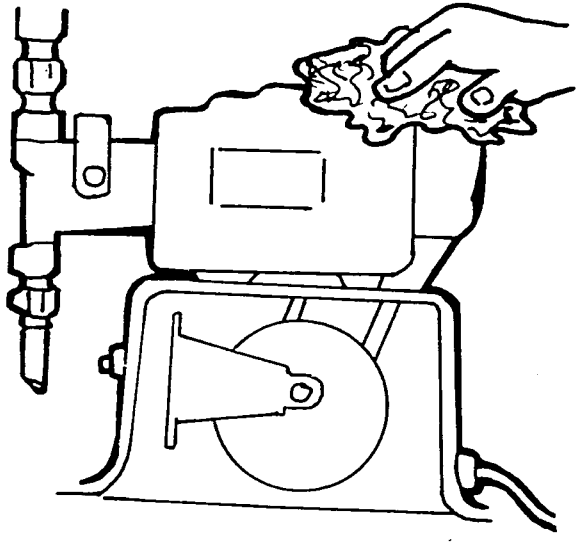
1. MAKES WATER TEST



3. MONITORS WATER STORAGE

OPERATOR REDMAN BUSY AT HIS TASKS

2. MAINTAINS RECORDS



4. MAINTAINS PLANT

TASK DEFINITION

- A TASK IS RECOGNIZED WHENEVER HUMAN EFFORT IS EXPENDED - MENTAL OR PHYSICAL - FOR A SPECIFIC PURPOSE.

- IT IS THE FUNDAMENTAL WORK UNIT INVOLVING METHODS, PROCEDURES OR TECHNIQUES REQUIRED TO ACCOMPLISH A MAJOR SIGNIFICANT PART OF THE JOB.

TASK CHARACTERISTICS

- IT IS CONSIDERED A MAJOR RESPONSIBILITY OF ONE WORKER
- IT REQUIRES A SIGNIFICANT PORTION OF HIS WORKING TIME
- IT INVOLVES WORK OPERATIONS WHICH UTILIZE CLOSELY RELATED SKILLS, KNOWLEDGE AND ABILITIES
- IT IS PERFORMED FOR SOME PURPOSE BY SOME METHOD ACCORDING TO SOME STANDARD WITH RESPECT TO SPEED, ACCURACY, QUALITY OR QUANTITY

DEFINITION OF TERMS

In order to analyze a job, it is necessary for the analyst to understand the meaning of the term "job". This could prove to be difficult if one had to choose from the many meanings currently in use. Fortunately the United States Bureau of Employment Security has provided us with a concept compatible with job analysis. First, however, the concept will be easier understood if we involve two other terms: Task and Position.

A task is recognized whenever human effort -- physical or mental -- is exerted for a specific purpose. It is the fundamental work unit involving methods, procedure, or techniques required to accomplish a major or significant part of the job. The effort expended may be physical (carrying or pushing) or mental (thinking or planning). It may be exerted to produce a change in time, form, place, or possession, or to prevent a change in either or all of these directions. It may be tangible, like cleaning and adjusting a carburettor or intabgible, like forming necessary judgments. However, whatever the form or direction, each task will have certain distinguishing characteristics.

1. It is considered a major responsibility of one worker.
2. It requires a significant part of his time.
3. It involves work operations which utilize closely related skills, knowledge and abilities.
4. It is performed for some purpose, by some method,

according to some standard with respect to speed, accuracy, quality or quantity.[5]

The standard may be established by the worker through experience, by the supervisor through production schedules, or by order of management resulting from competitive pressures.

A position is created whenever enough tasks accumulate to require the services of one individual. Another way of defining position is to consider it as an aggregation of tasks (or duties) with related responsibilities requiring the services of one individual. It, too, has certain unique distinguishing characteristics.

1. It encompasses a definite set of responsibilities.
2. It requires full-time service from one individual worker.
3. It is composed of work involving related skills, facts, and attitudes.[6]

With this concept we are compelled to conclude that there are exactly as many positions in the United States as there are workers.

Carrying the idea still further, a job may be defined as a group of positions which are identical with respect to their major or significant tasks. To clarify the difference between position and job, an example is in order. Suppose that an establishment employs nine workers to repair automobiles. Each of these workers is employed in one position. We understand this because we know that a position is an aggregation of tasks

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[5] *U.S. Department of Labour, Training & Reference Manual for Job Analysis (Washington: G.P.O., 1965), p.6.*

[6] *Ibid., p.7.*

with related responsibilities requiring the services of one individual. Now if all nine workers are performing the same tasks over a specified period of time, then all nine positions are identical with respect to their major or significant tasks and as a result constitute only one job. On the other hand, suppose that three of the mechanics repaired only engines, three rebuilt front ends and repaired brakes, and three repaired transmissions and differentials. With this arrangement there would be not one but three jobs because an obvious difference in major or significant tasks is the result.

At this point it is imperative that a distinction be made betweeen a job and a trade. Though they may be, and often are, used interchangeably they are not the same thing. For our purpose now, let us consider a trade to be a "family of jobs" or an aggregation of related jobs. To illustrate, let us compare the jobs in the automotive mechanic's trade. An impartial investigation would reveal that most successful mechanics have specialised in some particular phase of repair or service. A short visit to the establishment of any franchised automotive dealer would convince one of the truth of this statement. Here would probably be found one or more of the following specialists: (1) transmission mechanic, (2) carburettor-electrical technician, (3) engine mechanic, or rebuilder, (4) brake and front end alignment mechanic, (5) lubrication specialist, (6) air conditioning mechanic, and (7) chassis mechanic. In addition, there would probably be other specialists in a separate department charged with the responsibility of repairing damaged automobile bodies.

Each of these specialists would be employed in one job and the corresponding job would be each man's occupation. All the jobs together

would sum up the trade. The trade would include all efforts to repair and maintain the automobile. Thus the trade is a family of jobs or an aggregation of related jobs.

Before concluding this section, it will be necessary to consider another important factor in developing a course of study, in this instance in automotive mechanics. A course of study should provide a sufficient number of planned experiences of acceptable quality for a graduating student to choose the job he likes best with the assurance that he can enter employment and be successful. However, there is no sure way of determining in advance what job a learner will choose as a livelihood. Therefore, he must prepare himself to enter all of the jobs listed previously. And, of course, it is the instructor's responsibility to provide the opportunities the student will need for this preparation. With what planned experiences will the instructor provide the student, for the purpose of learning essential facts, skills, and attitudes needed to insure his success in the world of work? This question cannot be answered completely until all essential experiences have been determined at the primary source, the job itself. But in this particular case, there is no specific job identified for which the trainee is to be prepared. And since he will be prepared to enter and successfully perform in no less than seven jobs, each job will have to be observed and studied and the pertinent information identified and recorded.

Another reason for turning to the primary source for job information for each of the seven jobs listed, is found in the limited background of the instructor; limited that is, to the extent of his work experience. In only the rarest of instances will a craftsman be found who is proficient

in all seven jobs. Where experiences are limited or totally lacking, it will be necessary for the instructor to study the job or jobs first-hand, in order to determine what skills are to be taught and where necessary, he will have to refresh his mind and practice anew essential skills. Even the experienced instructor will find it to his advantage to turn to the job periodically to up-date his awareness of old skills and techniques and to determine the extent of new developments and new techniques that have been introduced due to technological change.

The benefits to be derived from a skillfully conducted job analysis by an individual, experienced in the job being analysed, are numerous and important. In retrospect, it can be concluded that there are more skills and information comprising the body of content in a job or trade, than can be taught to beginning students, in the time usually allotted for such efforts. Consequently, to get the most out of organized vocational training in what to teach (skills, facts, and attitudes) must be established through a selective process. This means, that the essential tasks and information unique to the job or trade the trainees will be expected to perform, constitute the minimum to be taught. Essential tasks and information of a specific job can be determined only through job analysis. The results from analysis can be such that the experienced instructor will be able to:

1. List the elements of the job.
2. Rearrange the elements into appropriate learner tasks.
3. Visualize the job in its related parts.

4. Visualize all the tasks of the job.

5. Clarify many of his own misconceptions.

6. Arrange job skills and facts in a teaching sequence.

7. Maintain his competency in job skills and job facts.

8. Quickly become aware of any technical change in the job or trade.

One becomes proficient in the things one learns by doing them, rather than by reading about them and job analysis is no exception. It is realized, of course, that a great deal of effort must be exerted in studying the purpose of the analysis; techniques, formats and procedures to follow. Although such study is necessary, real learning, for the student of job analysis, begins when he attempts to analyze his first job. Comprehension of the techniques involved and confidence in his own ability to write an acceptable analysis schedule, generally spring from the sessions he has with his instructor in going over the analysis. Ordinarily from six to twelve clock hours of instruction in the techniques and procedures of job analysis, will be sufficient to provide the student with the necessary background for attempting his first job analysis. After that, a semester's experience in applying himself in analyzing a variety of jobs, will help the learner develop the skills and abilities needed to analyse, with reasonable efficiency, jobs.

WORKSHOP 1 Training of Trainers

UNIT 1 Task Analysis

LESSON 3 *DEFINITION AND IDENTIFICATION OF OPERATIONS*

ESTIMATED TIME 60 minutes

PREREQUISITES Lesson 2 of this Unit

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  identify and define operations.

- Under the following conditions:

  using guidelines given and with reference to tasks identified.

- To these standards:

  meet the criteria stated in guidelines by 80%.

INSTRUCTIONAL RESOURCES

Information Sheet TA.IS.04

Overhead Transparency TA.OH.14

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Review characteristics of task highlighting the fact that tasks contain operations.
2. Introduce and discuss defintion of operations.
3. Discuss the components and characteristics of operations - TA.IS.04.

4. List operations of selected tasks.

TRAINEE ACTIVITY

1. Trainee to recall characteristics of task and explain to class as requested.
2. Trainee to deduce definition for operations and explain with reference to TA.OH.14.
3. Trainee to explain details of the characteristics - involving closely related skills, knowledge and abilities, etc.
4. Trainee will review the tasks which they identified earlier and determine the operations contained.

EVALUATION ACTIVITY

1. Define operations and explain the relationship between tasks and operations.
2. Explain the characteristics of operations.
3. Review the listings of operations done in trainee activity.

All efforts to be assessed against the references in the workshop.

OPERATIONS

In introducing you to operations it is necessary to review one of the characteristics of Tasks viz., 'it involves work operations which utilize closely related skills, knowledge and abilities.' Operations are small units of tasks: their sum constitute the task. Another way of saying the same thing is that tasks are made up of operations.

Tasks being major responsibilities are accomplished through the performing of several operations. The Plant Operator *makes water tests* as one of his tasks but there are several water tests which he has to make. He therefore performs a series of tests each being an operation - Chlorine Test, Alkalinity Test, Jar Test, Bacteriological Test, etc.

Operations are performed through a series of significant actions called steps, e.g., removes tap, loosens locknut, etc.

Operations vary in their complexity: some operations are simple having a few steps, others are complex having many steps. Operations which have less than five steps are considered to be too trivial to be performed separately and may be combined with another related operation.

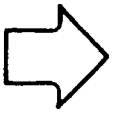
In training, operations are what is presented to the learner and so constitute the training topic.

Now select one of the tasks which you have identified and determine the operations which are involved. List these using the guidelines for describing task in describing these operations which you have identified.

BACT.
TEST
JAR
TEST
OP. 3
ALKALINITY
TEST
OP. 2
CHLORINE
TEST
OP. 1
WATER TESTS
HI! OPERATOR REDMAN
WITH YOU AGAIN! MY
TASKS HAVE SEVERAL
OPERATIONS . . . . .
HERE ARE 4 OPERATIONS
WHICH I PERFORM IN
MAKING WATER TESTS.

WORKSHOP 1 Training of Trainers

UNIT 1 Task Analysis

LESSON 4  *JOB STRUCTURE FLOW CHART*

ESTIMATED TIME 30 minutes

PREREQUISITES Lessons 2 and 3 of this Unit

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  determine the job structure of a given position; and

  develop a flow chart showing the job structure.

- Under the following conditions:

  using the data identified in lessons 2 and 3 of this unit.

- To these standards:

  reflect the guidelines and format of examples given.

INSTRUCTIONAL RESOURCES

Information Sheets TA.IS.04, TA.IS.05, TA.IS.06 and TA.IS.07

Assignment Sheet TA.AS.01

Work Sheet TA.WS.01

Overhead Transparencies TA.OH.15 and TA.OH.16

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Define Job Structure Flow Chart - schematic representation of the tasks and operations attached to a position.

2. Review examples on hand-out 05.06.07.

3. Discuss value of job structure flow chart to the supervisor.

4. Assign trainees to prepare job structure flow chart for one position.

5. Explain details of TA.AS.01.

TRAINEE ACTIVITY

1. Trainee to review example of job structure; then provide definition for job structure flow chart.

2. Trainee to study additional samples provided; then required to explain relationship between any two branches.

3. Trainee to explain how the supervisor can use such a chart in his supervision.

4. Trainee to list, on form provided, the required data to complete a flow chart for one position.

5. Trainee to carry out assignment as contained in TA.AS.01.

EVALUATION ACTIVITY

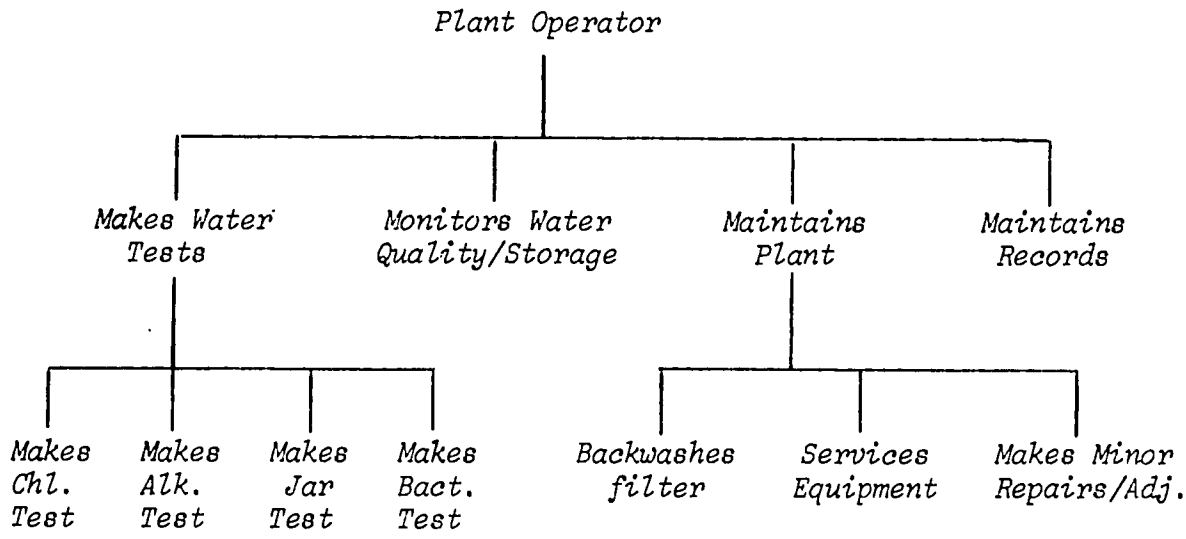
1. Assess all efforts of trainees against the criteria stated.

2. Spot check highlights by oral quiz -

   What is job structure flow chart?

   List two ways in which the supervisor can use it in his work.

JOB STRUCTURE FLOW CHART



The example shown above is a typical flow chart showing the job structure of the plant operator in a water utility. This flow chart may not match the details you may identify even for a position that is designated similarly, as positions will have different tasks and operations as we move from country to country.

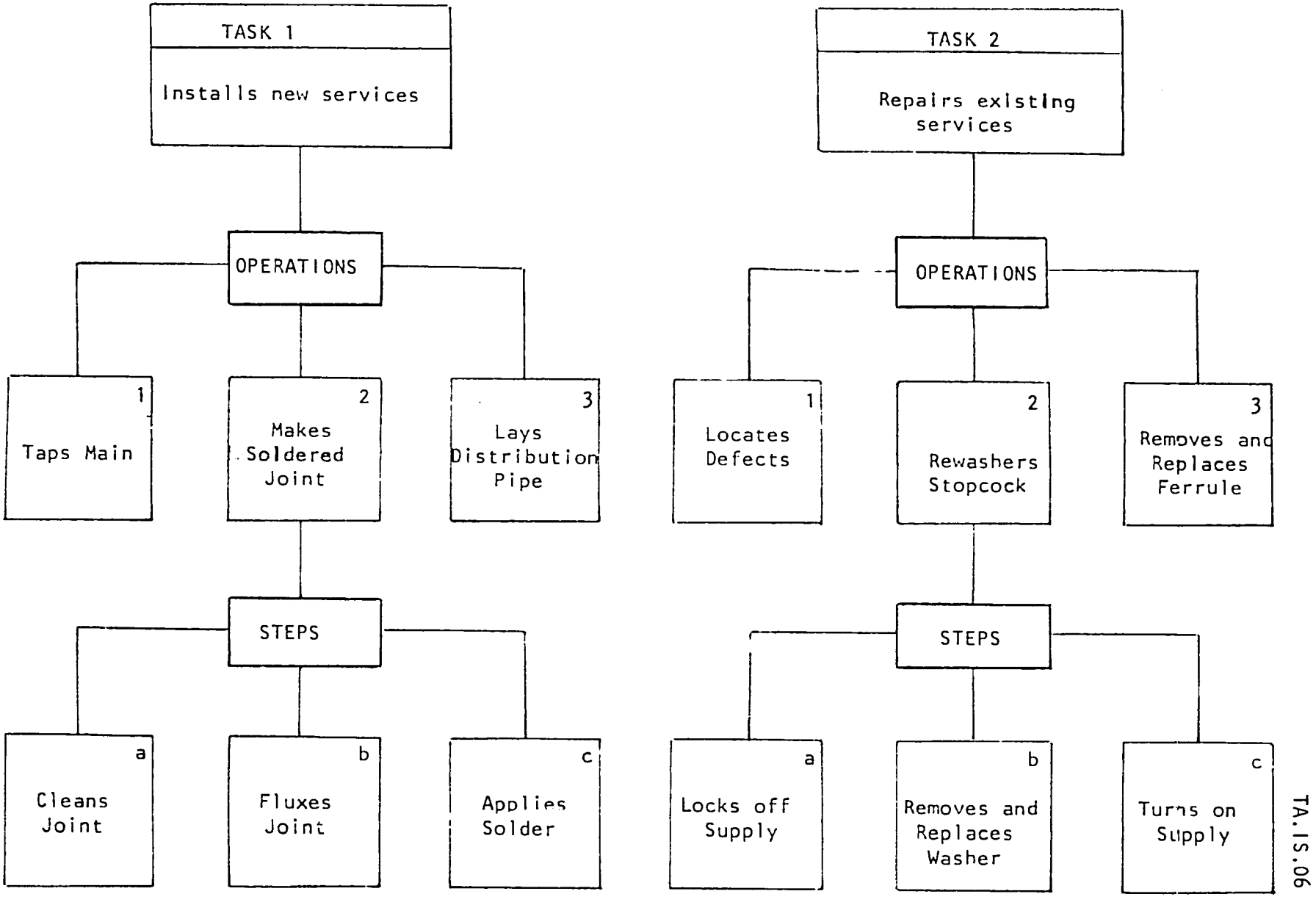
The idea being illustrated is however relevant. The flow chart will show the tasks attached to the position. Then each task will have its set of operations. Only two of the four tasks above have been analysed and their operations listed accordingly.

The job structure flow chart is a schematic representation of the details of job positions and by the method of branching illustrates how the tasks and operations are attached to the positions.

The value of job structure chart must be seen both in the monitoring of the worker's activities as well as in highlighting vividly,

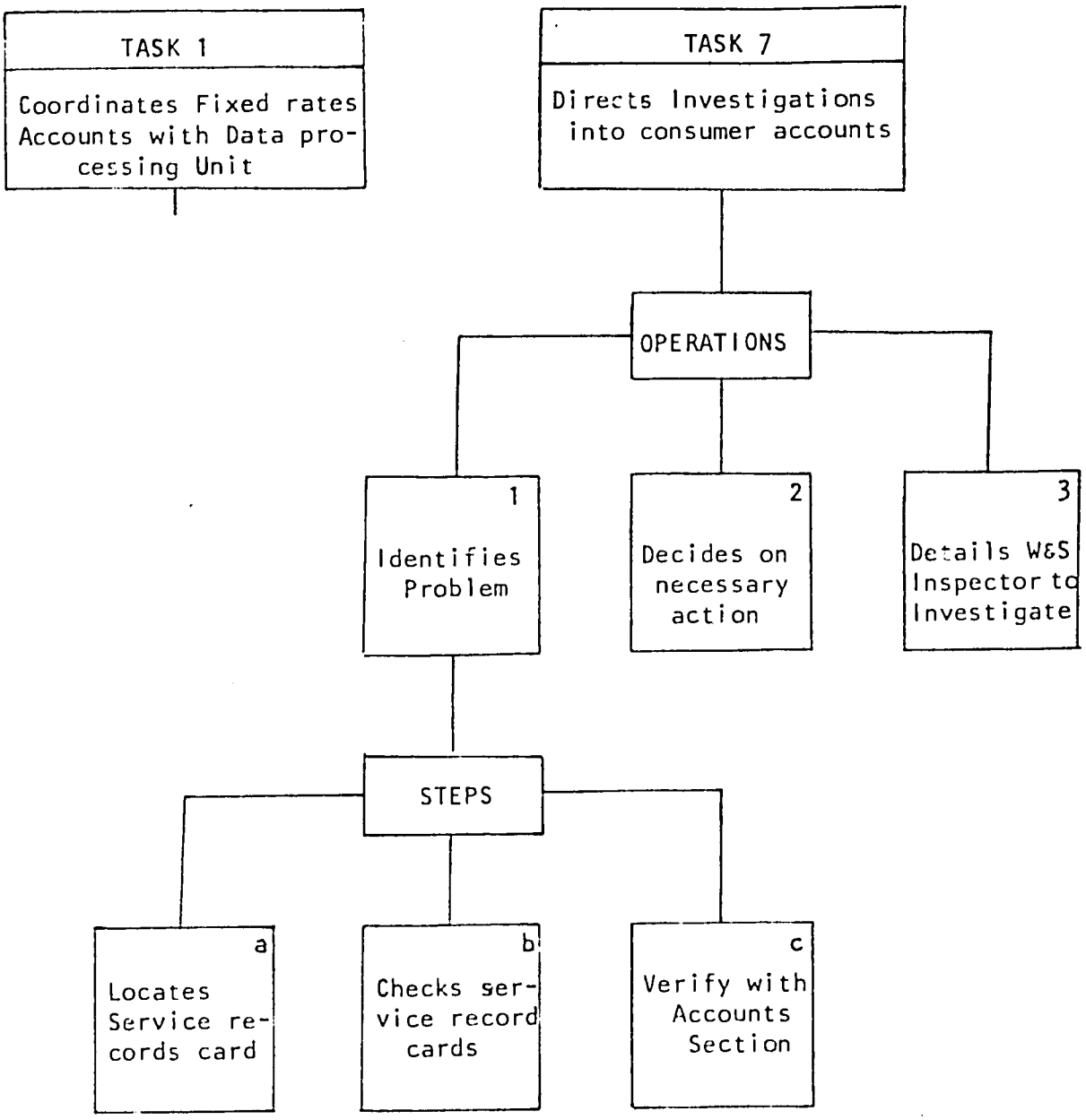
performances which have to be mastered if the organization is to function efficiently. It is recommended that each supervisor prepare such a chart for each position under his/her supervision. This should be displayed for easy reference of supervisor as well as workers.

POSITION: WATER UTILITY PLUMBER

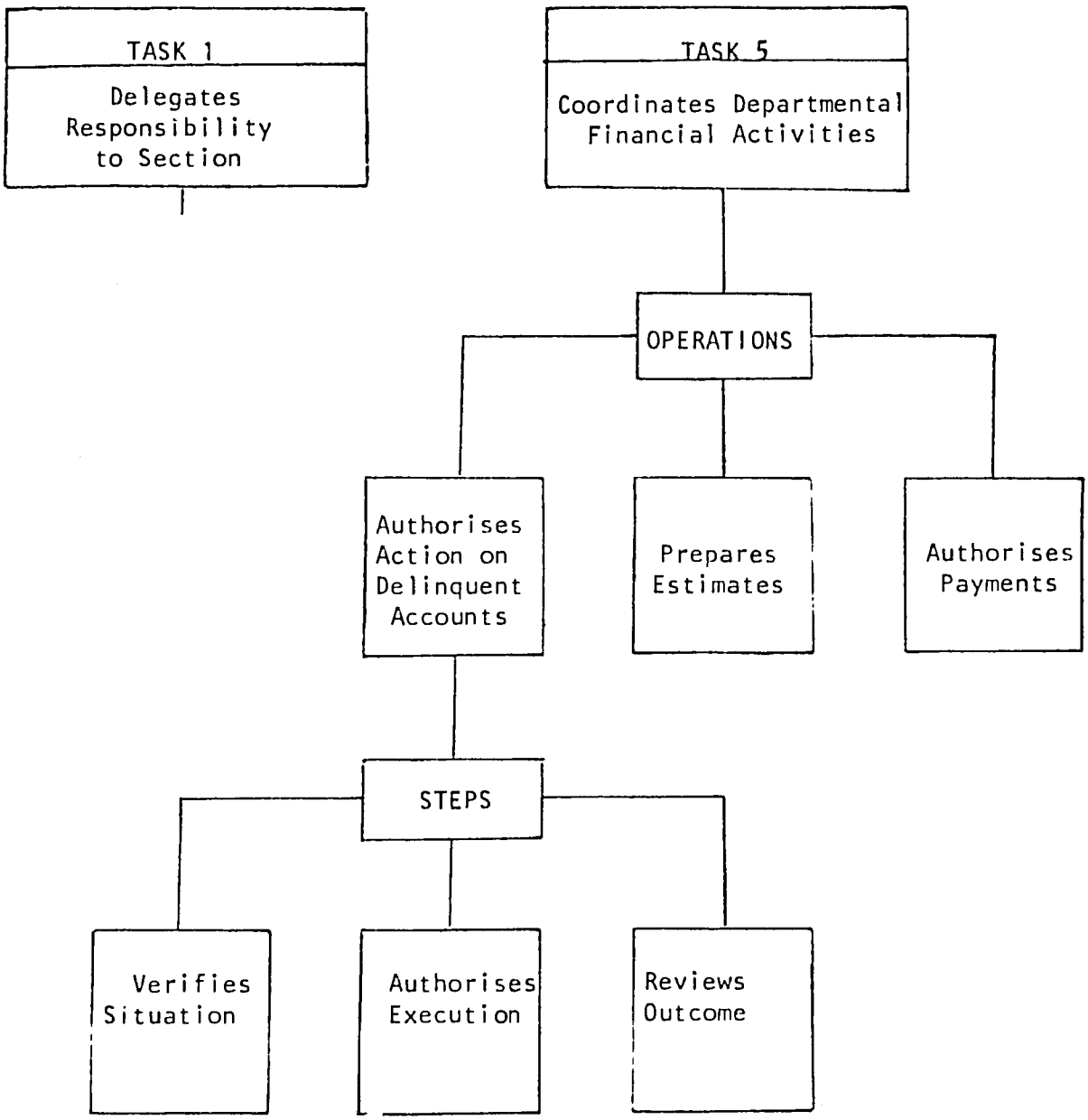


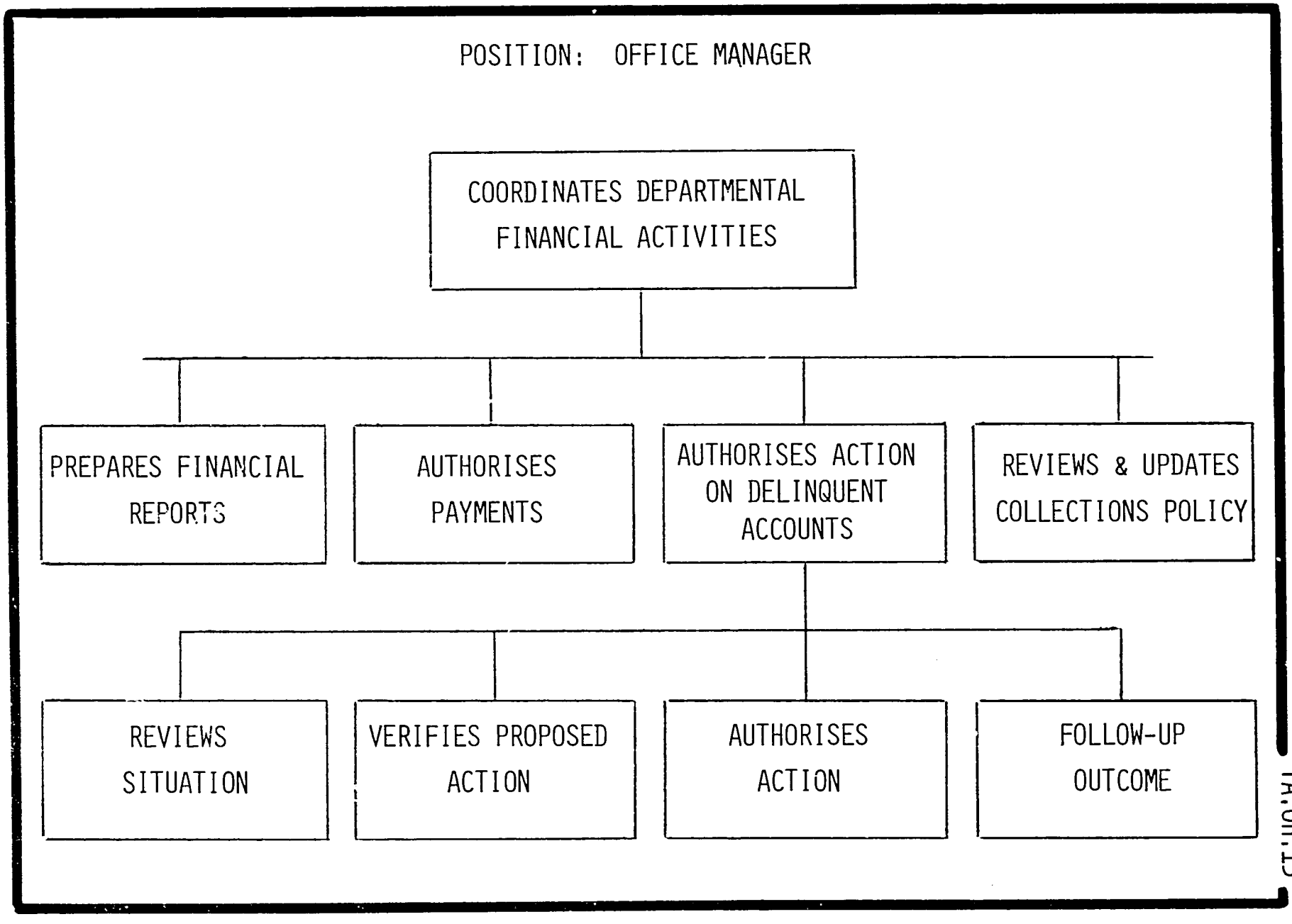
TA.IS.06

POSITION: ACCOUNTANT



POSITION: OFFICE MANAGER




POSITION: OFFICE MANAGER
COORDINATES DEPARTMENTAL FINANCIAL ACTIVITIES
PREPARES FINANCIAL REPORTS
AUTHORISES PAYMENTS
AUTHORISES ACTION ON DELINQUENT ACCOUNTS
REVIEWS & UPDATES COLLECTIONS POLICY
REVIEWS SITUATION
VERIFIES PROPOSED ACTION
AUTHORISES ACTION
FOLLOW-UP OUTCOME

TA.OH.15

POSITION: WATER UTILITY PLUMBER

JOB STRUCTURE FLOW CHART

INTRODUCTION

In beginning to understand the principles of task analysis, the analyst must first be able to identify the particular job structure that he is in. Once the structure is clearly identified, the remainder of the analysis process is significantly simplified.

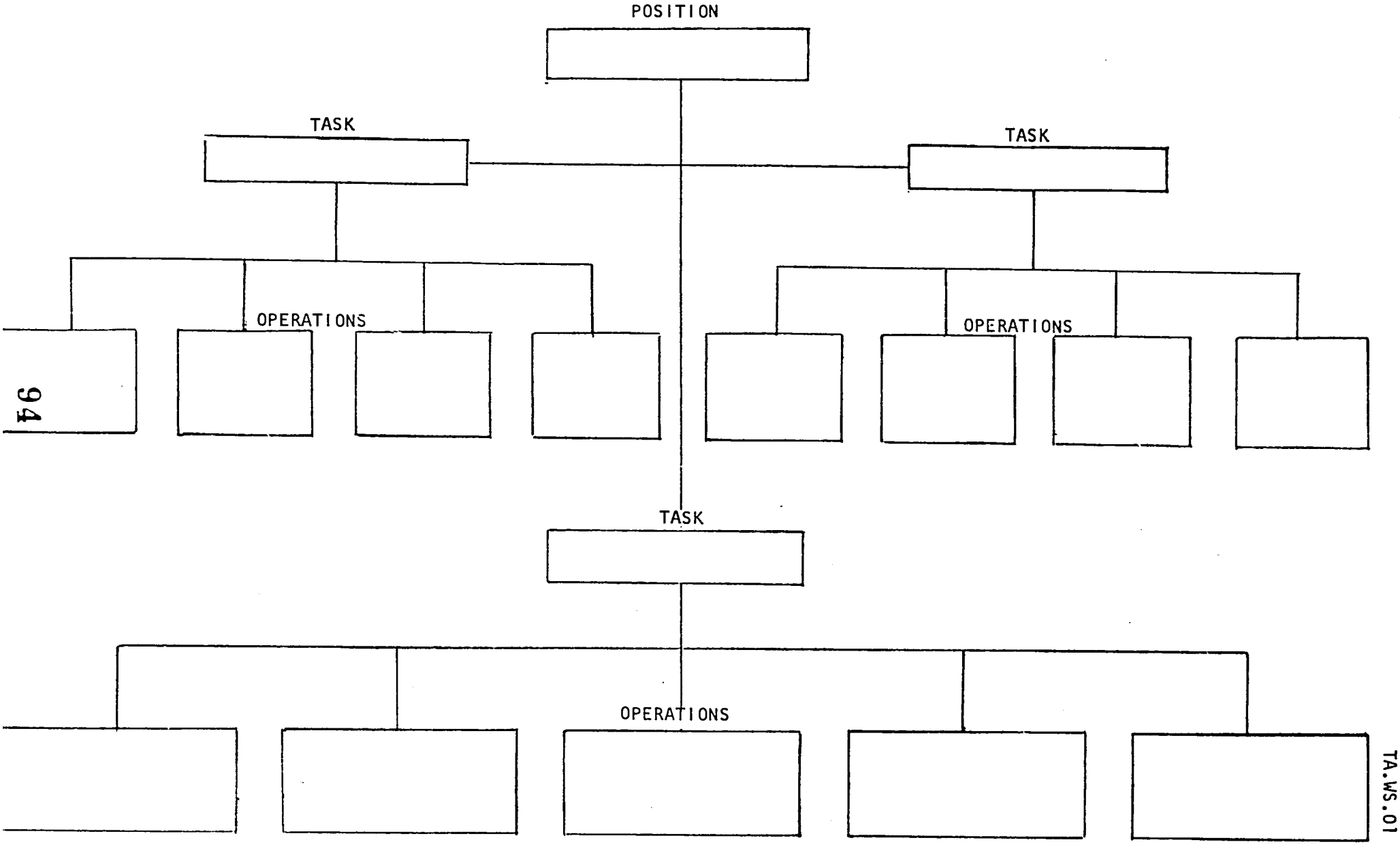
REFERENCE

1. Your own job position in your present organization.
2. Information Sheets TA.IS.03 and TA.IS.04.
3. Examples of "Job Structure Flow Chart" TA.IS.06, TA.IS.07 and TA.IS.08.

PROCEDURE

1. Review the definitions and characterization of task and operations given in the Information Sheets.
2. Study the samples given in TA.IS.06, TA.IS.07 and TA.IS.08. Seek whatever clarifications are necessary.
3. Make a study of the positions which you supervise or your own position. Clearly identify the task and operations which are included.
4. List these details on the Worksheet TA.WS.01 provided - where this sheet is inappropriate, prepare one of your own.

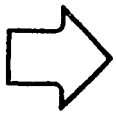
JOB STRUCTURE FLOW CHART WORKSHEET



TA.WS.01

WORKSHOP 1 Training of Trainers

UNIT 1 Task Analysis

LESSON 5  *ANALYSING THE TASK*

ESTIMATED TIME 90 minutes

PREREQUISITES Lessons 1, 2, 3 and 4 of this Unit

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  explain the details of the Task Analysis Sheet (TAS); and

  complete the TAS for specified tasks.

- Under the following conditions:

  using given TAS format and details from positions which are supervised.

- To these standards:

  meet the standards set out in the workshop and details should be clearly stated and representing 90% accuracy.

INSTRUCTIONAL RESOURCES

Information Sheets TA.IS. 09 and TA.IS.10

Assignment Sheet TA.AS.02

Worksheet TA.WS.02

Overhead Transparency TA.OH.18

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Review tasks and operations as listed by class.
2. Introduce and discuss TAS - use TA.OH.18.
3. Review details included and discuss points to observe - use TA.IS.10.
4. Review and clarify efforts made by trainee.
5. Assign activity and explain details expected.

TRAINEE ACTIVITY

1. Trainee to review his/her lists of tasks and operations.
2. Trainee to explain the several sections of the TAS, identifying the data required for each section.
3. Trainee to review details in TA.IS.10, explaining details as trainer requests such explanations.
4. Trainee to select one task identified earlier, then make out a TAS following TA.IS.10 as a guide.
5. Trainee to seek any necessary clarifications or explanations for conducting the activity.

EVALUATION ACTIVITY

1. Assess all the activities of the trainee against the background of the criteria in the objective.
2. Spot-check information by oral questions.

ANALYSING THE TASKS

Tasks are comprised of work operations so then tasks are analysed, work operations result. In analysing the tasks of the job, we attempt to identify the following details:

1. What the worker does (Operation)
2. How he does it (Step)
3. Why he does it
4. What he needs to know to do it

Our target should now be clear. Do we get all the needed information of the job by the time we have done this? If not all, then, do we get all the vital or important information we need, whether for restructuring the job or in order to provide needed training?

TASK ANALYSIS SHEET

POSITION: *Plant Operator*

TASK: *Makes Water Tests*

WHAT THE WORKER DOES? (Operation)	HOW HE DOES IT? (Step)	WHY HE DOES IT?	WHAT HE NEEDS TO KNOW?
Makes Chlorine Test	*Mixes water sample with orthotolodine and matches colour in comparator.*	*To ensure the correct chlorine dosage in the water.*	1. *Knowledge of chlorine and characteristics.* 2. *Ability to use chlorine comparator.* 3. *Ability to recognise and discriminate between shades of colour.*

Notice that the columns are titled in terms of questions, this helps right away to identify the information because in effect we are enquiring about the task being performed so the questions are very appropriate.

By the time you have got to this point in the analysis, you ought to be able to identify any unnecessary and wasteful processes or elements and to recognise deficiencies in the system or personnel for which you would want to effect improvements.

TASK ANALYSIS WORKSHEET

POSITION: *Utility Plumber* TASK: *Installs New Services*

WHAT THE WORKER DOES (Operation)	HOW HE DOES IT (Step)	WHY HE DOES IT	WHAT HE NEEDS TO KNOW
Cuts and threads pipe	*Measures length, cuts pipe with hand hacksaw and threads with hard die.*	*To connect pipe and fittings for service supply.*	1. *Skill in taking and reading measurements.* 2. *Skill in manipulating hacksaw and hard die.* 3. *Knowledge of thread types, quality and defects.*
Makes soldered joints	*Cleans ends, assembles ends, applies solder using butane torch.*	*To secure joints and ensure leak-free connections.*	1. *Knowledge of solder and soldering process.* 2. *Process on applying solder.* 3. *Skill in identifying defects in soldered joints.*
List concisely and accurately each operation performed to complete the job task.	Describe simply but completely how each of the operations are performed.	Explain very concisely the reasons for performing each operation.	List all that is required in order that each operation is performed efficiently - reading, calculation, colour, smell or taste, recognition, etc.

TASK ANALYSIS WORKSHEET

POSITION: *Utility Plumber* TASK: *Installs New Services (Cont'd)*

WHAT THE WORKER DOES (Operation)	HOW HE DOES IT (Step)	WHY HE DOES IT	WHAT HE NEEDS TO KNOW
Installs meter	*Prepares ends, positions and aligns meter, couples up meter and pipe and tightens with hard wrench,*	*To provide measurement of water consumed.*	1. *Knowledge of the several types of meters.* 2. *Knowledge of the installation procedure of each type.* 3. *Skill in using the tools required.* 4. *Ability to make leak-free threaded joints.*
Installs valves	*Determine position, prepares end then positions and couples valve ends and tightens with pipe wrench.*	*To provide a control point in the service main.*	1. *Knowledge of the types and working principles of valves* 2. *Knowledge of the installation procedure of each type.* 3. *Skill in manipulating the installation tools.*
List concisely and accurately each operation performed to complete the job task.	Describe simply but completely how each of the operations are performed.	Explain very concisely the reasons for performing each operation.	List all that is required in order that each operation is performed efficiently - reading, calculation, colour, smell or taste, recognition, etc.

TASK ANALYSIS WORKSHEET

POSITION: *Utility Plumber* TASK: *Installs New Services (Cont'd)*

WHAT THE WORKER DOES (Operation)	HOW HE DOES IT (Step)	WHY HE DOES IT	WHAT HE NEEDS TO KNOW
Installs valves (Cont'd)			4. *Skill in making leak-free threaded joint.*
Taps main and installs ferrule	*Identifies point to tap, sets up tapping machine and attaches to main: operates machine until main is tapped then removes machine with ferrule in position.*	*To facilitate the connection of service line to main.*	1. *Knowledge of the tapping maching including how it is operated.* 2. *Knowledge of the size of taps and their code classification.* 3. *Skill in setting up tapping machine and operating the machine.*
Lays distribution pipe	*Positions and connects pipe, seals and tightens joints using the pipe wrench.*	*To provide a continuous flow of water from the main to consumer.*	1. *Knowledge of the several types of pipes in use.* 2. *Knowledge of the several pipe sizes and grades.*
List concisely and accurately each operation performed to complete the job task.	Describe simply but completely how each of the operations are performed.	Explain very concisely the reasons for performing each operation.	List all that is required in order that each operation is performed efficiently - reading, calculation, colour, smell or taste, recognition, etc

TASK ANALYSIS WORKSHEET

POSITION: *Utility Plumber* TASK: *Installs New Services (Cont'd)*

WHAT THE WORKER DOES (Operation)	HOW HE DOES IT (Step)	WHY HE DOES IT	WHAT HE NEEDS TO KNOW
Lays distribution pipe (Cont'd)			3. *Knowledge of gradient and flow of water.* 4. *Ability to make leak-free joints.*
List concisely and accurately each operation performed to complete the job task.	Describe simply but completely how each of the operations are performed.	Explain very concisely the reasons for performing each operation.	List all that is required in order that each operation is performed efficiently - reading, calculation, colour smell or taste, recognition,

TASK ANALYSIS SHEET

INTRODUCTION

Information about jobs is obtained through a careful and accurate identification of the details of each task. Such details as (a) what the worker does; (b) how he does it; (c) why he does it; and (d) what abilities or knowledge are required for successful performance, are utilized in job restructuring or job training or retraining.

REFERENCE

1. Your own job position in the water utility.
2. Information Sheets TA.IS.09 and TA.IS.10.
3. Job Structure Flow Chart designed in Assignment Sheet TA.AS.01.
4. Task Analysis Sheet Worksheet TA.WS.02.

PROCEDURE

1. Review each task which you perform in your job or is performed by the worker under your supervision.
2. Verify these with the efforts in flow chart prepared in Assignment Sheet TA.AS.01.
3. Review details required in TA.WS.02.
4. List the information for each operation performed.
5. Fill in details on TA.WS.02 concisely yet as completely as possible.

TASK ANALYSIS WORKSHEET

POSITION: _____ TASK: _____

WHAT THE WORKER DOES (Operation)	HOW HE DOES IT (Step)	WHY HE DOES IT	WHAT HE NEEDS TO KNOW
List concisely and accurately each operation performed to complete the job task.	Describe simply but completely how each of the operations are performed.	Explain very concisely the reasons for performing each operation.	List all that is required in order that each operation is performed efficiently - reading, calculation, colour, smell or taste, recognition, etc

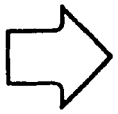
TASK ANALYSIS SHEET

POSITION: PLANT OPERATOR TASK: MAKES WATER TEST

WHAT THE WORKER DOES *(OPERATION)*	HOW HE DOES IT *(STEP)*	WHY HE DOES IT	WHAT HE NEEDS TO KNOW
MAKES CHLORINE TEST	MIXES WATER SAMPLE WITH METHYLORANGE AND MATCHES COLOUR IN COMPARATOR	TO ENSURE THE CORRECT CHLORINE DOSAGE IN THE WATER	1. KNOWLEDGE OF CHLORINE PROPERTIES AND CHARACTERISTICS. 2. ABILITY TO USE CHLORINE COMPARATOR. 3. ABILITY TO RECOGNIZE AND DISCRIMINATE BETWEEN SHADES OF COLOUR.
MAKES ALKALINITY TEST	ETC	ETC	ETC

WORKSHOP 1 Training of Trainers

UNIT 1 Task Analysis

LESSON 6  *OPERATION BREAKDOWN*

ESTIMATED TIME 60 minutes

PREREQUISITES All lessons of this Unit to be completed satisfactorily

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  differentiate between steps and key points, identify and list each step and related key points of given operations.

- Under the following conditions:

  utilizing information from given positions and using prescribed format.

- To these standards:

  each step and key point listed meet the criteria as set out in this lesson.

INSTRUCTIONAL RESOURCES

Information Sheets TA.IS.11 and TA.IS.12

Assignment Sheet TA.AS.03

Worksheet TA.WS.03

Overhead Transparency TA.OH.19

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Review definition of operations.
2. Explain the purpose for breaking down operations.
3. Define and illustrate STEPS - use TA.IS.11.
4. Define and illustrate KEY POINTS.
5. Introduce and discuss Operation Breakdown Sheet - use TA.IS.12 and TA.OH.19.
6. Assign trainee activity and explain details.

TRAINEE ACTIVITY

1. Trainee to state definition of operations.
2. Trainee to give reasons for breaking down operations.
3. Trainee to give examples of steps in keeping with the definition.
4. Trainee to differentiate between STEPS and KEY POINTS and give examples of key points for steps identified earlier.
5. Trainee to fill in details on sample breakdown sheets provided.
6. Trainee to carry out activity as described in TA.AS.03.

EVALUATION ACTIVITY

1. Assess all efforts of trainee activity.
2. Assess oral feedback from class discussion.

All assessments to be based on the criteria stated.

OPERATION BREAKDOWN

The operation breakdown is the final stage in identifying the smallest element of the job which is the operation step. We mentioned earlier that operations are performed through a series of steps. In this operation breakdown we are setting out to identify the steps which make up the operation.

Before going any further, let us define some terms which will be used very frequently in the operation breakdown:

1. STEP: A step is a significant action which advances the operation towards completion. As the worker performs the operation he/she performs several actions, some are very important to the operation others are not so important. A step then is so important to the operation that if it were not performed, the operation could not be advanced e.g., adds reagent (Orthotolodine) is a step in "Testing Chlorine Residual". The operation could not proceed beyond this point if this step was not performed.

2. KEY POINTS: Key points on the other hand is the term for the key to the right doing of the step. For key points we would list all the things to be done or the cautions which are to be observed to ensure successful performance of the step. Many key

points assist the new worker to carry out the step without much hardship. Some would emphasise safety, others would emphasise the hints or tips which would cause the worker to avoid errors, damages or frustrations.

Key points cover in order ot their importance:

1. Factors which make or break the operations.
2. Hazards, in many operations that rank first.
3. Pointers which make the performance of the step easier - knack, trick, sepcial timing etc.

Below is an example of the listing of Steps and Key Points.

STEP	KEY POINTS
Collects sample	1. *Avoid prolonged exposure.* 2. *Allow meter to run for two minutes before collecting* 3. *Use non-metallic container.*
Adds reagent	1. *Use orthotolodine.* 2. *Use 5-7 drops per 5 ml of water sample.*

Steps which are hazardous or complicated would require more Key Points while simple steps may have only a few Key Points.

OPERATION BREAKDOWN SHEET

TASK: *Makes Water Tests* POSITION: *Plant Operator*

OPERATION: *Makes Chlorine Test*

HOW HE DOES IT (Step)	KEY POINTS POINTERS TO BE OBSERVED IN PERFORMING THE STEP
1. *Collects sample*	1. *Avoid prolonged exposure.* 2. *Allow water to run for two minutes before collecting.* 3. *Use non-metallic container.*
2. *Adds reagent*	1. *Use orthotolodine.* 2. *Use 5-7 drops per 5 ml of water sample.*
3. *Agitates sample*	1. *Use swirling action.* 2. *Ensure thorough mixing.*
4. *Sets up comparator*	1. *Place blank - sample and test sample in comparator.*
5. *Determines residual*	1. *Match colour of test sample with appropriate colour on comparator.* 2. *Observe keenly noting close difference or similarity.*

This breakdown was done by: _____

OPERATION BREAKDOWN WORKSHEET

POSITION: _____ TASK: _____

OPERATION: _____

_____

Important STEPS in the operation.

STEP - a significant action which advances the operation towards completion.

KEY POINTS - the key to doing the steps correctly, efficiently or accurately.

HOW HE DOES IT (Step)	POINTERS TO BE OBSERVED IN PERFORMING THE STEP

This operation breakdown was made by: _____

OPERATION BREAKDOWN

INTRODUCTION

The efficient and successful training of workers demands clear, simple and specific presentations in small and manageable portions. The steps to be identified, through the breakdown of the operation, provide this small and manageable portion which we seek to put into our presentation.

REFERENCES

1. Your position in the utility or that of one of the workers whom you supervise.
2. Your TAS TA.WS.02 completed in Lesson 5.
3. Information Sheet TA.IS.11 and TA.IS.12.
4. Operation Breakdown Sheet TA.WS.03.

PROCEDURE

1. Study Information Sheets TA.IS.11 and TA.IS.12.
2. Review completed TAS TA.WS.02.
3. List the steps as they are performed for each of the operations identified in TAS TA.WS.02.
4. For each step identified, list whatever caution or assistance you would provide.
5. Fill in the details appropriately on TA.WS.03 which is provided.

OPERATION BREAKDOWN SHEET

POSTTION:_____ TASK:_____

OPERATION:_____

STEP	KEY POINTS

THIS BREAKDOWN WAS DONE BY:_____

NON-CLASS AND HOME STUDY ACTIVITIES

The following activities are intended to provide the trainee with sufficient practice in the skills of task analysis. The activities are such that they will have further and more meaningful benefits to the trainee in his work role as they are directly related to some of his routine work activities.

1. For each of the positions under your supervision, prepare a flow chart to illustrate the job structure - using the format and guidelines provided as a guide.
2. Identify the relevant details as required by the TAS for each task in one position and fill in the information on the appropriate form - Task Analysis Sheet. Repeat for as many positions as you can.
3. Select a task from a typical job under your supervision and make breakdowns for each of the operations in that task. Fill in the information on the appropriate form (Operation Breakdown Sheet). Repeat for as many tasks as you can.

WORKSHOP 1 Training of Trainers

UNIT 2 *PERFORMANCE OBJECTIVES*

WHAT IS THIS UNIT ALL ABOUT

If one asks a worker, his foreman and his supervisor just what the worker's job-performance requirements are, one will obtain various descriptions and perhaps three quite different views. The purpose of this unit is to build on the previous unit on Task Analysis and convert each step in the process into a measurable performance objective which will serve as a base to develop training and training/job manuals. In this way the worker, his foreman and his supervisor will all see the same required job-performance when they view his job.

WHY DOES THE TRAINEE NEED THIS

The trainee can only perform adequately on the job if his required performance is clearly defined, if he is trained under the conditions under which he is to perform and if the quality of his performance is made clear to him. If these steps are taken, workers can be developed with the required knowledge and skills.

WHAT DOES THE TRAINEE NEED TO KNOW BEFORE BEGINNING

Unit on Task Analysis.

WHAT EQUIPMENT AND SUPPLIES ARE NEEDED

ITEM	LESSON-OBJECTIVE					
	1	2			3	
	1	1	2	3	1	2
Chalk Board, chalk, eraser	X	X	X	X	X	X
Flip chart, marking pens	X	X	X	X	X	X
Wall chart (Systematic Approach)	X	X	X	X	X	X
Overheads	X	X	X	X		
Information Sheets	X	X	X	X	X	X
Assignment Sheet					X	X
Work Sheet					X	X

NUMBER OF LESSONS AND TOTAL INSTRUCTIONAL TIME

Total Lessons: 4

Total Time: 3 hours

WORKSHOP 1 Trainers of Trainers PO.L1

UNIT 2 Performance Objectives

LESSON 1 *DEFINITION OF AND REASONS FOR PERFORMANCE OBJECTIVES*

ESTIMATED TIME 45 minutes

PREREQUISITES Unit 1 - Task Analysis

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  define performance objective; and

  list reasons for using performance objectives.

- Under the following conditions:

  recall.

- To this standard:

  as defined in PO.IS.01 in trainee's own words.

INSTRUCTIONAL RESOURCES

Information Sheets PO.IS.01 through PO.IS.03

Overheads PO.OH.01 through PO.OH.05

Resource Material PO.RM.01

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Review wall chart (or OH) on systematic approach

2. Review purpose of task analysis, i.e., to establish a clear concise statement of each step required in an operation and each operation required in a task so that a trainee can perform adequately on the job. (PO.OH.01)
3. Describe relationship between Task Analysis and Performance Objective (PO.IS.01).
4. Define Performance Objective. (PO.IS.02 and PO.OH.02 through PO.OH.03).
5. Describe need for action (doing) to evaluate performance (PO.IS.02 and PO.OH.04).
6. Describe reasons for using Performance Objectives (PO.IS.02 and PO.OH.05).
7. Tell trainees to read PO.IS.03
   a) Now
   b) Upon completion of Performance Objective Unit
   c) At least once during each home assignment

   It contains the basic philosophy upon which the workshop is based.

TRAINEE ACTIVITY

1. Have one trainee come to the board to sketch systematic approach on board. His input will be obtained by asking a different trainee what is next box (or feedback line) and what it does and why it is important. Instructor only corrects where necessary.
2. Before class, instructor selects one trainee who has prepared a good example of the steps in a task analysis.

Trainee will prepare OH and use it to explain why this is a good example of a task analysis.

3. Before class, ask three trainees to review the task analysis they had made in the previous unit. Then ask them to prepare answers to the following three questions (it is assumed that they are to train their employees in this task):

   a) Where do you want to go?

   b) How will you get there?

   c) How will you know you have arrived?

   Give trainees opportunity to explain their answers. No discussion or criticism now but after Performance Objective unit, when they can update their answers based on their new knowledge. Let trainees read PO.IS.01 before doing this exercise.

4. Ask four trainees to define Performance Objective in their own words.

5. Instructor gives six or so objectives followed by evaluation procedure. Ask trainees to determine if evaluation is appropriate (i.e., doing) or not. Have three correct and three incorrect. But in this case, the student is not being prepared for a specific job. After this exercise instructor should give six objectives and ask trainees to suggest an evaluation technique. Rest of trainees will critique answer.

6. Ask a few trainees to list the three reasons for using Performance Objectives in their own words.

7. Ask trainees if they have questions about PO.IS.03. Do not push them now, but go into more detail in second and third workshops on its content.

EVALUATION ACTIVITY

1. Give trainees an unlabelled copy of systematic approach diagram (with boxes and arrows) and ask them to fill in all missing information.
2. Give trainees six objectives and ask them to write a phrase for each (action verb plus object of verb) of what person would be doing when demonstrating the performance required in the objective.
3. Assess the efforts in keeping with the criteria of the objective.

INTRODUCING PERFORMANCE OBJECTIVE CONCEPTS

In order for instruction to be successful, several kinds of activities must be carried out. Firstly, one must assure one's self that there is a need for this instruction. This aspect has been dealt with in the unit on Task Analysis where it was established that a task analysis had to be carried out in order to determine (1) just what job performance was required and (2) to evaluate if a person was able to perform satisfactorily.

With this precise description of job performance, it is then possible to proceed to the second activity, namely, clearly specifying the outcomes or objectives of the required instructional sequence. Learning experiences must be selected and arranged for the trainees in accordance with the task analysis and the trainee performance must be evaluated according to the objectives generated from the task analysis. In short, one decides where one wants to go. Then, one develops and administers the means of getting there, and evaluates, to determine whether or not the goals have been achieved.

After the task analysis has been made and the need for training recognised, the next step is to develop objectives which describe the intended outcome of the instruction. This is important because before one can chart a successful course, one must clearly identify the objectives.

WHY PERFORMANCE OBJECTIVES?

An instructional objective is a description of a performance one wants trainees to be able to exhibit before one considers them competent.

Objectives are important for a number of reasons. Here are the three main ones:

1. Clearly defined objectives provide a sound basis for selecting and/or designing of instructional material, content or methods.
2. Clearly defined objectives provide one with a sound basis on which to evaluate the result of one's instruction.
3. Clearly defined objectives provide the trainees with the means whereby they can organize their own efforts toward accomplishment of these objectives and also allow them to evaluate their own performance as they go along.

All this could be condensed in a simple statement - if one knows where one is going, one has a better chance of getting there.

All the advantages of instructional objectives listed above are only possible if the objectives have met certain criteria. For one thing, unless they are written in performance terms, they are not likely to provide these advantages.

The Performance Objective must state very clearly and accurately

what the trainee will be doing when he is demonstrating to the instructor that he is competent. When the statement does this, it is a PERFORMANCE OBJECTIVE.

PERFORMANCE ORIENTED INSTRUCTION

Most conventional training programs contain few, if any, built-in techniques to measure their effectiveness, and instructional program certificates often attest merely to formal completion of courses, rather than to actual learning achievement (i.e., the programs are not designed to systematically modify and measure desired performance changes in the trainee).

One of the most effective methods for training technical personnel, and a relatively new development in instructional technology, is performance-oriented training. It is a branch on the same tree as the management-by-objectives concept employed by many of the world's largest business corporations. As a matter of fact they both have grown out of behavioural psychology and the techniques of operations-research developed during World War II. All of these approaches have one thing in common: they enable one to break down any problem or subject under study into specific, well-defined and simple parts in order to understand it fully. In respect of a training program for water utility personally, this would mean systematically breaking down the training into individual units of instruction arranged in logical sequence that allows both the instructor and the trainee to know:

a) exactly what the trainee must be able to do prior to beginning the unit of instruction (this is called the *prerequisite* for the instruction, and it determines at what entry level the trainee can begin an instructional sequence).

b) what the trainee must be able to do after instruction (his *terminal performance)* and under what conditions.

c) whether the trainee can demonstrate that he can, in fact, perform at the required level upon completion of the unit of instruction (this is determined by the evaluation instrument or test -- but *test* is not to be construed exclusively as conventional written answers to a quiz).

The units of instruction given to the trainee are based exclusively on the performance objectives of a given task (what the employee must do, when, and how well). A performance objective is defined as a goal for, or desired outcome of, learning which is expressed in terms of observable behaviour or performance of the learner. The emphasis on observable behaviour or performance is most important. Only observable behaviour can be evaluated quantitatively and qualitatively i.e., measured. One cannot measure what is inside the trainee's mind, but one can readily measure what he does, and the only reliable way to determine the success of an instructional program for water utility personnel is to be able to measure how well they can perform the desired new tasks after completing the program. Expressing instructional objectives in terms of performance objectives, provides the means for making that measurement, in addition to ensuring that the instruction is confined strictly to developing skill and increasing performance.

There is nothing magical about using performance objectives to develop instructional materials and procedures, but once the principle is seriously adopted, it gives an instructional program an internal logic

and consistency that produces highly effective and practical teaching/ learning results.

These straightforward statements of what the trainee must be able to do at the end of a certain period of instruction will themselves strongly suggest the content and context of instruction (what methods and materials the instructor and trainee must use). The instruction process is dynamic, not static, because it provides constant feedback for evaluating how well the instruction is going. If the trainee finally is unable to master the performance objectives, the instructor can and must alter his program to correct its faults. If the trainee is having trouble, he will quickly discover it. When the continuous evaluation process indicates he has not mastered a particular skill, he can go through the instructional unit again until he can meet its performance requirements, before progressing to the next level in the instructional sequence. This is a better and healthier learning environment than one in which the instruction focuses on general subject matter, rather than specific performance objectives, and the trainee finds himself at the end of a long course of instruction realizing that he actually got lost back in the early stages.

The use of performance objectives can be seen as one of the key elements in the systematic approach to training. The predominant role of performance objectives is fully appreciated by referring once again to the graphic representation of this training system (figure 1) and following through, step-by-step, the training sequence:

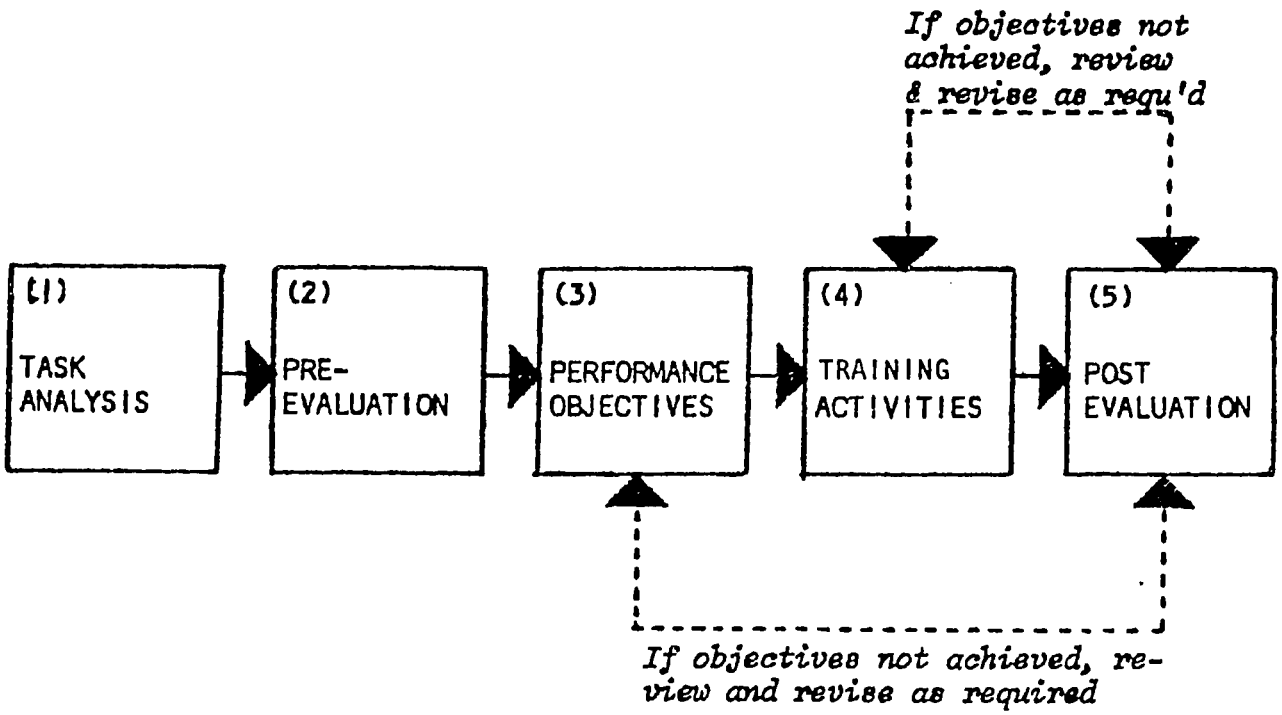


Figure 1. SYSTEMATIC APPROACH TO TRAINING

Initially, a TASK ANALYSIS (1) provides information relating to the elements of each task. It serves to identify skills, knowledge and ability required for satisfactory job performance. Secondly, the desired knowledge and skill level (entering performance or prerequisites) of the trainee must be determined through a PRE-EVALUATION (2). This indicates whether he is ready for the learning activities or instructional sequence and if not, where his weaknesses lie and what remedial work he must undertake. A statement of PERFORMANCE OBJECTIVES (3) indicates to the trainee the new skills and knowledge he will have upon completion of the TRAINING ACTIVITIES (4). These performance statements also guide the trainer of the sequence in limiting the instruction to only that material which is relevant to the performance objectives. The POST EVALUATION (5), which is based solely on and must be consistent with the stated objectives,

indicates to both the trainee and the instructor and anyone else interested (e.g., potential employers) whether the objectives have been mastered. Feedback, from the trainee, instructor and employee (indicated by the dotted lines), is an important aspect of the process, for it is the best way to determine at each step in the process whether the instructional sequence is functioning as it is designed to do.

The use of the performance objectives to develop instructional sequences for water utility training programs offers several advantages:

1. It requires that the curriculum developer be able to break down into specific, step-by-step performance components, each of the multitude of skills that various personnel must have in order to perform their tasks at maximum effectiveness. Further, it forces the curriculum developer to produce performance-oriented instruction plans and materials that are based realistically on the specific performances that together define what the person actually must do in his work.
2. It ensures that the stated performances will be achieved but does not impose restrictions on the flexibility of instruction methods.
3. It is efficient. The ultimate goal is to provide the trainee with skills and knowledge required to perform specific tasks. There is no need for him to master more complex skills if they are not required in his work. Identifying the performance objective ensures that the instructional program is relevant and

that "nice-to-know" information is kept to a minimum.

4. It ensures that graduates of the program achieve a standard level of competence consistent with on-the-job needs.
5. It provides active and meaningful involvement of the trainee in learning and by utilizing small, well-defined units of instruction, it lends itself to packaging in instructional modules, that can employ a variety of learning aids. The learning modules are not only suitable for the classroom, but may also be developed for use on the job for self-paced instruction and peer instruction.
6. It facilitates the evaluation of instructor performance and accreditation of the instructional delivery systems.
7. It is a systematic and explicit approach, not too dissimilar in principle and application from the precision, that characterises good engineering.

A TASK ANALYSIS IS CARRIED OUT TO ESTABLISH A CLEAR, CONCISE STATEMENT OF EACH STEP REQUIRED IN A TASK SO THAT A TRAINEE CAN PERFORM SATISFACTORILY ON THE JOB

INSTRUCTIONAL OBJECTIVES

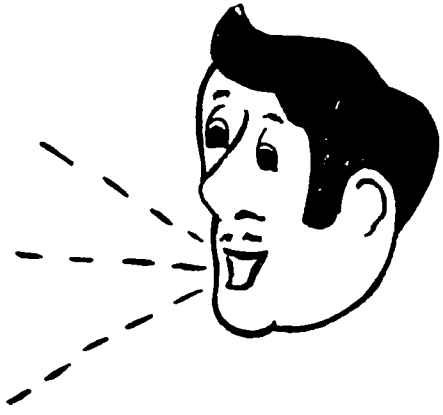
DESCRIBE YOUR

INSTRUCTIONAL INTENT

PO.OH.02

WE DETERMINE PEOPLE'S ABILITY BY
ASSESSING THE THINGS THEY SAY
AND DO.

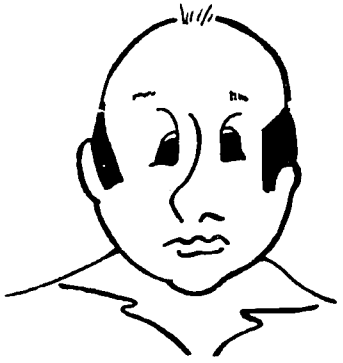
DO THINGS



SAY THINGS

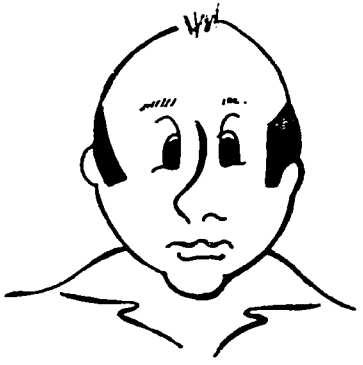
HOW DO I KNOW WHEN THE TRAINEES CAN PERFORM THE NEW SKILL??

LET THEM EXPLAIN?



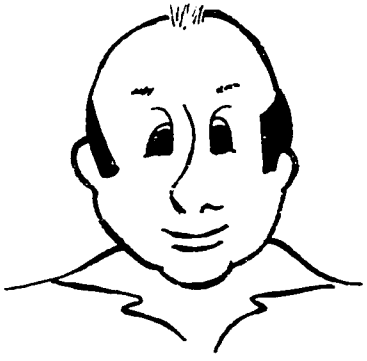
NO

ASK THEM QUESTIONS?



NO

LET THEM PERFORM?



YES!

THE BEST WAY IS TO LET THEM DO IT!!

WHY PERFORMANCE OBJECTIVES?

BECAUSE THEY:

1. TELL WHAT NEW PERFORMANCE IS EXPECTED OF TRAINEE SO TRAINING WILL MATCH REQUIRED JOB PERFORMANCE.

2. DESCRIBE PERFORMANCE IN MEASURABLE TERMS SO TRAINER CAN EVALUATE PERFORMANCE OF TRAINEE.

3. DESCRIBE PERFORMANCE IN MEASURABLE TERMS SO TRAINEE CAN EVALUATE HIS OWN PERFORMANCE.

PREPARING INSTRUCTIONAL OBJECTIVES

by Robert F. Mager

2nd Ed. Preface through page 17

Available from:

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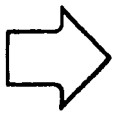
NOTE: Instructor is provided a copy of this book

WORKSHOP 1 Training of Trainers PO.L2

UNIT 2 Performance Objective

LESSON 2  *PERFORMANCE OBJECTIVE COMPONENTS*

ESTIMATED TIME 90 minutes

PREREQUISITES Unit 1 and Lesson 1 of Unit 2

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will <u>be able to</u>:

  list action verbs acceptable for use in performance objectives;

  define the three components of a performance objective, i.e., performance, conditions and standard; and

  differentiate between acceptable and non-acceptable performance objective components.

- Under the following <u>conditions</u>:

  recall;

  use a reference (e.g., PO.IS.05).

- To these <u>standards</u>:

  all verbs must be action verbs;

  in trainee's own words but equivalent to definitions in PO.IS.05;

  80%.

INSTRUCTIONAL RESOURCES

Information Sheets PO.IS.04 and PO.IS.05

Overheads PO.OH.06 through PO.OH.13

Resource Material PO.RM.02

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Discuss qualities for an acceptable performance objective, i.e., simplicity, clarity and accuracy of expression (PO.IS.04 and PO.OH.06).
2. Discuss and list use of action verbs to be used in performance objectives (PO.IS.04 and PO.OH.07).
3. Define and give examples of performance (PO.IS.04, PO.OH.08 and PO.OH.09).
4. Define and give examples of conditions (PO.IS.04, PO.OH.10 and PO.OH.11).
5. Define and give examples of standards (PO.IS.04, PO.OH.12 and PO.OH.13).

TRAINEE ACTIVITY

1. Ask three trainees to discuss the qualities for an acceptable performance objective. Let each trainee discuss a different quality in his own words.
2. Ask each trainee to write out ten action verbs that he used or would use in the task analysis he made previously. Have one trainee write on board two action verbs from each trainee. Have trainees verify that each is a valid action verb.
3. Ask each trainee to write out five performance statements including only the action verb and its object (same as PO.OH.09) relating to the task analysis he made previously. Have one-third of class write their performance statement

on board and discuss and defend them. Have trainee or another trainee correct if necessary.

4. Ask each trainee to write out five conditions (same as PO.OH.11). Use same procedure as above using abother third of the class.
5. Ask each trainee to write out five standards (same as PO.OH.13). Use same procedure as above using remaining third of class.

EVALUATION ACTIVITY

1. Ask each trainee to prepare a table:

PERFORMANCE	CONDITION	STANDARD

and write in the performance column each of the five performance statements written earlier, making changes that may be necessary as a result of discussions.

2. Each trainee should then add one condition and one standard for each performance statement.
3. Trainees exchange lists and evaluate what their neighbour has written and rewrite any they feel are not simple, clear and accurate.
4. Each trainee, using the list, will select one statement that needs no changes and one that they have changed, and write these on a board and defend his actions to other trainees.

THE QUALITIES OF USEFUL OBJECTIVES

Useful objectives are those which succeed in communicating an instructional intent to the reader. It is useful to the extent that it conveys to others a picture of what a successful trainee will be like, that is identical to the picture that the objective-writer had in mind. Good objectives are not expressed in fanciful terms. What one is searching for is that group of words or symbols that will communicate one's intent exactly as one understands it.

A meaningfully stated objective then is one that succeeds in communicating one's intent; the best statement is the one which excludes the greatest number of possible meanings other than one's intent.

There are several words which, when used, cause others to come to several and varied conclusions or which will cause others to ask "what do you mean?" Any word which allows others to make conclusions which were not intended should be rejected.

The left hand column below contains some words to be avoided in writing objectives. The right hand column lists some more desirable words.

NON-ACTION VERBS Words Open to Many Interpretations	ACTION VERBS Words Open to Fewer Interpretations
To know	To write
To understand	To recite
To really understand	To identify
To appreciate	To sort
To fully appreciate	To solve
To grasp the significance of	To construct
To enjoy	To compare
To believe	To contrast
To have faith in	To dig
To internalize	To adjust

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DESCRIBING THE CHARACTERISTICS OF PERFORMANCE OBJECTIVES

There are three major characteristics of performance objectives which enable them to do what one wants them to do. These are as follows:

1. PERFORMANCE - an objective must say what a trainee is expected to be able to do, using an action verb.
2. CONDITIONS - an objective must describe the important conditions under which the performance is to occur.
3. STANDARD - an objective must describe the standard of acceptable performance, by describing how well the trainee must perform in order to be considered acceptable.

PERFORMANCE

The performance part of the objective tells what the trainee is to be able to DO. It is the term which refers to the action or the activity engaged in by the trainee. Our only means of determining what abilities people have is by way of what they <u>say</u> or <u>do</u>. Some abilities can be observed directly, for example when we watch someone lay a length of pipe or install a meter, but there are others in which we can only observe them doing something that represents the meaning of these abstractions. For example, how do we know the extent of someone's management ability? Probably by observing some decisions taken or results achieved. Therefore the most important and indispensable

characteristic of a useful objective is that it describes the kind of performance that will be accepted as evidence that the trainee has mastered the objective.

A performance is described by a DOING word. If the word describes something one might be able to do, then it describes a performance. Here are some examples of doing words - action verbs (performance):

run	write
solve	calculate
discriminate	adjust, etc.

A good 'rule of thumb' to use to detect performance words is to ask the questions, "what must the person be doing or what can the person do?"

CONDITIONS

Simply being able to specify the terminal act may not be enough to prevent one being misunderstood. For example, an objective such as "to be able to calculate the gradient of slope". . . Does one expect the trainee to use a particular method or procedure? If he is left to do this following his own methodology, then one may not get the required performance. So then this objective should specify the conditions under which he should calculate the gradient, e.g., calculate by formula only etc., or given the height, fall and distance, calculate etc.

To state an objective clearly one will sometimes have to state the conditions one will impose when the trainees are demonstrating their mastery of the objective. Here are some examples:

Given a list of .....

Given a standard set of tools .....

Given a proper functioning.....

Without the aid of references .....

Without the aid of tools .....

For example, instead of simply specifying, "to be able to cut and thread a length of pipe," we could improve the ability of the statement to communicate by wording it something like this: "Given a standard set of hand tools, cut and thread a length of pipe without assistance."

The following questions can be used to help to specify the conditions for performance:

1. What will the learner be allowed to use?
2. What will the learner be denied?
3. Under what conditions will one expect the terminal behaviour to occur?
4. Are there any skills which one is specifically not trying to develop? Does the objective exclude such skills?

STANDARD

Having described what one wants the trainee to be able to do, and the conditions under which he should do it, one can increase the communication power of an objective by telling him how well one wants him to do it. This will be accomplished by describing the standard of acceptable performance. This is the basis on which a performance is evaluated, the yardstick by which achievement of the objective is assessed.

If the acceptable performance for each objective can be specified, then this will be a standard against which the instruction can be tested. One would have the means for determining whether one's instruction was successful in achieving one's instructional intent. If, for example, the instructor's best experience tells him that he must not consider a trainee competent until that trainee can perform within a strict time limit, then he knows that he will have to instruct and assist that trainee until the desired performance level is reached. Both the instructor and the trainee would know - the quality of the performance to work for or to exceed,

What he must do then is to indicate in his objectives, what the acceptable performance level will be, by adding words which describe the standard of success.

1. One of the common ways to describe a standard of acceptable performance is to describe a time limit within which a given performance must occur.
2. Another way in which a standard can be described is accuracy.
3. Still another way often used to describe standard is quality.

Speed, accuracy or quality of a performance sometimes are equally important in operations. In other instances, they vary in their relative importance.

Here are how some standards are stated:

1. .....within a tolerance of $\pm$ .005 ins.

2. .....within five minutes.

3. .....within an accuracy of 85%.

4. .....to the standard of the BSPT.

GOOD OBJECTIVES COMMUNICATE YOUR INTENT

WITHOUT ANY MISUNDERSTANDING

PO,OH,06

FOR WRITING PERFORMANCE OBJECTIVES

DO NOT USE THESE!

NONACTION VERBS

TO KNOW
TO UNDERSTAND
TO REALLY UNDERSTAND
TO APPRECIATE
TO FULLY APPRECIATE
TO GRASP THE SIGNIFICANCE OF
TO ENJOY
TO BELIEVE
TO HAVE FAITH IN
TO INTERNALIZE

USE THESE!

ACTION VERBS

TO WRITE
TO RECITE
TO IDENTIFY
TO SORT
TO SOLVE
TO CONSTRUCT
TO COMPARE
TO CONTRAST
TO DIG
TO ADJUST

PO.OH.07

PERFORMANCE

WHAT ARE THEY REQUIRED TO DO TO CONVINCE

YOU THAT THEY ARE COMPETENT?

STATEMENTS OF PERFORMANCE

THE TRAINEE WILL BE ABLE TO:

DEFINE PERFORMANCE OBJECTIVE

FILL OUT A BILLING STATEMENT

CALCULATE PERCENTAGE

LIST ACTION VERBS

ACID-CLEAN WATER METERS

DRAW A PIPING DIAGRAM

DEVELOP A TASK ANALYSIS

PO.OH.09

CONDITIONS

UNDER WHAT CONDITIONS DO YOU WANT

THE PERFORMANCE CARRIED OUT?

PO.OH.10

STATEMENT OF CONDITIONS

- GIVEN PERFORMANCE MATERIAL FROM RECALL
- GIVEN THE FOLLOWING TOOLS: JACK-HAMMER, SHOVEL, PICK
- GIVEN AN EQUIPPED DRAFTING ROOM
- UNDER WATER AT NIGHT
- WITH TWO MEN OF THE CREW MISSING
- WITH THE USE OF TOOLS
- GIVEN A CHECK LIST

STANDARD

WHAT WILL BE YOUR YARD-STICK FOR

MEASURING HOW WELL THE TRAINEE

HAS PERFORMED?

STATEMENT OF STANDARDS

AS DESCRIBED IN JOB MANUAL

80%

SIX OUT OF SEVEN COMPONENTS

100%

WITHIN FIVE MINUTES

WITHIN ± 5MM

PREPARING INSTRUCTIONAL OBJECTIVES

by Robert F. Mager

2nd Ed. pages 18-87

Available from:

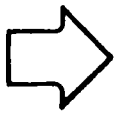
Fearon Publishers, Inc.
6 Davis Drive
Belmont, CA 94002
U. S. A.

at a cost of US$3.95

NOTE: Instructor is provided a copy of this book

WORKSHOP 1 Training of Trainers PO.L3.03

UNIT 2 Performance Objectives

LESSON 3  *WRITING AND EVALUATING PERFORMANCE OBJECTIVES*

ESTIMATED TIME 45 minutes

PREREQUISITES Unit 1 and Lessons 1 and 2 of Unit 2

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  evaluate performance objectives; and

  write performance objectives.

- Under the following conditions:

  given information sheets and work sheets.

- To these standards:

  80% of performance objectives (including performance, condition and standard) will be evaluated correctly; and

  80% of performance objectives written will be in conformance with standards in information sheets.

INSTRUCTIONAL RESOURCES

Information Sheet PO.IS.06

Assignment Sheet PO.AS.01

Work Sheets PO.WS.01 and PO.WS.02

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Review qualities for an acceptable performance objective,

which include action verbs and the following three components performance, condition, and standard.

2. Using examples prepared by trainees in previous lesson which have been altered so that one or more of the components (performance, condition, standard) is not acceptable, ask trainees to evaluate them. Include some acceptable objectives. This is probably best done by preparing a handout or overhead (in form of PO.WS.01) ahead of time so process can keep moving. Have each trainee give at least two correct responses. If anyone does not, work with them, out of instructional time.
3. Handout and discuss the use of the performance objective work sheet (PO.WS.01 and PO.IS.06).
4. Have trainees prepare at least three performance objectives (using work sheet PO.WS.01) for the task analysis done earlier. Have them exchange objectives and evaluate each other. Correct where necessary. Instructor must settle any discrepancies. Ask five trainees to write on board and defend their statements; ask class to critique.
5. Have trainees complete PO.WS.02. Discuss any questions.
6. Have each trainee draw sketch (from recall) of the systematic approach labelling all blocks, inserting arrows and explaining supplementary or corrective provisions.
7. Explain assignment (PO.AS.01).

TRAINEE ACTIVITY

1. During review ask various trainees to explain each point and discuss. Instructor only to clarify and to give examples or further explanation.
2. Trainees to respond to performance objective presented.
3. Trainees to ask questions to clarify format and use of PO.WS.01.
4. Trainees to fill out PO.WS.01, and then evaluate each others. Five trainees to make presentations.
5. Trainees to complete self-test, PO.WS.02.
6. Trainees to sketch systematic approach diagram and check against PO.IS.03.
7. Trainees to complete assignments at home and have them ready for next day (PO.AS.01).

EVALUATION ACTIVITY

1. Trainees complete self-test PO.WS.01.
2. Trainees complete PO.AS.01.
3. Assess all feedback received in trainee activity.

PERFORMANCE OBJECTIVE WORKSHEET PO.IS.06

PERFORMANCE: (Use an action verb e.g., "List the first 3 steps in rewashering a Ferrule")

Trainee will be able to disassemble and assemble a Kent water meter Model 2x5.

CONDITIONS: (State what the learner will be given or denied in the operation e.g., "From recall" or "Given a cut away of a Ferrule")

Given an equipped work bench with tools, supplies and spare parts.

STANDARDS: (State the minimum acceptable performance on this objective - "in their correct sequence and in accordance with standard procedure")

Within 45 minutes and the meter registering within ± 1% of the meter test stand value.

PERFORMANCE OBJECTIVE WORKSHEET

PERFORMANCE: (Use an action verb e.g., "List the first 3 steps in rewashering a Ferrule")

CONDITIONS: (State what the learner will be given or denied in the operation e.g., "From recall" or "Given a cut away of a Ferrule")

STANDARDS: (State the minimum acceptable performance on this objective - "in their correct sequence and in accordance with standard procedure")

SELF-EVALUATION ACTIVITY ON PERFORMANCE OBJECTIVES

This self-test will allow you to check to see how expert you are in determining whether given objectives exhibit the characteristics discussed in the workshop.

You should make, at the most, no more than seven errors out of the forty-four items.

1. Are the objectives below stated in at least performance (behavioural) terms? Does each at least name an act the learner would be performing when demonstrating that he has achieved the objective?

	YES	NO
a. To be able to understand the meaning of the law of gravity.	_____	_____
b. To be able to identify instructional objectives that indicate what the trainee will be doing when demonstrating achievement of the objective.	_____	_____
c. To REALLY understand the water utilities billing procedures.	_____	_____
d. To understand the principles of manpower planning.	_____	_____
e. To be able to list the principles of how a chlorinator works.	_____	_____
f. To be able to write three examples of constructing wells.	_____	_____
g. To know the types of driving regulations.	_____	_____
h. To be able to name the components of a centrifugal pump.	_____	_____

2. Given below are two characteristics of a statement of instructional objectives.

A -- Identifies the behaviour to be demonstrated by student.

B -- Identifies a standard or criterion of acceptable performance.

Are each of these characteristics present in each of the objectives below? For each objective below, check whether EACH of these characteristics is present.

	A	B
a. The trainee is to be able to select the correct job manual for trouble shooting a gas chlorinator and within 2 minutes find the correct page(s) in the job manual. Within 30 minutes, he will find and correct all malfunctions except those requiring dismantling of the chlorinator.	_____	_____
b. The trainee is to be able to name and give an example of six types of pipe fittings used in the water works. To be considered correct, items listed by the trainee must appear in the job manual on pipe fittings.	_____	_____
c. The trainee must be able to understand the theory of water rate structures. Evidence of understanding will be obtained from a written essay on water rate structures.	_____	_____
d. The trainee must know WELL the 5 steps in rewashering a public water tap.	_____	_____
e. Given a list of chemicals, the trainee should be able to evaluate each.	_____	_____
f. The trainee is to be able to complete a 100-item multiple-choice examination on the subject of water quality control. The lower limit of acceptable performance will be 85 items answered correctly within an examination period of 90 minutes.	_____	_____
g. The trainee must be able to write an essay on the subject "How to Inform the Water Board on the Need for More Trained Staff." The trainee may use all references suggested during the course, as well as class notes.	_____	_____

		A	B
h.	The trainee must be able to list the important characteristics of the country's health laws relating to water quality.	_____	_____
i.	The trainee must be able to correctly name each item depicted by EACH of a series of 20 drawings.	_____	_____
j.	The trainee must be able to fill out a standard water analysis report.	_____	_____
k.	The trainee must be able to develop logical approaches in the solution of personnel problems.	_____	_____
l.	To demonstrate his ability to read an assembly blueprint, the trainee must be able to assemble the item depicted by the blueprint given him at the time of examination. He will be allowed the use of all tools required for the assembly.	_____	_____
m.	Beside each of the pictures of pumps the trainee must be able to write the name of the pump and a place in the water works where this type of pump would be used. (6 pictures attached).	_____	_____
n.	During the final examination, and without reference, the trainee must be able to write a description of the steps involved in making a routine inspection of a restaurant.	_____	_____

3. Here is a rather poorly stated objective:

> "The trainee must be able to understand the regulations pertaining to water well siting."

Indicate whether the following test situations could be considered appropriate for testing and whether the objective could be achieved.

	Appropriate	Not Appropriate
a. The trainee is asked to answer 50 multiple-choice questions on the subject of water well siting.	_____	_____
b. Given a set of regulations as established by the Ministry of Works, the trainee is asked to indicate which of the regulations, if any, are violated by the wording of the planned siting scheme.	_____	_____
c. The trainee is asked to write the name of each of the persons on the Water Board.	_____	_____
d. Given a Ministry of Works regulation with certain legal terms circled, the trainee is asked to write a definition of each of the circled terms.	_____	_____

4. Which of the test situations below would be appropriate for eliciting the kind of behaviour by which one could tell if the student had reached the objective?

OBJECTIVE: Given a properly functioning water meter test apparatus, the trainee must be able to test water meters.

	Appropriate	Not Appropriate
a. Discuss the role of the water meter test apparatus in the operation of a water utility.	_____	_____
b. List the steps, in their proper order, for conducting a test on a water meter.	_____	_____
c. Conduct a test of a water meter.	_____	_____
d. Discuss the steps followed in repairing a water meter.	_____	_____

ANSWERS TO SELF-EVALUATION ACTIVITY ON PERFORMANCE OBJECTIVES

1.

a.	NO
b.	Yes
c.	No
d.	No
e.	Yes
f.	Yes
g.	No
h.	Yes

2.

a.	Yes	No
b.	Yes	Yes
c.	Yes (?)	No
d.	No	No
e.	No	No
f.	No (?)	Yes
g.	Yes	No
h.	Yes	No
i.	Yes	Yes
j.	Yes	No
k.	No	No
l.	Yes	Yes
m.	Yes	Yes
n.	Yes	Yes

3.

a.	Not appropriate
b.	Appropriate
c.	Appropriate
d.	Appropriate

4.

a.	Not appropriate
b.	Not appropriate
c.	Appropriate
d.	Not appropriate

Seven errors or less -- CONGRATULATIONS

More than seven errors -- BACK TO WORK

WRITING PERFORMANCE OBJECTIVES

INTRODUCTION

The success of a training exercise is dependant to a large extent on the quality of the objectives which guide the exercise.

REFERENCE

1. Information Sheets PO.IS.04 and PO.IS.05.
2. Job knowledge of the particular position being considered.
3. Work Sheet PO.WS.01.

PROCEDURE

1. Review PO.IS.04 and PO.IS.05, clarify any doubts or misunderstandings.
2. Select examples of operations of the positions you supervise.
3. a) State the performance
   b) State the conditions
   c) State the standards
4. Fill in details on PO.WS.01.

UNIT 3 *PRESENTATION TECHNIQUES*

WHAT IS THIS UNIT ALL ABOUT

This unit deals with some of the major considerations for making presentations. Some of the more basic factors are discussed and ideas presented for making the instructional plan. Sufficient is given to spark an interest in the more formal training principles and practices.

WHY DOES THE TRAINEE NEED THIS

In training, he is communicating and he needs to be aware of some of the factors which block communication and how he can overcome them. He further needs guidance in putting together all the pieces which he has identified in a useful and properly structured manner. This unit will provide him with sufficient information and guidelines to meet this demand.

WHAT DOES THE TRAINEE NEED TO KNOW BEFORE BEGINNING

Units on Task Analysis and Performance Objectives and some knowledge of the basic human behaviour.

WHAT EQUIPMENT AND SUPPLIES ARE NEEDED

ITEM	LESSON/OBJECTIVE			
	1	2	3	4
Information Sheet	X	X	X	X
Assignment Sheet			X	X
Work Sheet			X	X
Overhead	X	X	X	X
Flip Chart	X	X	X	X
Chalk Board	X	X	X	X

NUMBER OF LESSONS AND INSTRUCTIONAL TIME

Total Lessons: 4

Total Time: 3½ hours

WORKSHOP 1 Training of Trainers

UNIT 3 Presentation Techniques

LESSON 1 PRINCIPLES OF LEARNING

ESTIMATED TIME 45 minutes

PREREQUISITES Interest and experience in organizing and supervising persons

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  list the three principles of learning; and

  explain their implications in motivating workers.

- Under the following conditions:

  by recall after a class presentation and discussion.

- To these standards:

  listings to be 100% accurate and explanations to represent

  80% accuracy.

INSTRUCTIONAL RESOURCES

Information Sheets PT.IS.01 and PT.IS.02

Overhead Transparencies PT.OH.01 to PT.OH.06

Resource Material PT.RM.01

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Discuss the fundamental concepts of learning - use PT.OH.01.

2. Introduce the Principles of Learning - use PT.OH.02, PT.OH.03, PT.OH.04 and PT.OH.05.
3. Explain their implications in training.
4. Explain where in the training activity each is applicable - use PT.OH.06.

TRAINEE ACTIVITY

1. Trainee to explain the definition LEARNING as stated in PT.OH.01.
2. Trainee to explain each of the principles as they are reviewed, giving examples to clarify their understanding.
3. Trainee to explain how the principles are applied in the training activity.
4. Trainee to explain how each principle is brought out in each of the training activities.

EVALUATION ACTIVITY

1. Trainee to list the three principles of learning
2. Trainee to explain how each is related to training activities.

THE SENSES THROUGH WHICH WE LEARN

SIGHT

We acquire most of our knowledge through the sense of sight. Observation of action and the study of drawings, diagrams, models and pictures are indispensable in trade training. Merely reading printed words is considered as being more related to hearing than sight.

HEARING

Through hearing we are able to learn from the experiences of others. It also enables us to receive instructions and to recognize the proper operation of tools, machines, and the like.

TOUCH

Through the sense of touch we become aware of the quality and texture of materials, degree of roughness and smoothness, heat and cold, and, to some degree, the shapes of objects.

SMELL

The sense of smell is important, to a limited extent, in several trades, chiefly in recognizing materials, chemicals, and the like.

TASTE

The sense of taste is perhaps the least used of all the senses, particularly in mechanical trades. Of course, it is important in trades in which foods and drugs are processed.

SOME TRAINING PRINCIPLES

If we are to consider how to train, it would be helpful first to understand something of how men learn.

We are told that we retain approximately:

10 percent of what we read

20 percent of what we hear

30 percent of what we see

50 percent of what we see and hear

The individual in these situations may be relatively passive; he is "receiving." These percentages are clearly only approximations, but they do indicate where emphasis in training should be placed. We shall be much more certain of this, however, if we can find some practical proof. What, for example, have we found out about learning in the vast laboratory of industrial training?

1. Men learn faster by seeing and hearing than by hearing alone.
2. Men learn still faster when doing is added to seeing and hearing. It is doing which makes learning permanent.
3. Men tend to remember more of what they did in training than what they were told in training.
4. Thus, men should be trained for positions under conditions that are as nearly like the actual job as possible.

THE PRINCIPLES OF LEARNING

READINESS

People learn best when they are ready. Readiness in this context refers to the mental preparation for receiving a new experience. The most important factor to set off this mental preparation is a need for the new experience. When there is a need for this skill or set of information there is an associated interest: this interest stimulates motivation and the learner is said to be in a state of "readiness." If we are to get the best response from our training, then we must motivate the trainees by helping them identify this need which will set off a "burning desire" for the new skill or information.

EFFECT

Every experience through which we pass has an effect on us. The way in which we react to the experience depends largely on the type or kind of effect the experience had. If the effect was good - being pleasant - then we react favourably to it. If, however, the effect was bad - being in this case unpleasant - then we will react unfavourably.

Training is an experience for the trainee. If the training had a pleasant effect, that is to say, it was rewarding, successful, friendly and interesting, the trainees will respond positively and the learning will be easier and more beneficial. If, however, it had a bad effect, that it to say that there was extensive failure, frustration, hurt, pain and humiliation, the trainee will respond unfavourably and the learning will be difficult, if any ever occurs.

PRACTICE

The more frequently we practice a skill, the more efficiently we perform and the easier that performance is. Evidence of this principle is all around us. Any skill we want to mention, the first performance we made was strenuous and the results were not as good as we would have liked. Then after some period of practice, the result was better and the effort put out was less.

Therefore, we must build into our training provisions for the trainee to practice these new skills we are offering - practice makes learning permanent.

LEARNING!!

WHAT IS IT?

LEARNING IS A BEHAVIOURAL CHANGE WHICH RESULTS FROM PAST EXPERIENCE OF TRAINING

HOW DOES IT OCCUR?

LEARNING OCCURS THROUGH THE SENSES - ALL FIVE

PRINCIPLES OF LEARNING

1. READINESS!

2. EFFECT!

3. PRACTICE!

THESE REPRESENT THE BASIS OF ALL LEARNING ACTIVITY

READINESS

- IF THERE IS A NEED FOR INFORMATION OR SKILL
- THERE WILL BE A GENUINE DESIRE FOR THE INFORMATION OR SKILL
- WHEN THIS DESIRE EXISTS INTEREST IS GENERATED
- WHERE THERE IS KEEN INTEREST LEARNING IS EFFICIENT

PT.OH.03

EFFECT

- ALL EXPERIENCES HAVE AN EFFECT ON US
- GOOD EXPERIENCES HAVE A GOOD EFFECT ON US
- WHERE THE EFFECT IS GOOD THE EXPERIENCE IS WELCOMED
- LEARNING EXPERIENCES SHOULD HAVE A GOOD EFFECT ON TRAINEES IF THE LEARNING IS TO BE WELCOMED

PRACTICE

- PRACTICE REINFORCES LEARNING
- LEARNING WHICH INVOLVES FREQUENT PRACTICE OF SKILL OR KNOWLEDGE BECOMES PERMANENT
- THE MORE A SKILL IS PRACTICED THE MORE EFFICIENT THE PERFORMANCE BECOMES

LEARNING PRINCIPLE	TRAINING ACTIVITY
READINESS	MOTIVATING TRAINEE BEFORE PRESENTING SKILL OR KNOWLEDGE
EFFECT	INSTRUCTOR'S PRESENTATION LECTURE OR DEMONSTRATION
PRACTICE	TRAINEE PRACTICE OF NEW SKILL OR INFORMATION

PT.OH.06

METHODS OF TEACHING

SHOP AND TECHNICAL SUBJECTS

by

GERALD B. LEIGHBODY
Professor of Education
The State University of New York
Buffalo, New York

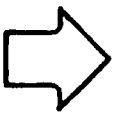
DONALD M. KIDD
Former Director of Vocational Education
Syracuse, New York

Chapter 1 - pages 1-8

NOTE: Trainers to be provided with one copy

WORKSHOP 1 Training of Trainers

UNIT 3 Presentation Techniques

LESSON 2  *FACTORS AFFECTING LEARNING*

ESTIMATED TIME 45 minutes

PREREQUISITES Lesson 1 of this Unit

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  list the important factors which affect learning; and

  explain how they affect the learning experience.

- Under the following conditions:

  without reference to the class notes.

- To these standards:

  in keeping with the information in the class notes.

INSTRUCTIONAL RESOURCES

Information Sheets PT.IS.03 and PT.IS.04

Overhead Transparencies PT.OH.07, PT.OH.08 and PT.OH.09

Resource Material PT.RM.02

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Review Learning Concepts - use PT.OH.01.
2. Introduce learning as an individual experience - use PT.OH.07.

3. Discuss learning factors in which individuals differ - use PT.OH.08.

4. Discuss the implications of these differences in learning.

5. Introduce PT.OH.09 and discuss.

TRAINEE ACTIVITY

1. Trainee to recall the definition of learning and discuss.

2. Trainee to explain his understanding of learning as a personal experience; have other trainees critique each explanation.

3. Trainees to individually discuss each of the factors listed in PT.IS.03.

4. Trainee to explain how each of these factors affect learning.

5. Trainee to explain the understandings of PT.OH.09 and discuss how the trainer can plan for these differences.

EVALUATION ACTIVITY

1. Spot check understanding by oral questioning.

2. Select one factor discussed, explain it and say how this factor affects learning.

SOME IMPORTANT FACTORS IN LEARNING IN WHICH INDIVIDUALS DIFFER

The good supervisor realises that individuals differ in their mental capabilities as in their physical makeup and makes provisions for adapting his training techniques to best fit the learning abilities of each individual worker. Following are some factors which greatly influence a person's ability to learn and which the teacher must recognize in "individualizing" his instructions.

INTEREST: Without worker interest, instruction is more or less futile. A person learns well those things in which he has a vital sustained interest. On the other hand, he rebels and ceases to learn when he is bored or fails to see a personal benefit in learning the lesson.

INTELLIGENCE: Briefly stated, intelligence is the ability to respond quickly and successfully to new or unusual situations. It enables the learner to "tie up" new ideas with his past experiences and knowledge. The so-called native intelligence of a person changes very little throughout his life and is not increased by education.

PAST EXPERIENCES: A person's background of experiences forms the basis for receiving additional knowledge.

CONCENTRATION: It is difficult for a person to fix his attention on one idea for very long. Yet he may refocus his attention quickly when his mind wanders. The ability to do this repeatedly over a period of time is known as

"power of concentration."

MEMORY: A person's ability to remember is extremely important in learning. Factors which influence memory are vividness, uniqueness, frequency, and relative importance.

WELL-BEING: Mental and physical comfort increase one's power of concentration. On the other hand, pain, discomfort, and such emotions as grief, irritation, anger, and worry greatly hinder mental processes. The good training man tries to put his group at ease and in a cheerful frame of mind before presenting the lesson.

SELF-CONFIDENCE: A person learns something better if he thinks he can. Fear of bodily injury, fear of failure or spoiling a work-piece, and fear of criticism or humiliation make learning difficult, if not impossible. The good supervisor never purposely assigns a worker a task beyond his ability to perform nor says or does anything that would tend to make the learner lose confidence in himself.

IMAGINATION: Is the power to form mental pictures of things not actually present. A man without imagination can never learn to read a blueprint.

SOME FACTORS THAT AFFECT THE TEACHING PROCESS

Teaching is a process which:

a) The teacher plans, presents, tests, and thereby helps a learner to understand information or develop a skill.

b) The learner develops new knowledge, new qualities, and new abilities and is able to apply them to a trade or job situation.

c) Even though the learner will not learn unless he takes an active part, the instructor is primarily responsible for success. "If the learner hasn't learned, the instructor hasn't taught."

The good instructor makes the most effective possible use of the learner's senses:

a) Men learn faster by seeing and hearing than by hearing alone.

b) Men learn still faster when doing or saying is added to seeing and hearing. It is doing which makes learning permanent.

The good instructor designs his lesson and course to take advantage of the three principles of learning:

a) Readiness. You learn a thing when you feel a need for it. You must be interested. Conditions must be right.

b) Effect. You must get satisfaction out of learning. The more certain you are of success, the greater the desire to learn.

c) Practice. You like to repeat those things you have learned to do well, so practice becomes a pleasure rather than a drudgery. The more you do a thing, the better you are able to do it.

People differ in many ways, and these differences affect:

a) The reasons they have for wanting to learn something. An argument that convinces one person of the need for a lesson may not convince another.

b) The speed and thoroughness at which each person learns. A teaching approach that works with one person may not work with another. That is why it is important to make frequent checks to see if individuals are learning, re-teaching as needed, using varied approaches to get the work done.

The instructor must remember that adults:

a) Usually can see relationships between what they know and what they are studying. If an instructor knows a learner's background, he may be able to discuss the lesson in terms the learner already understands.

b) Are usually active learners and need a chance to apply what they are learning.

c) Are serious, almost always seeking a specific goal.

d) Are less inclined to be impulsive and need time to think processes and problems through.

LEARNING IS A PERSONAL EXPERIENCE!

LEARNING ACTIVITIES MUST BE DESIGNED TO MEET THE PERSONAL DIFFERENCES OF EACH TRAINEE!

INDIVIDUALS DIFFER IN THEIR

- ABILITIES
- NEEDS
- INTERESTS
- VALUES

CONSIDER THESE TOO WHEN YOU DEAL WITH THEM

PT.OH.08

INDIVIDUALS DIFFER IN THEIR LEARNING STYLE AND LEARNING RATE

THIS IS LARGELY BECAUSE OF THEIR INDIVIDUAL DIFFERENCES

TRAIN EACH ONE DIFFERENTLY BECAUSE HE IS DIFFERENT!!

METHODS OF TEACHING

SHOP AND TECHNICAL SUBJECTS

by

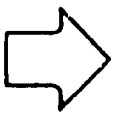
GERALD B. LEIGHBODY
Professor of Education
The State University of New York
Buffalo, New York

DONALD M. KIDD
Former Director of Vocational Education
Syracuse, New York

Chapter 11: pages 156-163

WORKSHOP 1 Training of Trainers

UNIT 3 Presentation Techniques

LESSON 3  *INSTRUCTIONAL METHODS*

ESTIMATED TIME 60 minutes

PREREQUISITES Lesson 1 of this Unit

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  differentiate between the lecture method and the demonstration method; and

  select the appropriate method for given situations.

- Under the following conditions:

  given a description of each and information about their advantages and disadvantages.

- To these standards:

  80% correct.

INSTRUCTIONAL RESOURCES

Information Sheets PT.IS.05 and PT.IS.06

Overhead Transparencies PT.OH.10 - PT.OH.18

Resource Material

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Define instructional method - clarify trainee definitions.

2. Introduce two methods to be discussed - PT.OH.10.

3. Introduce and discuss demonstration method - use PT.IS.05, PT.OH.11 and PT.OH.12.

4. Introduce and discuss lecture method - use PT.IS.06 and PT.OH.13 - PT.OH.18.

5. Introduce and discuss each of the four types of lectures and use each of the overheads.

TRAINEE ACTIVITY

1. Trainee, after definitions for instructional method response to be critiqued by fellow trainee.

2. Trainee to explain why demonstration is applicable to skill and lecture to information.

3. Trainee to review PT.IS.05 then discuss the advantages and disadvantages of this method. As PT.OH.12 is displayed each trainee will be required to discuss the seven items listed.

4. Trainee to review PT.IS.06 then discuss the advantages and disadvantages of this method.

5. Trainee to discuss and differentiate between the four types of lectures.

EVALUATION ACTIVITY

1. Trainee given a variety of presentations for which he must select the appropriate method to use.

2. Trainee to list the advantages of lecture method and those of demonstration.

DEMONSTRATION METHOD OF TRAINING

The purpose of a demonstration is to explain and show the precise or preferred actions necessary to perform skills or processes.

ADVANTAGES

1. Learning is in a practical situation.
2. Method of training appeals to more than one sense.
3. Trainees observe the "Standard of Practice" at first hand.

DISADVANTAGES

1. Requires careful attention to logistics.
2. Number of trainees limited.
3. Demonstrating may place above normal demands on the instructor.
4. Difficult to obtain accurate feedback if this method of training alone is used.

PREPARATION

Have all of the materials and tools required to carry out the demonstration laid out in an orderly manner before you begin, making sure they are in working order. There is nothing more harmful to the smooth running of a demonstration than for the demonstrator to have to break off and fetch a tool or piece of material from another part of the room. Such interruptions break up the concentrated attention of the group. While the demonstrator is away, talking breaks out among the group and time has to be spent in bringing the group back into an attentive frame of mind.

PRESENTATION

Use the same tools and equipment for the demonstration that you will expect the participants to use in their work. This helps to inspire confidence. The results achieved by your manipulative skill should obviously be as near perfect as possible, and it is unlikely that any of your group will achieve the same standard at that time. Therefore, if you use your own special tools it leaves in the group's minds a lurking suspicion that they could do better if they were able to use your special tools. This also applies to materials. Try not to select for yourself a special piece of material, but work on an average sample. The group will then realize that any lack of perfection seen in the results of their own work will be due to their inexperience and lack of skill rather than to poor quality tools, equipment or material.

Consolidate each stage of the demonstration by allowing the group to see and handle the results and by recapitulation through questioning. There are definite stages to be passed in any process and these should be clearly registered in the minds of the group. Allow a participant to perform while you and other participants watch. This will offer means of recapitulating and from the reaction of the others, you should be able to discover if they have forgotten any points you have stressed. (See Controlled Practice).

Thoroughly analyse your own actions when carrying out a skilled operation. The skill of a person comes only through constant practice, and when achieved, develops into automatic or almost automatic actions for which little conscious thought is required. The skilled person spends his time thinking about what he is doing rather than how he is

doing it. Operations which present no problems to him will, in all probability, create intense difficulty to the beginner. It therefore follows that before he can demonstrate the use of a tool or piece of equipment, he must consider the position in which he places parts of the body in relation to the material and the correct handling of the tool. Always mention any necessary safety precautions.

Make good use of the chalkboard to illustrate points which cannot be readily appreciated. A practical demonstration can show more effective results if the demonstrator acquires a degree of skill with chalk, enabling him to make quick, clear sketches to illustrate points which would not otherwise be obvious.

A skilled person need not be a skilled demonstrator. It is quite easy to fumble through a demonstration in a most clumsy and unskilled manner, mainly due to nervousness in working before an audience. In the first place your main concern must lie in the direction of the group, and your chief thoughts must be concentrated on explaining to the group what you are doing while another part of your mind must be concentrated on the actual operation in hand. It takes time to develop this kind of split-personality mind, but it is a necessary part of the equipment of a demonstrator. It would be wrong to give the group the impression that you are a magician by the wonderful and mysterious way in which you carry out an operation, because they have to follow up your demonstration by carrying out the same operation themselves. Be careful to avoid instilling in them the fear that the operation is too difficult for them.

PERFORMANCE (One of three types)

1. CONTROLLED PRACTICE

   a) Trainer explains one step.

   b) Trainer demonstrates that step.

   c) Trainee performs.

2. INDEPENDENT PRACTICE

   a) Trainees perform at their own pace.

   b) They must be observed closely for correction of errors.

   c) An effective technique is to use first the controlled, then the independent practice.

3. COACH AND PUPIL

   a) Trainees pair up; one performs, the other observes and corrects.

   b) The pairing of strong and weak is advantageous to both.

   c) Close trainer supervision is still required.

   d) A critique of trainee performance is conducted.

It is easy to set a beginner's effort against your own by exhibiting the difference in quality. This only gives a sense of inferiority. You have reached this standard after years of experience and practice and should be sympathetic towards his first attempt by hinting that you were no better at one time.

The foregoing relates to the demonstration of a skill. The same is true when demonstrating the performance of a piece of equipment.

In the case of equipment, actual objects or scaled models would replace tools and materials.

LECTURE METHOD OF TRAINING

Thepurpose of a lecture should be the drawing together of everything affecting the trainee in a learning situation. Among the several aspects conducive to good learning is the comfort of the trainees. Therefore, before beginning, it is important that each participant can see both the lecturer and the chalkboard without strain or effort.

Four types of learning methods can be considered:

1. Illustrated lecture
2. Briefing
3. Formal speech
4. Teaching lecture

Whichever method is employed, a technique must be developed.

ADVANTAGES

1. It is appropriate for relatively large numbers.
2. Enables presentation of much information in a short time.
3. Does not require elaborate or "real world" equipment.
4. Is conducive to combination with other methods.

DISADVANTAGES

1. Students retain only a small portion of material presented. (It is estimated that the average person retains 10% of what he hears; 50% of what he sees; 80% of what he does).
2. Effectiveness is largely dependent on the capabilities of a single individual.

3. There is generally passive participation by students.

LECTURE TECHNIQUES

1. DEFINE OBJECTIVES

Prepare your lesson carefully. Be quite clear of the amount of information you wish to impart during the presentation, and arrange your facts in logical sequence. A presentation which comprises a rambling statement of disconnected facts is of little value and tends to leave the participants in a state of mental confusion.

2. INVOLVE STUDENTS

Talk with the participants and not at them. It is quite easy for a presentation to have a one-sided approach where the trainer does all of the talking while the participants remain silent listeners, but best results are not achieved that way. It is more effective to develop your subject through convincing questioning of the participants and by allowing them to discuss the subject with you. In this way, they will be stimulated to think for themselves and so take a more vital and personal interest in the presentation. It follows from this that it is important to keep the whole group within the discussion in order that each participant may feel that he or she is making a contribution. To do this one must acquire a special skill which allows one to concentrate on the reaction of each individual participant without losing one's grip on the subject of the presentation. It is easy for an inexperienced trainer to concentrate his whole attention on the few immediately before his eyes and fail to be sensitive to the needs of the remainder of the group.

3. USE APPROPRIATE INSTRUCTIONAL AIDS

Always have illustrative material, where possible, to aid your presentation. Much time and verbosity can be saved if one can show the participants the object being talked about.

4. STRESS MAIN POINTS

Avoid being celver and talking above the heads of the group. In general, the best method is to get the points over in a simple and concise manner. Participants are not usually impressed by a profound and intellectual discourse; they are merely left in a state of mental confusion. Talk in terms that the group will understand, and if you have to use uncommon words or new technical terms, be sure that you can explain them fully. Never leave the group guessing as to your meaning. You can be sure that you have achieved this aim only by developing such friendly relationship that the participants are not afraid to stop you and ask you what you mean or are free enough to ask you to go over a point they did not understand. Always remember that terms and phrases which have become part of your normal vocabulary are, in all probability, quite incomprehensible to the group. Consolidate the main points of your presentation. Always repeat them briefly at the end. This will help to stress the points covered in the early part of the presentation and will impress upon the minds of the participants the logical sequence of facts which have been developed.

5. PROJECT VITALITY

Much of the success of the presentation will depend on your own attitude and manner when delivering it. Avoid any suggestions of lecturing at them and try to be lively and vigorous, and at least give

the participants the impression that you are vitally interested in your subjects. It is easy for you to flag and feel bored on the third or fourth occasion of giving the same presentation, but this feeling of fatigue must be fought against if the presentation is to be successful. If attention is paid to the point discussed next, much of this difficulty will be overcome, because although the subject of your presentation may be the same on consecutive occasions, the participants will be different, giving you some opportunity for variation of approach.

6. HELP IDENTIFY MAIN POINTS

Avoid too much side-tracking, and keep your mind on the main theme of the subject. The question and answer technique to be discussed later can be very effective. Many trainers avoid questioning because of the likelihood of the group getting out of control due to disorderly answering of questions.

A more serious problem for the inexperienced is the side-tracking question. Consciously or unconsciously, participants are in the habit of asking questions not directly related to the subject under discussion, and the wise trainer will steer (rather than drive) the discussion back on the right lines. In this, much tact must be brought into play. It is not helpful nor is it conducive to good relations to ignore or refuse to answer an irrelevant question. The participant, probably having asked the question in all seriousness and unconscious of the fact that it falls outside the topic under discussion, will feel slighted and refrain from further cooperation.

Sometimes a short answer to an irrelevant question will suffice to satisfy the participant, and occasionally a gentle reminder to the

effect that his or her point will be dealt with on another occasion will bring you back to your topic. There are times, however, when an irrelevant question might be pursued for a moment or two with great profit to the group. It should be borne in mind that an objective was set out to be achieved when the presentation was started, and this must be successfully achieved in the allotted time.

7. CONSIDER LENGTH

Do not try to expound too many facts in one presentation. Five or six points well consolidated in the minds of the participants are about all they are capable of retaining during one presentation. In any case, if these points are well described and illustrated you will have used up all of the time you have on hand. Keep a weathered eye open for a flagging audience. A sensitivity to the reaction of the group must be developed, and if boredom begins to creep in the atmosphere, it is time to either stop or change tactics. Always be self-critical and be on guard for signs of lack of interest. This will mean developing a method or methods of retaining and revivifying the attention of the group because it is useless to continue talking to a group if the participants are not paying serious attention.

INSTRUCTIONAL METHODS

1. DEMONSTRATION (SKILL)

2. LECTURE (INFORMATION)

PT.OH.10

DEMONSTRATION METHOD

THE INSTRUCTOR EXPLAINS AND SHOWS THE

PRECISE ACTIONS NECESSARY TO PERFORM

SKILLS OR PROCESSES

DEMONSTRATION METHOD

- PREPARATION
- PRESENTATION
- PERFORMANCE
  - CONTROLLED PRACTICE
  - INDEPENDENT PRACTICE
  - COACH AND PUPIL
- CRITIQUE

PT.OH.12

LECTURE METHOD

FOUR TYPES TO CONSIDER

1. ILLUSTRATED LECTURE
2. BRIEFING
3. FORMAL SPEECH
4. TEACHING LECTURE

PT.OH.13

ILLUSTRATED LECTURE METHOD

1. LECTURER CONVEYS MAIN IDEAS THROUGH USE OF VISUAL AIDS

2. USES SPEECH TO DESCRIBE OR CLARIFY IDEAS

BRIEFING LECTURE METHOD

1. LISTENERS ALREADY KNOW ALL TERMINOLOGY USED
2. SPEAKER NEVER ELABORATES
3. LISTENERS ACCEPT THE FACTS REQUIRING NO MOTIVATION IN GIVING FULL ATTENTION

FORMAL SPEECH LECTURE METHOD

1. TO INFORM (NARRATION)

2. TO PERSUADE (MAKE ACTION)

3. TO ENTERTAIN (ENJOYMENT)

TEACHING LECTURE METHOD

TEACHER PRESENTS KEY FACTS OR IDEAS -

PROVIDES SUPPORTING MATERIAL TO HELP

STUDENT VISUALIZE, KNOW, UNDERSTAND . . .

PRIMARY PURPOSE TO BRING ABOUT STUDENT

LEARNING.

LECTURE TECHNIQUES

1. DEFINE OBJECTIVES
2. INVOLVE STUDENTS
3. USE APPROPRIATE INSTRUCTIONAL AIDS
4. STRESS MAIN POINTS
5. PROJECT VITALITY
6. HELP IDENTIFY MAIN POINTS
7. CONSIDER LENGTH

WORKSHOP 1 Training of Trainers

UNIT 3 Presentation Techniques

LESSON 4  *THE INSTRUCTIONAL PLAN*

ESTIMATED TIME 60 minutes

PREREQUISITES Units 1 and 2 and Lessons 1 and 2 of Unit 3

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  develop an instructional plan for a skill or information presentation.

- Under the following conditions:

  given the situation and details of the instruction and using the prescribed format.

- To these standards:

  include all vital information as discussed and illustrated.

INSTRUCTIONAL RESOURCES

Information Sheets PT.IS.07 and PT.IS.08

Assignment Sheet PT.AS.01

Work Sheet PT.WS.01

Overhead Transparencies PT.OH.19 and PT.OH.20

Resource Material PT.RM.03

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Define and discuss value of instructional plan - use PT.IS.07.
2. Discuss contents of instructional plan.
3. Introduce and discuss format being used for this workshop - use PT.IS.08 and PT.OH.20.
4. Direct and guide the preparation of a plan for an operation.
5. Assign activity and clarify any point.

TRAINEE ACTIVITY

1. Trainees to say individually what is an instructional plan and what the plan used for.
2. Trainees to say individually what details are included in a typical plan - verify and clarify all responses.
3. Trainee to review PT.IS.08 and PT.OH.20 and discuss the details included.
4. Trainee to suggest an operation then all, using PT.IS.08 as a guide, make up a plan for presenting the operation.
5. Trainee to collect PT.AS.01 and additional PT.WS.01, seek all clarification for any point.

EVALUATION ACTIVITY.

1. Assess all feedback from the discussion of the items in the trainee activity.
2. Review and assess each plan submitted.

THE INSTRUCTIONAL PLAN

The instructional plan is compared to the building plan; it is the blueprint for instruction. Most trainers have found it necessary and valuable to make written instructional plans.

Whilst some instructional plans are very lengthy and detailed, many such plans are still complete and practical, although they consist of only sufficient notes and reminders for the trainer's own reference. Instructional plans are intended to guide the trainer and not to be examined by anyone except perhaps a supervisor of the trainer.

Instructional plans give the assurance

- that the presentation is logical and well thought-out and that all the important points are included.
- that there is a likelihood of better attention and interest and therefore better learning by the trainee.
- that all safety points involved are stressed at the proper time.
- that all requirements for the presentation are accounted for.

The plan consists of what might be termed a running account of the proposed progress of the presentation.

INSTRUCTIONAL PLAN

Position to be trained: *Plant Operator*

No; *3* Location: *CWC Pumping Station*

Date: *15.5.78* Duration: *45 minutes*

Instructional Topic: *How to make a Chlorine Residual Test*

Prerequisites: Knowledge and skill in using basic laboratory equipment. Ability to read graduated cylinder; ability to distinguish colour.

Materials/Supplies etc: 4 comparators; 4 sets of test tubes; 4 graduated cylinders; 2 qts of water sample.

INSTRUCTIONAL/PERFORMANCE OBJECTIVE

- The trainee will be able to:

  determine the chlorine residual in a given water sample.

- Under these conditions:

  using the standard procedure for making chlorine test.

- To these standards:

  within 5 minutes and 95% accuracy.

INSTRUCTIONAL CONTENT

Attach copy of TA.IS Operation Breakdown of how to make chlorine test.

(See Operation Breakdown Sheet attached).

TRAINEE ACTIVITY

Trainee to make individual tests under the supervision of instructor.

EVALUATION ACTIVITY/PROCEDJRE

Observe and assess the performance then evaluate the final results to verify the level of accuracy.

OPERATION BREAKDOWN SHEET

TASK: *Makes Water Tests* POSITION: *Plant Operator*

OPERATION: *Makes Chlorine Test*

HOW HE DOES IT (Step)	KEY POINTS POINTERS TO BE OBSERVED IN PERFORMING THE STEP
1. *Collects sample*	1. *Avoid prolonged exposure.* 2. *Allow water to run for two minutes before collecting.* 3. *Use non-metallic container.*
2. *Adds reagent*	1. *Use orthotolodine.* 2. *Use 5-7 drops per 5 ml of water sample.*
3. *Agitates sample*	1. *Use swirling action.* 2. *Ensure thorough mixing.*
4. *Sets up comparator*	1. *Place blank - sample and test sample in comparator.*
5. *Determines residual*	1. *Match colour of test sample with appropriate colour on comparator.* 2. *Observe keenly noting close difference or similarity.*

This breakdown was done by: _____

INSTRUCTIONAL PLAN

INTRODUCTION

If you are to follow an undisrupted and smooth path through the presentation; if you are to progress in any logical sequence through the presentation and if you do not intend to be caught unawares during the presentation, you must plan the instruction/presentation before hand and follow the plan.

REFERENCE

1. Information Sheets PT.IS.07 and PT.IS.08
2. Work Sheet PT.WS.01
3. Work Sheet TA.WS.02 (completed)

PROCEDURE

1. Review PT.IS.07 and PT.IS.08. Seek all clarifications of details which are not clear.
2. For each TA.WS.02 completed, identify the necessary details for making presentations of each.
3. Fill in details identified on PT.WS.01.
4. Review your final efforts and make any adjustments necessary before submitting them.

INSTRUCTIONAL PLAN

POSITION TO BE TRAINED: _____

NO: _____ LOCATION: _____

DATE: _____ DURATION: _____

INSTRUCTIONAL TOPIC: _____

_____

PREREQUISITES: _____

_____

MATERIAL/SUPPLIES ETÇ: _____

_____

_____

INSTRUCTIONAL/PERFORMANCE OBJECTIVE

Trainee to be able to: _____

_____

Under the following conditions: _____

_____

To these standards: _____

_____

INSTRUCTIONAL CONTENT (List on Operation Breakdown Sheet or Information Breakdown Sheet)

_____

_____

TRAINEE ACTIVITY (List what trainee will do to practice)

_____

EVALUATION ACTIVITY/PROCEDURE (State how you will evaluate the trainee performance)

OPERATION BREAKDOWN SHEET
(Skill)

POSITION _____ TASK _____

OPERATION _____

STEPS What the Worker Does	KEY POINTS Points to be observed in performing the Step

INFORMATION BREAKDOWN SHEET
(Related Technical Information)

INFORMATION _____

INSTRUCTIONAL SEQUENCE KEY POINTS

THE INSTRUCTIONAL PLAN IS THE BLUEPRINT FOR INSTRUCTION WHICH . . . . .

- ENSURES THAT THE PRESENTATION IS LOGICAL AND WELL THOUGHT-OUT
- ENSURES THAT ALL IMPORTANT POINTS ARE INCLUDED
- ENSURES BETTER ATTENTION AND INTEREST AND THEREFORE BETTER LEARNING
- ENSURES THAT ALL TRAINING REQUIREMENTS ARE ACCOUNTED FOR

THE INSTRUCTIONAL PLAN

POSITION TO BE TRAINED _____

NO _____ LOCATION _____

DATE _____ DURATION _____

INSTRUCTIONAL TOPIC _____

PREREQUISITES _____

_____

MATERIALS/SUPPLIES _____

_____

INSTRUCTIONAL OBJECTIVE

- TRAINEE TO BE ABLE TO
- UNDER THESE CONDITIONS
- TO THESE STANDARDS

INSTRUCTIONAL CONTENT

TRAINEE ACTIVITY

EVALUATION ACTIVITY/PROCEDURE

METHODS OF TEACHING

SHOP AND TECHNICAL SUBJECTS

by

GERALD B. LEIGHBODY
Professor of Education
The State University of New York
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Syracuse, New York

Chapter 4: pages 34-40

CARIBBEAN BASIN WATER MANAGEMENT PROJECT

TRAINING OF TRAINERS - WORKSHOP 1

CRITIQUE FORM

This evaluation form is a means for us to obtain your opinion of how the workshop was conducted. It will help us to improve the next ones.

Please answer the following questions by circling the number you feel is more appropriate. Note the five point scale from positive to negative. There is room at the end for any additional comments you may wish to make. Do not sign the form!

● COMMENTS ON COURSE

1.	Were the objectives of the Workshop clear to you before arrival at the course?	1 2 3 4 5 very clear not at all
2.	Did the Instructors make the objectives clear?	1 2 3 4 5 very clear not at all
3.	Were the course objectives met?	1 2 3 4 5 to a high degree not at all
4.	Do you believe the instructional methods were appropriate to achieve the objectives?	1 2 3 4 5 very appropriate not at all
5.	Were the activities used in the class appropriate for the subject matter?	1 2 3 4 5 very appropriate inappropriate
6.	Were all assignments well defined (i.e. did you understand what the Instructor wanted and why)?	1 2 3 4 5 very well poorly
7.	How useful do you think the material covered in the workshop will be to your work?	1 2 3 4 5 very useful no use at all
8.	Do you recommend that this workshop be continued?	1 2 3 4 5 Yes No

● COMMENTS ON INSTRUCTORS

(Each question has two rows of numbers. Use the top row for one Instructor and the bottom row for the other. Top is for _____ bottom for _____).

1.	Did the Instructor utilize a variety of instructional methods?	1	2	3	4	5
		1	2	3	4	5
		used many			used one	
2.	Was the Instructor effective in using the instructional method chosen?	1	2	3	4	5
		1	2	3	4	5
		very effective			very ineffective	
3.	Was the Instructor able to convey his knowledge of subjects to students?	1	2	3	4	5
		1	2	3	4	5
		excellent			poor	
4.	Was the Instructor able to stimulate your interest in the material?	1	2	3	4	5
		1	2	3	4	5
		excellent			poor	
5.	Was the Instructor able to stimulate your thinking on the material?	1	2	3	4	5
		1	2	3	4	5
		excellent			poor	
6.	Was the Instructor adequately prepared for the workshop?	1	2	3	4	5
		1	2	3	4	5
		very well			poor	
7.	Did the Instructor present the material in an organized manner?	1	2	3	4	5
		1	2	3	4	5
		very well organized			poorly organized	
8.	Did the Instructor utilize the time effectively?	1	2	3	4	5
		1	2	3	4	5
		very effective			very ineffective	
9.	Did the Instructor allow sufficient time for discussion?	1	2	3	4	5
		1	2	3	4	5
		sufficient			insufficient	
10.	Were the discussions beneficial and focused?	1	2	3	4	5
		1	2	3	4	5
		very much			not at all	
11.	How frequently did you ask questions?	1	2	3	4	5
		1	2	3	4	5
		often			never	
12.	Was the Instructor available and helpful outside of class?	1	2	3	4	5
		1	2	3	4	5
		available			unavailable	
13.	How would you evaluate the Instructor's overall teaching effectiveness?	1	2	3	4	5
		1	2	3	4	5
		highly effective			ineffective	

GENERAL COMMENTS

Are there any additional comments or suggestions you would like to make concerning this workshop? If so, please write answers below.

1. With regard to presentations and instructional methods?

2. With regard to objectives?

3. With regard to workshop content, focus, materials?

4. With regard to assignments and exercises?

5. Suggestions for improving the workshop.

6. Do you have any additional comments on the Instructors' strengths and/or weaknesses?

CARIBBEAN BASIN WATER MANAGEMENT PROJECT

TRAINING OF TRAINERS - WORKSHOP 1

HOME STUDY ASSIGNMENT

During the first workshop you have learned how to use the three work sheets Job Structure Flow Chart, Task Analysis Sheet and Operation Breakdown Sheet to analyse any job under you. In addition, you have written performance objectives for the task analysis using the performance objective work sheet. Finally, utilizing both task analysis and performance objectives, you have developed an Instructional Plan on a work sheet. Be sure you have copies of all these work sheets for your assignment between this workshop and the second one. If you need additional work sheets, obtain them from your Training Coordinator.

Your objectives for the home study period are listed below.

PERFORMANCE OBJECTIVES: At the end of the home study period, each trainee will:

1. Complete a Job Structure Flow Chart (TA.WS.01) for each of the positions under his/her supervision.

2. Complete a Task Analysis (TA.WS.02) for all the tasks identified for one position. If time permits, do for other positions.

3. Complete Operation Breakdown Sheets (TA.WS.03) for all the tasks completed in 2 above.

4. Select one or more tasks and write the performance objectives on the work sheet (PO.WS.01) including terminal objective, conditions and performance level.

5. Develop an Instructional Plan (PT.WS.01) for a training program, using the performance objectives developed in 4 above.

CONDITIONS: Using all handout materials, notes, reference materials, fellow trainees and Training Coordinators.

STANDARD: Each of the five performance objectives must be carried out in accordance with the standards in the class notes.

During the second workshop you will be giving a training presentation utilizing the materials you developed during the home study period. So work hard and have them ready for your Training Coordinator the week before Workshop 2 begins.

OUTLINE

UNIT (U)		LESSON (L)	
NO.	TITLE	NO.	TITLE
4.	Review of Task Analysis and Performance Objectives	1.	Review of Task Analysis.
		2.	Review of Performance Objectives.
5.	Presentation Skills	1.	Communication.
		2.	Feedback.
6.	Instructional Media	1.	Introduction to Instructional Media.
		2.	Graphics.
7.	Questioning Techniques	1.	Oral Questioning Techniques.
8.	Presentation Preparations	1.	Selecting Site and Trainees for Presentation.
		2.	Training Prerequisites.
		3.	Organizing the Presentation.
		4.	Critique of Presentations.
9.	Performance Evaluation.	1.	Introduction to Performance Evaluation.
		2.	Preparing Evaluation Devices.
TRAINEE PRESENTATIONS			

TIMETABLE

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
.... Start	U4 - L1	U6 - L1 U6 - L2	U9 - L1 U9 - L2	PRESENTATIONS	PRESENTATIONS
Break					
	U4 - L2	U7 - L1	PRESENTATIONS		
Break					
	U5 - L1	U8 - L1 U8 - L2			
Break					
.... Finish	U5 - L2	U8 - L3 U8 - L4			CRITIQUE AND CLOSURE

WORKSHOP 2 Training of Trainers

UNIT 4 *REVIEW OF TASK ANALYSIS AND PERFORMANCE OBJECTIVES*

WHAT IS THIS UNIT ALL ABOUT

This unit is designed to review with the trainee the fundamentals of Task Analysis and Performance Objective in an effort to clarify misunderstandings and short-comings in his/her Home Study Assignments and finally to improve the quality of his performances.

WHY DOES THE TRAINEE NEED THIS

As these two activities, Task Analysis and Performance Objective, form the core of all training activities, it becomes necessary for the trainee to have a thorough and solid grasp of the knowledge and skills in order that he will make adequate preparations for his/her presentations.

WHAT DOES THE TRAINEE NEED TO KNOW BEFORE BEGINNING

He needs to have studied Units 1 and 2 of the first workshop and meet the prerequisites which were included

WHAT EQUIPMENT AND SUPPLIES ARE NEEDED

ITEM	OBJECTIVES				
	1	2	3	4	5
Information Sheets	X	X	X	X	X
Assignment Sheets	X	X	X	X	X
Work Sheets	X	X	X	X	X
Overheads	X	X	X	X	X
Overhead Projector	X	X	X	X	X
Chalkboard	X	X	X	X	X

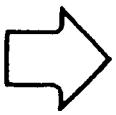
NUMBER OF LESSONS AND TOTAL INSTRUCTIONAL TIME

Total Lessons: 2

Total Time: 2 hours

WORKSHOP 2 Training of Trainers

UNIT 4 Review of Task Analysis and Performance Objectives

LESSON 1  *REVIEW OF TASK ANALYSIS*

ESTIMATED TIME 1 hour

PREREQUISITES Unit 1 of the first workshop

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  identify and describe, more appropriately, tasks and operations;

  revise and improve the details of the T.A.S.; and

  list more efficiently, steps and key points of operations.

- Under the following conditions:

  all activities to be based on specified position.

- To these standards:

  each activity is to be done according to guidelines given in the workshop and be relevant to the positions specified.

INSTRUCTIONAL RESOURCES

All instructional materials used in Unit 1 of Workshop 1

Selected samples taken from Home Study activity

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Review training functions of supervisors.
2. Review the use of Task Analysis by the supervisor.

3. Present an overview of the quality of Task Analysis done in Home Study Assignment.
4. Clarifies general or common errors taken from trainee's efforts - refer to relevant aid from Unit 1 and use to make clarification.
5. Assigns areas to be corrected and reviewed.

TRAINEEE ACTIVITY

1. Trainee to explain overall function of the supervisor in the organization to bring out the training role.
2. Trainee to define Task Analysis orally, then explain the several uses to which this activity can be put. (Highlight the use in training).
3. Each trainee to collect his/her own effort, review the corrections and seek clarification.
4. Trainee to critique example placed on chalkboard and 'come up' with suitable corrections based on guidelines from Unit 1.
5. Each trainee to make corrections or modifications to his/her own work.

EVALUATION ACTIVITY

1. Assess the contributions made in the discussions.
2. Assess corrections made and the quality of the final effort.

TASK ANALYSIS WORKSHEET

POSITION: _____ TASK: _____

WHAT THE WORKER DOES (Operation)	HOW HE DOES IT (Step)	WHY HE DOES IT	WHAT HE NEEDS TO KNOW
List concisely and accurately each operation performed to complete the job task.	Describe simply but completely how each of the operations are performed.	Explain very concisely the reasons for performing each operation.	List all that is required in order that each operation is performed efficiently - reading, calculation, colour, smell or taste, recognition, etc

OPERATION BREAKDOWN WORKSHEET

POSITION: _____ TASK: _____

OPERATION: _____

Important STEPS in the operation. STEP - a significant action which advances the operation towards completion.	KEY POINTS - The key to doing the steps correctly, efficiently or accurately.
HOW HE DOES IT (Step)	POINTERS TO BE OBSERVED IN PERFORMING THE STEP

This operation breakdown was made by: _____

INSTRUCTIONAL PLAN

POSITION TO BE TRAINED: _____

NO: _____ LOCATION: _____

DATE: _____ DURATION: _____

INSTRUCTIONAL TOPIC: _____

_____

PREREQUISITES: _____

_____

MATERIAL/SUPPLIES ETC: _____

_____

_____

INSTRUCTIONAL OBJECTIVE

Trainee to be able to: _____

_____

Under the following conditions: _____

_____

To these standards: _____

_____

INSTRUCTIONAL CONTENT (List on Operation Breakdown Sheet or Information Breakdown Sheet)

_____

_____

TRAINEE ACTIVITY (List what trainee will do to practice)

_____

EVALUATION ACTIVITY/PROCEDURE (State how you will evaluate the trainee performance)

_____

WORKSHOP 2 Training of Trainers

UNIT 4 Review of Task Analysis and Performance Objectives

LESSON 2 *REVIEW OF PERFORMANCE OBJECTIVES*

ESTIMATED TIME 1 hour

PREREQUISITES Unit 2 and Lesson 1 of Unit 4

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  differentiate the three elements of Performance Objectives;

  write more purposefully objectives to describe the relevant operations.

- Under the following conditions:

  using the guidelines, class notes and information and operations identified in Lesson 1 of Unit 4.

- To these standards:

  all elements to be included and clearly identifiable.

INSTRUCTIONAL RESOURCES

All materials used for Unit 2

Completed assignments of Home Study Activities

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Review definition of Performance Objectives.
2. Review the role or purpose of objectives in supervision/ training.

3. Provide an overview of the efforts made in the Home Study Assignment (review assignment).
4. Clarify general or common weaknesses - refer to the relevant guide from the notes of Unit 2.
5. Assign activities to be corrected or improved.

TRAINEE ACTIVITY

1. Trainee to name the three elements of performance objective and further explain the characteristics of good objectives.
2. Trainee to explain how the supervisor uses objectives in his daily activities and how they are used in training.
3. Trainee to collect his/her work, review notes or corrections, seek clarifications.
4. Trainee to study example on chalkboard, discuss as requested, then offer corrections.
5. Trainee to seek additional details, collect additional work sheets etc., to carry out the improvement suggested.

EVALUATION ACTIVITY

1. Assess clarifications provided in the open discussions and individual efforts as directed.
2. Review and assess final efforts after corrections or improvements.

WORKSHOP 2 Training of Trainers

UNIT 5 *PRESENTATION SKILLS*

WHAT IS THIS UNIT ALL ABOUT

This unit contains a description of several human facilities which are crucial to communication. It further describes some techniques for developing these facilities and explains how these may be used effectively in the presentation of activities.

WHY DOES THE TRAINEE NEED THIS

He needs this unit in order that he may be able to develop and use these vital human facilities in transmitting the skills and information he has prepared for the persons he is to train.

WHAT DOES THE TRAINEE NEED TO KNOW BEFORE BEGINNING

Units on Task Analysis, Performance Objectives and Presentation Techniques.

WHAT EQUIPMENT AND SUPPLIES ARE NEEDED

ITEM	LESSON/OBJECTIVES					
	1				2	
	1	2	3	4	1	2
Overhead Projector	X	X	X	X	X	X
Transparencies	X	X	X	X	X	X
Information Sheets		X			X	
Assignment Sheets						
Work Sheets						
Chalkboard	X	X	X	X	X	X

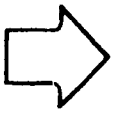
NUMBER OF LESSONS AND TOTAL INSTRUCTIONAL TIME

Total Lessons: 2

Total Time: 1½ hours

WORKSHOP 2 Training of Trainers

UNIT 5 Presentation Skills

LESSON 1  *COMMUNICATION*

ESTIMATED TIME 60 minutes

PREREQUISITES Units on Task Analysis, Performance Objectives and Presentation Techniques

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  define communication and explain its importance to effective instruction;

  explain the schematic of the communication system;

  explain how the individual characteristics of a learner affect the communication process; and

  list and describe three characteristics of an instructor that can be controlled to improve communication.

- Under the following conditions:

  with reference to the information contained in the presentation.

- To these standards:

  80% correct.

INSTRUCTIONAL RESOURCES

Information Sheet PS.IS.01

Overhead Transparencies PS.OH.01 to PS.OH.06

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Demonstrate a poor communication; practice and discuss the results.
2. Define communication - use PS.IS.01 and PS.OH.01.
3. Display and discuss communication problems - use PS.OH.02.
4. Introduce and discuss the communication cycle - use PS.OH.03.
5. Discuss the four roles in which the receiver acts - use PS.OH.04.
6. Discuss the trainee characteristics which affect communication - use PS.OH.05.
7. Discuss the trainer's characteristics which affect communication - use PS.OH.06.

TRAINEE ACTIVITY

1. Trainee to carry out assignment as described by trainer.
2. Trainee to explain, with examples, the definition as stated in PS.IS.01.
3. Trainee to explain the information of the overhead.
4. Trainee to explain PS.OH.03 using his own words and any illustration.
5. Trainee to explain the four roles played by the receiver. Further identify the most and least efficient with reasons.
6. Trainee to explain each of the five characteristics and state how they affect communication.

7. Trainee to explain the ways in which voice, body actions and eye contact affect communication.

EVALUATION ACTIVITY

1. Oral spot-checking of the highlights of the presentation, e.g.:
   - defining communication.
   - explaining the importance of effective communication to training.
   - listing three trainee characteristics which affect communication.
2. Preparing sketch of the communication cycle listing the major elements.

COMMUNICATION

INTRODUCTION

Communiation refers to the conveying of information, thoughts, feelings or opinions. People use looks, gestures, words, sounds and pictures as basic means of communicating with each other. The senses used are mainly sight, hearing and touch.

IMPORTANCE OF COMMUNICATION TO INSTRUCTION

a) Most important step in learning process.

b) Rate-limiting step of instruction.

c) Control by instructor of much of the communication process.

TRAINEE CHARACTERISTICS AFFECTING COMMUNICATION

a) Skills, knowledge and abilities.

b) Attitudes (motivation).

c) Experience (background, values).

d) External pressures.

e) Communication skills.

INSTRUCTOR CHARACTERISTICS AFFECTING COMMUNICATION

a) Voice

1. Pitch
2. Rate
3. Force
4. Clarity

b) Body action

1. Posture
2. Gestures
3. Movement
4. Facial expressions

c) Eye contact

1. Eye to eye
2. Eye movements

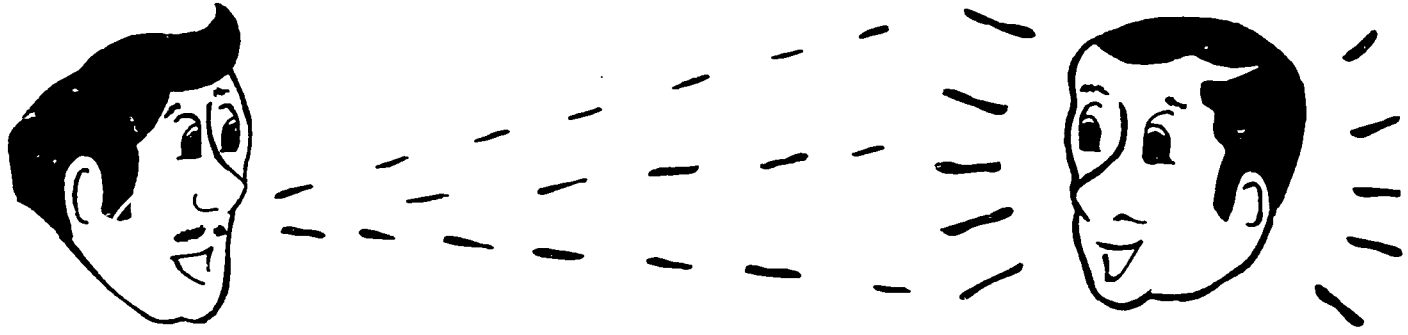
At some stage or other, there are at least two persons involved in the communication. One is termed the sender, who is the person conveying the message. This message is transmitted through a medium and finally gets to the other party who is termed the receiver.

When the communication is efficient, the message gets to the receiver exactly as it was conceived and delivered by the sender. As a trainer, one should ensure that the messages to one's trainees get to them as one conceived and delivered them.

The major problem in communicating is the illusion that the communication has been achieved. What factors contribute to the failure of several communication exercises? There are two to consider:

1. The sender, and in this case the trainer or instructor. There are some characteristics which will contribute to this problem. These may be (a) voice; (b) body actions and (c) eye contact. These can be trained to bring positive results.
2. The receiver or the trainee. Some of the factors or characteristics which may affect communication are: (a) entry skills; (b) attitudes; (c) experiences; (d) external pressures and (e) language skills.

COMMUNICATION IS . . . . . .



SENDER

RECEIVER

. . . . . TRANSMISSION OF IDEAS FROM ONE PERSON TO ANOTHER

SENDER

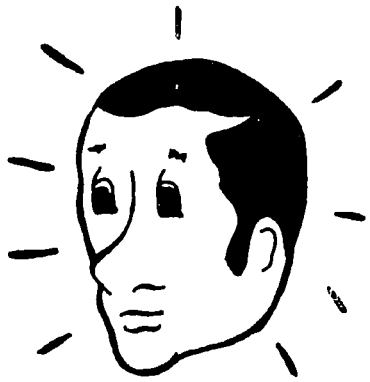
RECEIVER

THE GREATEST PROBLEM OF COMMUNICATION
IS THE ILLUSION THAT IT HAS BEEN
RECEIVED

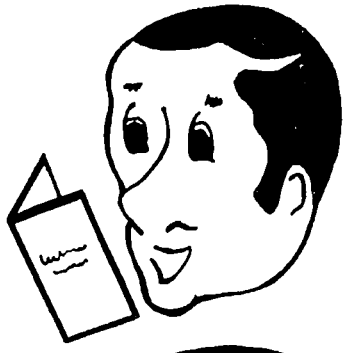
PS.OH.03

THE RECEIVER IS:

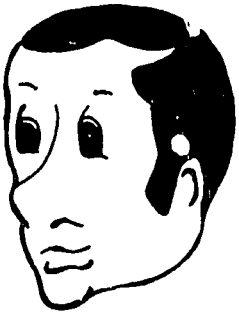
. . . . A LISTENER



. . . . A READER



. . . . AN OBSERVER



. . . . A PERFORMER

TRAINEE CHARACTERISTICS WHICH AFFECT COMMUNICATION

- ENTRY SKILLS, KNOWLEDGE, ABILITIES
- ATTITUDES (MOTIVATION)
- EXPERIENCES (BACKGROUND, VALUES)
- EXTERNAL PRESSURES
- LANGUAGE SKILLS

INSTRUCTOR'S CHARACTERISTICS WHICH AFFECT COMMUNICATION

1. VOICE
   - A) PITCH
   - B) RATE
   - C) FORCE
   - D) CLARITY

2. BODY ACTIONS
   - A) POSTURE
   - B) GESTURES
   - C) MOVEMENT
   - D) FACIAL EXPRESSIONS

3. EYE CONTACT

PS.OH.06

WORKSHOP 2 Training of Trainers

UNIT 5 Presentation Skills

LESSON 2  *FEEDBACK*

ESTIMATED TIME 30 minutes

PREREQUISITES Lesson 1 of Unit 5

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  list three methods of obtaining feedback; and

  explain the importance of feedback in communication.

- Under the following conditions:

  with reference to information contained in the class notes.

- To these standards:

  to represent 90% accuracy.

INSTRUCTIONAL RESOURCES

Information Sheet PS.IS.02

Overhead Transparency PS.OH.07

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Review the communication cycle - use PS.OH.03.
2. Define and illustrate feedback - use PS.IS.02.
3. Discuss the value of feedback to effective communication.
4. Introduce and discuss the three methods of obtaining feedback in communication - use PS.OH.07.

5. Discuss how weak feedback questions can produce faulty feedback.

TRAINEE ACTIVITY

1. Trainee to explain the feedback route by stating what happens between the receiver and the sender.
2. Trainee to explain ways in which he/she has given feedback in communication - facial expression, head movements, etc.
3. Trainee to explain the result of not getting feedback, using his/her own experiences to strengthen his/her point.
4. Trainee to explain each method as it is discussed pointing out how each is practised.
5. Trainee to list questions which are weak in providing feedback and to list others which are good for providing valid feedback.

EVALUATION ACTIVITY

1. List some common ways of obtaining feedback.
2. List three questions which are poor for providing feedback.
3. List five questions which are good for providing feedback.

FEEDBACK

In the diagram illustrating the communication cycle (PS.OH.03) the return route from the receiver to the sender is labelled Feedback. Feedback then is the term given to that part of the communication cycle in which the receiver indicates to the sender what he has received from his message. It is a message of some sort which the receiver is returning to the sender and it will say what quality message was received.

Where this feedback is missing, the sender has no real way of determining if his message has been received as he had intended. Feedback is given in the form of questions from the receiver or on the other hand from answers given to questions from the sender. Some time eye contact can serve as a means of getting feedback from the receiver. In this case, the received has a puzzled or questioning look on his face indicating that something in the message is not clear.

Formal or informal evaluation of a performance serves as a means of receiving feedback. The quality of the performance can indicate the quality of the message which was transmitted during the communication.

FEEDBACK IS OBTAINED BY WAY OF . . . . .

- QUESTIONS
  1. SENDER TO RECEIVER
  2. RECEIVER TO SENDER
- EYE CONTACT
- PERFORMANCE EVALUATION

WORKSHOP 2 Training of Trainers

UNIT 6 *INSTRUCTIONAL MEDIA*

WHAT IS THIS UNIT ALL ABOUT

This unit describes a variety of instructional materials and techniques that may be used to assist in instruction. The trainee will be able to master an objective much quicker if visual material is used in conjunction with an oral description. This unit suggests procedures for selecting instructional media and gives directions for using it.

WHY DOES THE TRAINEE NEED THIS

Most persons involved in a training situation rely heavily, if not entirely, on the spoken word. However, evidence indicates that the time required to master new skills is less and the retention of those skills is much greater when an additional sense is used along with hearing. The trainee will achieve a higher success rate in instructing if the procedures and techniques described in this unit are practised on-the-job.

WHAT DOES THE TRAINEE NEED TO KNOW BEFORE BEGINNING

Unit on Presentation Techniques.

WHAT EQUIPMENT AND SUPPLIES ARE NEEDED

	LESSON/OBJECTIVES			
	1			2
	1	2	3	4
Information Sheet	X			X
Overheads	X	X	X	X
Flip Chart				
Chalkboard	X	X	X	X
Work Sheets				
Assignment Sheet				

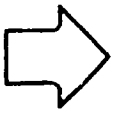
NUMBER OF LESSONS AND TOTAL INSTRUCTIONAL TIME

Total Lessons: 2

Total Time: 1 hour

WORKSHOP 2 Training of Trainers

UNIT 6 Introduction to Instructional Media

LESSON 1  *INTRODUCTION TO INSTRUCTIONAL MEDIA*

ESTIMATED TIME 30 minutes

PREREQUISITES Completion of Unit 5 and knowledge of the basic communication practices.

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  explain briefly the definition of Instructional Media;

  list the criteria for selecting Instructional Media; and

  list the planning steps for effective employment of Instructional Media in instruction.

- Under the following conditions:

  recall, after a thirty minute class discussion.

- To these standards:

  as described and listed in the class notes.

INSTRUCTIONAL RESOURCES

Information Sheet IM.IS.01

Overhead Transparencies IM.OH.01, IM.OH.02, IM.OH.03 and IM.OH.04

Resource Material IM.RM.01

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Discuss definition of Instructional Media - use IM.OH.01.
2. Identify examples of Instructional Media - use IM.OH.02.
3. Discuss guidelines for selecting suitable instructional material - use IM.OH.03.
4. Discuss guidelines for planning the use of instructional media - use IM.OH.04.

TRAINEE ACTIVITY

1. Trainee to review IM.IS.01 and identify definition. He/she expresses in his/her own words the definition given.
2. Trainee to review listings of media explaining selected items given by trainer.
3. Trainee to explain each criteria as the trainer introduces and discusses each. Trainer monitors explanation to bring out the best.
4. Trainee to explain each of the procedures listed and explain the relative importance of each to the training activity.

EVALUATION ACTIVITY

1. Provide a suitable definition for instructional media.
2. List three criteria for selecting suitable training material.
3. List three vital procedures for planning the use of instructional media.
4. List the media/material you would choose to train in a particular skill.

INSTRUCTIONAL MEDIA

Instructional Media are defined as devices or portions of written matter which a trainer use to help the trainees to understand and achieve objectives. Media provide the ways and means of learning through appropriate sensory experiences. Looking, listening, smelling, tasting, touching and manipulating are prime, first-hand impressive learning factors.

The selection of the training media must be done carefully if they are to be effective:

The criteria for selecting material are:

1. Meets learning needs.
2. Reflects up-to-date and accurate content.
3. Presents subject at the level of the group.
4. Encourages thought and inquiry.
5. Suggests other learning activity.
6. Maintains good technical quality.

In addition to selecting the material to be used, if the material is to fit into the training content and activities, certain planning must be done before-hand.

In planning the instructional media the trainer should:

1. Identify the learning problem.
2. Select the appropriate materials.
3. Order early.
4. Schedule equipment.

5. Check the equipment before class begins.

6. Use when related to the unit of study at hand.

INSTRUCTIONAL MEDIA

A DEVICE OR PORTION OF WRITTEN MATTER A TRAINER

USES TO HELP TRAINEES ACHIEVE OBJECTIVES

IM.OH.01

MATERIALS FOR LEARNING EXPERIENCES

TEXTBOOKS
SUPPLEMENTARY BOOKS
REFERENCE BOOKS, ENCYCLOPEDIAS
MAGAZINES, NEWSPAPERS
DOCUMENTS, CLIPPINGS
DUPLICATED MATERIALS
PROGRAMMED MATERIALS
(SELF-INSTRUCTION)
MOTION-PICTURE FILMS
TELEVISION PROGRAMS
RADIO PROGRAMS
RECORDINGS (TAPE AND DISK)
FLAT PICTURES
DRAWINGS AND PAINTINGS
SLIDES AND TRANSPARENCIES

FILMSTRIPS
MICROFILMS, MICROCARDS
STEREOGRAPHS
MAPS, GLOBES
GRAPHS, CHARTS, DIAGRAM
POSTERS
CARTOONS
PUPPETS
MODELS, MOCKUPS
COLLECTIONS, SPECIMENS
FLANNEL-BOARD MATERIALS
CHALKBOARD MATERIALS
CONSTRUCTION MATERIALS
DRAWING MATERIALS
DISPLAY MATERIALS

CRITERIA FOR SELECTING TRAINING MATERIALS

1. MEET LEARNING NEEDS

2. REFLECT UP-TO-DATE AND ACCURATE CONTENT

3. PRESENT SUBJECT AT THE LEVEL OF GROUP

4. ENCOURAGE THINKING AND INQUIRY

5. SUGGEST OTHER LEARNING ACTIVITIES

6. MAINTAIN GOOD TECHNICAL QUALITY

PLANNING THE INSTRUCTIONAL MEDIA

THE PROCEDURES ARE:

1. IDENTIFY THE LEARNING PROBLEM

2. SELECT THE APPROPRIATE MATERIALS

3. ORDER EARLY (TO AVOID DELAY)

4. SCHEDULE EQUIPMENT

5. CHECK EQUIPMENT BEFORE CLASS BEGINS

6. USE WHEN RELATED TO THE UNIT OF STUDY AT HAND

TRAINING AIDS

The training director must concern himself as much with the people to be trained as with the program to be presented. After the training objectives have been carefully spelled out, and the characteristics of the trainees assessed, only then can ways of reaching these goals be properly determined. These ways comprise the content and methods of the training program.

Method, then is the bridge that carries content to the individual in a meaningful, assimilative manner. Methods of one type or another can be described as media of communication, or means to an end (objective). The discerning choice and skillful use of media as effective tools and techniques provide a significant ingredient to the success of any training program.

The gap between a *training* and *learning* program is frequently wide because of the lack of a suitable bridging, or - if you will - media of communication. Media provide the ways and means of learning through appropriate *sensory* experience. Looking, listening, smelling, tasting, touching, and manipulating are prime, firsthand, impressive learning factors. When properly used, such experience can stamp realism and meaning into a training program.

Where raw, sensory experience cannot be employed for learning purposes because of practical considerations, as is frequently the case in many on-the-job situations, the program developer or trainer must communicate through contrived, reconstructed, or simulated means. These tools

of the trade are commonly lumped together as training aids. It should be pointed out here that the raw, experiential resources of learning are much more difficult to program, but are potentially more effective than substituted media in many situations.

The training director must become knowledgeable in methods and media, particularly concerning their inherent and sometimes unique qualities. Media of communication range from the most concrete experience, as in the case of actual, productive work, to the most abstract representation of experience, as in printed or spoken words. Between these extremes, of course, lies a vast storehouse of training resources in the form of methods and aids.

Figure A showing various media of communication on a relative scale of concrete-to-abstract experience, depicts the range of tools and techniques available in training.

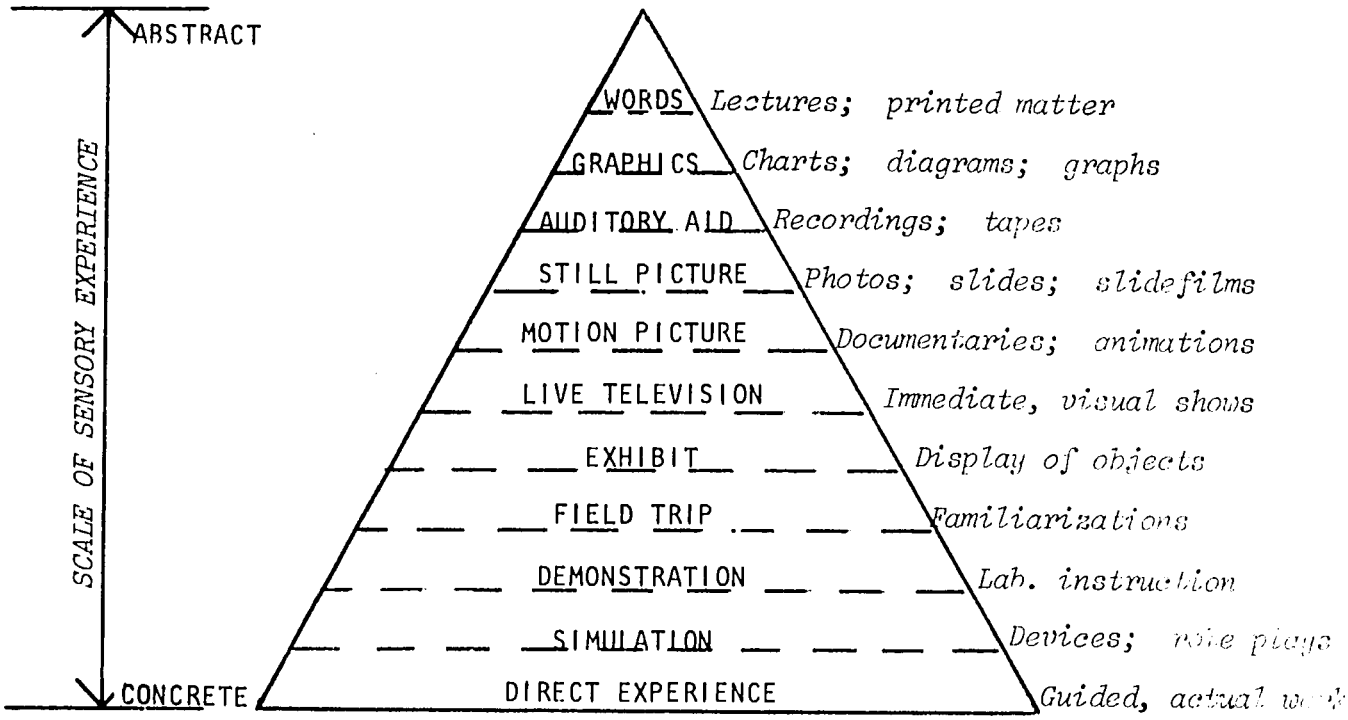


FIGURE A

The broad array of media and methods of communication for use in the training-learning process calls for consummate understanding and a variety of skills. However, the training director or program-developer must have an awareness of the range of training resources. By infusing the training program with media appropriate to both trainees and content objectives, the ordinary, verbose classroom session, for example, can be transformed into a vital, stimulating experience leading to real learning; while in the absence of more concrete tools and techniques, the use of mere words, abstract terms, bare sentences, whether spoken or written, can have the deleterious result of providing little meaning or of being totally misconstrued by the learner in need of more tangible ways of understanding.

Therefore, to design a training program that can take advantage of more concrete resources, as these may be needed, takes considerably more than technical subject-matter competence. It demands an ability to program media, if training objectives are to be reached.

TRAINING THROUGH DIRECT EXPERIENCE

DESCRIPTION

Direct, firsthand experience, mentioned earlier as the most concrete of all training media can be a very powerful learning method when properly programmed. It involves the whole trainee, his physical senses as well as his mind, giving him immediate, sensory contact with the actual job environment. Direct experience incorporates the concept of "learning by doing" and activities associated with on-the-job training. The idea is among the oldest forms of teaching, and the pattern is still very much with us.

Direct experience can be a most stimulating, satisfying way to learn, but under certain conditions it can turn out to be very frustrating. The difference between these two effects is worthy o. careful consideration by every organization using experience as the best teacher.

ADVANTAGES

What are its values? The clues to using the technique of direct experience in a program of training lie in its relationship to reality (actuality) its requirement for programming (guidance), and its culmination in an end product (result). Actual experience implies that the learner will get involved, that he will *participate* in a normal work task or subtask. This can result in true learning, provided that the purpose is clear to the trainee, and guidance in work performance is furnished.

Another positive characteristic is that this type of learning is unusually motivational. The technique can be programmed by the training staff or in association with line management for use in a variety of on-the-job situations. It lends itself very well to coaching as a realistic means of accomplishing certain training assignments.

LIMITATIONS

Despite obvious advantages, efficient handling of direct experience as a training technique is quite difficult. Oftentimes it becomes more expensive, both in time and money, than the more indirect methods of training. There is frequently a tendency to confuse osmotic exposure with forthright training, and in such cases it is not unusual to find misjudgment of the trainee's ability. Use of the direct technique can be disruptive to normal work procedures, thus reducing the productivity of the regular work force. Another detrimental feature sometimes encountered is the potential jurisdictional dispute arising from differences

between line management and staff training in handling administrative and functional details of the trainee's program.

APPLICATION

The opportunity to employ direct experience as a training technique is present in many kinds of training situations. The following guidelines take into account some key considerations in applying this method:

1. Program the technique in relation to the learning objectives.
2. Develop a written plan to assure that these outcomes are achieved, making certain that the work supervisor (and coach) as well as the trainee himself understands both the purpose and the means.
3. Request the trainee to log any information or question that is relevant to his learning task. This will serve as an excellent feedback device for follow-up, clarification and review.
4. Consider the establishment of a "learning laboratory" in those work situations where training results can be expected to be good. Be selective in people and places.
5. Blend theory with practice by providing for smooth transition between classroom and job through directed experience for the trainee.

To try out this technique, the training director or program developer may want to review one of his training programs and, in light of its specific objectives, ascertain the efficacy of using *direct experience*.

MEDIA OF INDIRECT EXPERIENCE

The media of *simulation*, *demonstration*, the *field trip*, and the *exhibit* are useful training techniques devised to provide indirect learning experiences. Classified on our scale Figure A as less concrete experience, they afford the learner sensory contact with a subject through a contrived rather than the actual situation.

The program developer, by using one or another of these methods, can modify or control the real-life situation to suit his training goal. He can reorganize, rearrange, or reduce reality in order to stress certain features. He can present or represent a slice of reality.

The setting for study can be the conventional training classroom, as in a demonstration of objects shown out of context to their normal environment Perhaps more frequently, however, observation and study must be done at an outside site, as in the use of a field trip or mock-up. Where the technique calls for performance, as in a simulation exercise, limitations are placed upon the learning situation, the activity being only a substitute and not the real thing, and the learner is delayed in the actual performance of the task.

SIMULATION

This is most often a plan or device that incorporates certain characteristics of direct experience while avoiding some of its disadvantages for training. The closer the relationship between the contrived experience and the real job, the greater the chance of transfer. But differences between simulation and actuality should be made clear to the trainee. The simulation exercise should provide knowledge of results, preferably in some form approximating the job situation. Proper actions should be reinforced whenever possible.

The two principal types of simulation exercises used in training take the form of operational *gaming* and *mock-ups*. Business games have been applied to manager development and are descendants of the war games used in training military staff personnel. In both cases, the plan includes a set of ground rules resembling actual conditions and providing the structure for making decisions. The decision makers (players) are presented with these ground rules resembling actual conditions and providing the structure for making decisions. The decision makers (players) are presented with these ground rules, basic information about their organization, and its operating framework. Each player assumes a functional role, serving as a team member to plan, direct, and control the operation as he might do in an actual, competitive situation. Business games are available for use with or without the aid of data-processing equipment.

The mock-up or simulator is a workable device which bears a functional relationship to reality. Many were developed during World War II for the Army and Navy, and were particularly effective in aircraft

gunnery training. Today, important users of this method are the airlines, to train pilots on the ground in flight simulators. There are numerous other uses for mock-ups in industry and government where on-the-job training would be too dangerous, too expensive, or altogether too inefficient.

Sometimes a mock-up makes a task simpler to understand than having access to the real situation or thing. Where equipment or systems contain elements too small, too large, or too spread out to be studied as they are, these elements can be represented in smaller- or larger-scale reproductions, and in this way gain better training emphasis. Also, the mock-up can provide practice for the development of motor skills as well as understandings. In special situations, such as in the handling of military equipment, these devices have been built to elaborate, complicated specifications in order to come as close as possible to actual job conditions. Highly sophisticated training devices of this type are obviously quite expensive. This cost, however, must be measured against the numbers to be trained, duration of the training period, lead time available, and the importance of this training to the total project.

SELECTION OF MEDIA

There are several criteria in choosing appropriate media and methods for a training program:

1. *Who.* Determine the *characteristics* of the group to be trained. Provide for individual differences. Consider the capabilities of the program presentors (they may need some special training on techniques).

2. *Why.* Establish the program's *objectives,* both from the learner and corporate standpoints. Which tool, technique, or combination of media will afford the greatest opportunity of reaching program objectives within budgeted limits.

3. *What.* Organize the *content* of the program in relation to the objectives. Bear in mind that media can sometimes be considered as content, such as a motion picture or direct experience.

4. *Where.* Decide on the *location* best suited to the objective of each part of the program. The classroom may not be the best place to conduct the entire training program. Examine compromise solutions to overcome common restrictions in time, travel, and cost.

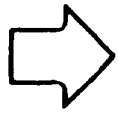
5. *How.* Plan the program's *implementation* as completely as possible in advance. Proper use of the various media will require administrative attention to the scheduling of resources; the preparation, purchase, and distribution of training aids; and the setting up of suitable facilities and arrangements.

6. *When.* Provide for *media* to conform with all known elements in the training situation. Selection must be based on evaluation of factors indicated in the previous items.

The professional training man is ever mindful of these cardinal principles as he goes about the business of setting up his training program. He maintains his perspective on the full range of tools and techniques without a prejudice for or against any of them. He bases his judgment upon which media will accomplish the training tasks most economically and effectively. He provides the necessary mix in his selection to lend interest, pacing and satisfaction while, at the same time, reaching the program's objectives. The skilled trainer plans well in advance, knowing that effective selection and use of training media bear a direct relationship to available "lead time." And finally, he retains a balanced view of costs, as between the ineffective, inefficient, useless exercise of just going through the motions of training, versus the purposeful programming of learning experiences to gain for the trainee a new standard of job performance.

WORKSHOP 2 Training of Trainers

UNIT 6 Introduction to Instructional Media

LESSON 2  *GRAPHICS*

ESTIMATED TIME 30 minutes

PREREQUISITES Lesson 1 of this Unit and Unit 5

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  identify the two categories of Graphics: and

  select and prepare an aid.

- Under the following conditions:

  from recall and aid to be appropriate for training in the trainee's position.

- To these standards:

  meet the criteria of the class notes.

INSTRUCTIONAL RESOURCES

Information Sheet IM.IS.02

Overhead Transparencies IM.OH.05, IM.OH.06, IM.OH.07, IM.OH.08 and IM.OH.09

Resource Material IM.RM.02

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Review highlights of Lesson 1 - Instructional Media - use IM.OH.01.

2. Define and discuss graphics as one type of instructional media - use IM.IS.02.

3. Introduce the categories of graphics - use IM.OH.05.

4. Discuss uses, advantages and disadvantages of graphics - IM.OH.06 and IM.OH.07.

5. Discuss guidelines for preparing graphics - use IM.IS.02 and IM.OH.08.

6. Discuss the technique for using aids - use IM.OH.09.

TRAINEE ACTIVITY

1. Trainee to recall definition of instructional media and list examples of instructional media.

2. Trainee to explain the definition in his/her own words; the others to select items from listings of instructional materials (IM.OH.02) which are considered graphics.

3. Trainee to differentiate between an aid and an apparatus.

4. Trainee to explain all of the uses of graphics giving examples to illustrate explanations. Individuals will be asked to explain the meanings of each advantage and disadvantage.

5. Trainee to provide reasons for each of the guidelines listed, and explain some likely results if the guidelines are not followed.

6. Trainee to explain the implications of each hint, giving examples of problems to be encountered by not following the hints.

EVALUATION ACTIVITY

1. List the two categories of graphics.
2. List two examples under each category.
3. List the guidelines for preparing a graphic.
4. Prepare an (aid) graphic to illustrate one simple idea in your position.

GRAPHICS

A graphic is a two-dimensional training material produced on an opaque background and not projected on a screen. Graphics may be fixed or flexible, multi-coloured or black and white, a diagram, map, picture or written material.

The training task sometimes demands materials that can communicate ideas and facts concisely, clearly and logically yet impressively. In this situation, it is quite likely that the trainer may develop graphics which are a combination of drawings, words, numbers and pictures.

There are two broad classifications of graphics, namely:

1. The Apparatus including chalkboards, magnetic boards, flannel, projector, easel pads; and
2. The Aids including charts, graphs, diagrams, illustrations, posters.

Graphics serve to support the spoken words by arousing interest, attracting attention, giving directions, outlining processes or relating functions.

Learners with below-average verbal proficiency will ordinarily need more graphic demonstrations than those with superior verbal skills.

SELECTING GRAPHICS

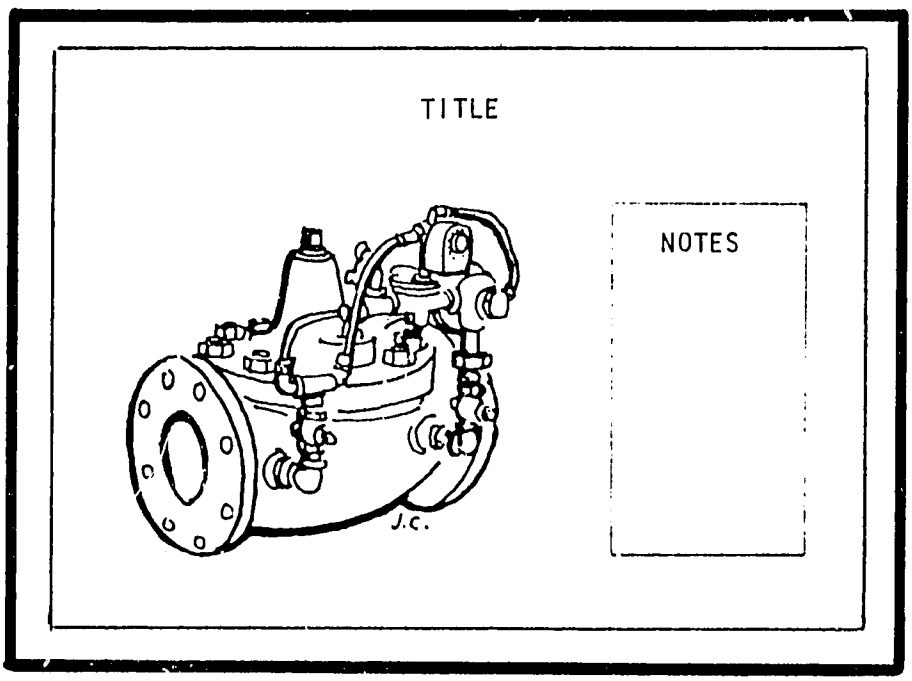
Whilst there is no hard and fast rule as to how to proceed in selecting graphics, if we are reminded of the purpose for using graphics, then this may serve as a guideline and will probably serve to influence our selection.

Whatever we select must be able to communicate ideas and facts concise y, clearly and logically. In short, we should select those which wil' do what we want them to do for us.

PREPARATION OF GRAPHICS

Many trainers find commercially produced graphics to be very convenient and useful but very often these graphics do not match the needs or level of the training very well. Where commercial graphics are not available, or when such are not appropriate, the trainer must prepare his own locally. If he has to prepare his own aids, there are some guidelines which he should follow. Below are some of the more basic ones and an example of the format of a self-made graphic:

1. The graphic must highlight a single idea.
2. The graphic must be simple.
3. The layout must be organized and attractive.
4. Details must be clear and legible.
5. The finished product must reflect good visual balance.



GRAPHICS

APPARATUS

- CHALKBOARD
- EASEL PAD
- FLANNEL BOARD

AIDS

- CHARTS
- GRAPHS
- DIAGRAMS
- ILLUSTRATIONS
- CARTOONS
- POSTERS

GRAPHICS ARE USED TO:

- RELATE AN IDEA
- TEACH FACTS AND PROCESSES
- SUMMARIZE INFORMATION
- ATTRACT AND HOLD ATTENTION

GRAPHICS

ADVANTAGES

1. MAY BE MADE BY TRAINER OR TRAINEE
2. MATERIALS ARE EASILY OBTAINED
3. VARIETY OF MATERIALS CAN BE USED

DISADVANTAGES

1. THE GRAPHIC IS ONLY AS GOOD AS THE ABILITY OF THE TRAINER TO USE IT
2. THE PRODUCTION OF SOME GRAPHICS MAY BE TIME CONSUMING

GUIDELINES FOR PREPARING GRAPHICS

1. PRESENT ONE BASIC IDEA

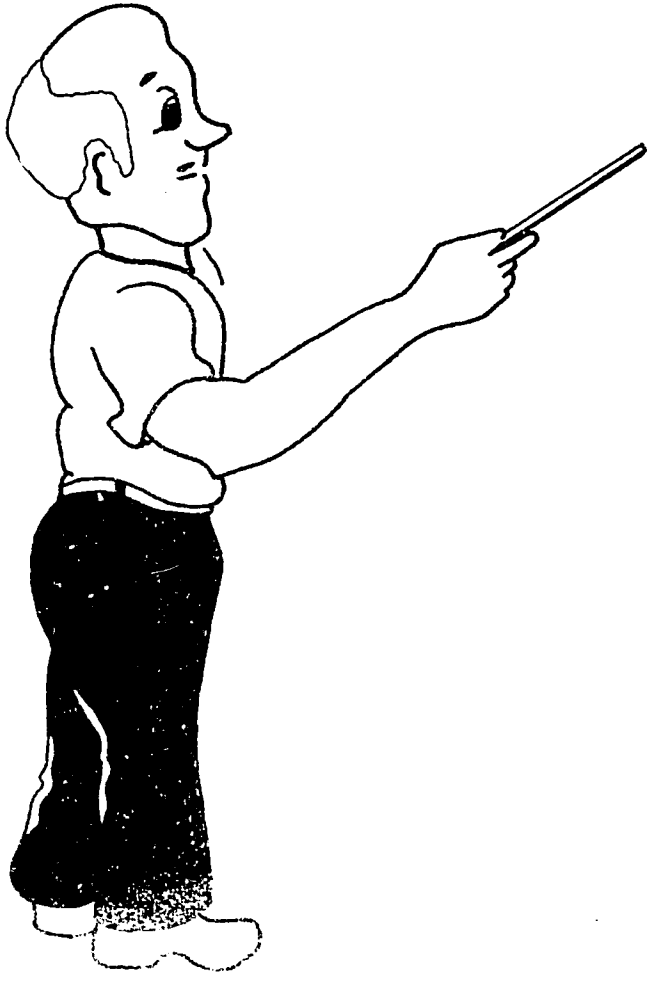
2. KEEP IT SIMPLE

3. ORGANIZE THE LAYOUT (SPACING)

4. MAKE DETAILS LEGIBLE

5. CREATE VISUAL BALANCE

HINTS FOR USING GRAPHICS



.... EXPLAIN AID, USING POINTER

.... KEEP AID COVERED WHEN NOT IN USE

.... SHOW AID SO ALL CAN SEE

.... TALK TO GROUP NOT TO AID

GRAPHICS

The training task sometimes demands materials that can communicate ideas and facts concisely, clearly, and logically, yet impressively. In this situation it is quite likely that the trainer will call upon graphics, which are a combination of drawings, words, numbers, and pictures. Designed in two dimensions, graphic materials are comparatively abstract, but have the ability to convey more in less time by compressing factual relationships in concepts. Actually, graphic materials fall into two broad classifications: (1) the apparatus, such as blackboards; projector easel pads; bulletin, flannel, and magnetic boards; and (2) the aids, including charts, graphs, diagrams, illustrations, cartoons, and posters.

The use of graphics offers several advantages, particularly in the presentation phase of a training program. These media will serve admirably in support of mere words when interest must be aroused, attention attracted, directions given, inspiration provided, trends emphasized, comparisons made, statistics interpreted, processes outlined, or functions related. The use of graphic symbols brings enormous areas of knowledge within the confined compass of man's vision. This distillation of experience, represented in graphic form, reduces mass data to conventionalized visual symbols - an abstract mode of communication. Learners with below-average verbal proficiency will ordinarily need more graphic demonstration than those with superior verbal skills. The graphic approach presents a vivid mental image that helps in analyzing, interpreting, and comparing relationships of data. Other significant benefits are the comparative ease in preparation, the low

cost, and the flexibility of use in either printed form for individual study or projectible form in an opaque or overhead projector for group use.

The blackboard (chalkboard) is one of the oldest and most time-tested of all aids to presentation, instruction, and conceptualization. Despite its honoured place, it is also one of the most abused tools of the trade. A considerable number of blackboard users violate one or more of these rules:

1. Move away from what you write or print.
2. Talk to the group, not the board.
3. Keep blackboard work legible.
4. Favour the upper rather than the lower section of the board.
5. Prepare complex drawings in advance but keep them covered until the appropriate time.
6. Use legible coloured chalk for easy data differentiation.
7. Develop complex points step by step.
8. Sectionalize the board and draw relationships diagramatically.
9. Use chalk-drawing tools if needed.
10. Keep the blackboard clean.

The easel pad is now widely used as a flip chart, particularly where a blackboard is not available. Because its size is comparatively smaller, and data exposure is normally limited to one panel at a time, it serves to concentrate attention on the orderly sequencing of points. Most often, these points have been prepared in advance, and therefore have the added advantage of serving as an outline for both speaker and audience during the presentation. Many of the conditions for effective use follow

suggestions already listed as good practices for blackboard users.

Flannel boards (and much of this is true of magnetic boards) are valuable in providing a way to build up points in a presentation. The flannel material on the board has an adhesive quality to which cardboard (or other light materials) sticks when it has a backing of floktite or sandpaper. The floktite-backed cards are placed on a table near the flannel board at the proper time. Flannel board presentation data must be pointed and their position in relation to other posted material should bear significance.

Charts, graphs, diagrams, illustrations, cartoons, and posters comprise the other part of the graphics category. Each of these media has a similar role to play in getting ideas across; and for this reason, these terms tend to overlap one another in definition and use. All of them are symbolic, lie in the more abstract range of the concrete-abstract scale, and therefore require a background of knowledge sufficient for interpretation.

The chart represents information in some visual, orderly, arranged form which might otherwise be very difficult to explain in words alone. It is especially useful in condensing data to a lucid, more readily remembered format. The graph is an accurate representation of measurable data, and its function is to present them in a less confusing, more interesting way. Various kinds are in use, including pictorial (pictograph), bar, circular, and line graphs, each helpful in drawing comparisons between factors and data, such as quantity, development, function, and relationships. A diagram is a line drawing made to explain the interrelationships between facts or functions. Often the abstraction being discussed cannot be readily understood without a diagram, which can range in style from the simple sketch to an intricate schematic one.

An illustration, in this sense, is a drawing intended to elucidate a point or show an example. The cartoon is a freehand interpretation of a situation using symbolization and exaggeration to carry a message or point of view boldly and laconically. Especially effective as a visual device, it commands attention and is provocative. For similar reasons, the poster can be a telling medium, making its point through picture or drawing. It usually calls for some type of action as well.

WORDS

It goes without saying that without verbal communication, the training task becomes most difficult. Yet words in themselves frequently lack the power to convey adequate meaning. Much in training, however, is camouflaged in verbiage, and programs of all kinds proceed on this highly abstract plane.

No longer need the training director or program designer be so heavily dependent upon, or limit himself so narrowly (and dangerously) to the printed manual or the straight classroom lecture. With modern media and methods of communication and instruction, everyone engaged in training is faced with the challenge of arranging meaningful learning experiences in a manner that will assure more expeditious and more economical training; for through these media the ordinary trainer or lecturer can, wtih comparatively little coaching, reach heights in training efficiency that formerly were possible only by highly talented, well-experienced professionals.

This can be achieved in any training organization if full consideration is given to the fundamental role of sensory experiences in the learning process. In all forms of training, *ends* can never be achieved without careful consideration of the *means* or *method*.

Post-training performance is probably as good a measure as we have for evaluating these media resources when properly used for learning and making behavioural changes. On this score, there is considerable evidence to indicate the worthiness of continuous examination, experimental use, and constant evaluation.

WORKSHOP 2 Training of Trainers

UNIT 7 *QUESTIONING TECHNIQUES*

WHAT IS THIS UNIT ALL ABOUT

This unit sets out to introduce the trainee to some basic understandings relating to questions and presents guidelines for formulating and presenting questions to a class.

WHY DOES THE TRAINEE NEED THIS

Modern training stresses the "drawing out" from trainees rather than the "putting in" and constant involvement of the trainees during the training experience. This is accomplished principally though the use of proper questions and the type of questioning techniques. The new trainee does not have the required skills to develop and use questions effectively hence he needs information and guidelines such as is contained in this unit.

WHAT DOES THE TRAINEE NEED TO KNOW BEFORE BEGINNING

Units 1, 2, 3 and 5.

WHAT EQUIPMENT AND SUPPLIES ARE NEEDED

ITEM	LESSON/OBJECTIVES
Chalkboard	X
Flip Chart	X
Overheads	X
Information Sheets	X
Resource Material	X

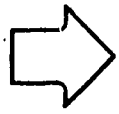
NUMBER OF LESSONS AND TOTAL INSTRUCTIONAL TIME

Total Lessons: 1

Total Time: 60 minutes

WORKSHOP 2 Training of Trainers

UNIT 7 Questioning Techniques

LESSON 1  *ORAL QUESTIONING TECHNIQUES*

ESTIMATED TIME 60 minutes

PREREQUISITES Satisfactory completion of Units 3 and 5

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  explain the types and uses of oral questions and describe the techniques for using oral questions effectively.

- Under the following conditions:

  by recalling after 60 minutes of class presentation and discussion.

- To these standards:

  to represent 90% accuracy of the information in the class notes.

INSTRUCTIONAL RESOURCES

Information Sheet QT.IS.01

Overhead Transparencies QT.OH.01, QT.OH.02, QT.OH.03, QT.OH.04 and QT.OH.05

Resource Material QT.RM.01

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Introduce and discuss scope of lesson - use QT.OH.01.

2. Review use of question in the communication cycle.
3. Discuss the use of oral questions in presentation - use QT.IS.01 and QT.OH.02.
4. Introduce and discuss the types of oral questions - use QT.OH.03.
5. Discuss the characteristics of good questions - use QT.OH.04.
6. Introduce and guide critique of samples of questions - use QT.OH.05.

TRAINEE ACTIVITY

1. Trainee to read each item to be covered in the lesson from QT.OH.01 as it is introduced by trainer.
2. Several trainees to recall the communication cycle and state the use of questions for purposes of feedback.
3. Individual trainee to state the places during the presentation where questions would be useful and why they are used.
4. Several trainees to give examples of recall or memory questions and also thought questions or problems. Fellow trainees critique each example.
5. Trainee to explain each of the six characteristics listed in QT.OH.04.
6. Trainee to study several examples of questions and determine whether they are good questions.
7. Trainee to explain the implications of each of the techniques discussed.

EVALUATION ACTIVITY

1. List, giving examples of each, the two types of oral questions discussed.
2. State six points to bear in mind when asking questions in a presentation.
3. List five examples for each of the two types of questions.

QUESTIONING

During and following the presentation, the oral question can be used to good advantage. It can help to fix the points in the mind of the learner by bringing in the element of repetition and can also assist him in discovering how well he has comprehended the presentation, especially the reasons for the various performances or practices.

Oral questions stimulate thinking and tend to keep the learner alert. Effective oral questioning in training is a method which requires a good deal of practice to perfect. Even experienced trainers find that, when using this method, they need to be constantly alert, in order to avoid using questions which are not well suited to the purpose at hand. Only by thinking out carefully the questions to be used and by making a conscious attempt to follow the rules of good questioning, can the trainer be sure of securing the results which he hopes for in using oral questions.

TYPES OF QUESTIONS

More than one type of question can be used during the presentation. The trainer should recognise the purpose of each question which he uses and frame the question for the purpose desired. Questions may be of any of the following topics:

1. Memory or recall.
2. Thought questions or problems.

MEMORY OR RECALL QUESTIONS

Questions of this kind require the learner to recall a fact or

an idea with which he is familiar and which needs to be recalled for purposes of review, repetition or emphasis.

It is often necessary to ask such questions in order to establish a certain fact in the mind of the learner just before the information is applied to some specific performance.

EXAMPLE: What is the reagent used in testing chlorine residual?

THOUGHT QUESTION OR PROBLEM

Questions of this kind require the learner to apply his knowledge and arrive at some decision. These are the judgment-forming kind of questions. Such questions may indirectly test the learner's ability to recall facts and also his understanding of key points, since both are required to arrive at satisfactory answers. While often referred to as a question, this form may be more accurately referred to as a problem.

EXAMPLE: What would be some of your conclusions if after a reagent is added to a water sample no change occurs? Give reasons for each conclusion.

SUGGESTIONS FOR THE USE OF ORAL QUESTIONS

1. Think out carefully and clearly express your questions. It should be understandable by the majority of the trainees.
2. Make your questions concise and to the point.
3. Avoid ambiguous questions.
4. Require that answers be expressed in complete, clear sentences.
5. Do not ask questions in such a way as to be answered by "yes" or "no."

6. Avoid asking questions in two or more forms. Choose a clear expression, the meaning of which cannot be mistaken and stick to it.
7. Do not permit group or chorus answers.
8. Do not adopt a fixed order for calling on trainees for answers. Allow everyone an opportunity to answer some questions.
9. Ask question, giving time for the trainees to formulate an answer, then name the person who is to answer. Do not direct questions to individuals.
10. Never embarrass a trainee by commenting unfavourably on honest inability to answer a question. Be tactful and require another trainee to answer the question.
11. Learn not to reveal by facial expression, tone of voice or mannerism the correct answer to a question.
12. When a correct answer is given do not continue asking the same question as this tends to confuse the group.

- WHY ASK A QUESTION
- WHEN TO ASK A QUESTION
- CHARACTERISTICS OF A GOOD QUESTION
- TECHNIQUES FOR ASKING A QUESTION

WHY ASK QUESTIONS?

1. TO ASSIST THE TRAINEE BY:

   A) ALERTING HIM TO MAIN POINTS

   B) REQUIRING PARTICIPATION

   C) REINFORCING LEARNING

2. TO ASSIST THE TRAINER BY:

   A) IMPROVING PARTICIPATION

   B) PROVIDING FEEDBACK

   C) AIDING IN GROUP CONTROL

TYPES OF QUESTIONS

RECALL OR MEMORY

- WHAT IS THE REAGENT USED IN TESTING CHLORINE RESIDUAL?

THOUGHT QUESTIONS OR PROBLEM

- WHAT WOULD BE SOME OF YOUR CONCLUSIONS IF AFTER ADDING A REAGENT TO A WATER SAMPLE NO CHANGE OCCURS?

GOOD QUESTIONS:

- SHOULD HAVE A SPECIFIC PURPOSE
- SHOULD BE EASILY UNDERSTOOD
- SHOULD EMPHASIZE ONE POINT
- SHOULD REQUIRE A DEFINITE ANSWER
- SHOULD DISCOURAGE GUESSING
- SHOULD NOT SUGGEST THE ANSWER

CONSIDER THESE QUESTIONS

JOHN SMITH, WHAT ABOUT THESE PUMPS?

TO WHICH RESERVOIR IS PUMP NO. 2 CONNECTED?

WHICH TEST IS MOST SUITABLE TO MEASURE THE WATER QUALITY BETWEEN THE PUMP AND RESERVOIR?

METHODS OF TEACHING

SHOP AND TECHNICAL SUBJECTS

by

GERALD B. LEIGHBODY
Professor of Education
The State University of New York
Buffalo, New York

DONALD M. KIDD
Former Director of Vocational Education
Syracuse, New York

Chapter 5: pages 44-47

WORKSHOP 2 Training of Trainers

UNIT *PRESENTATION PREPARATIONS*

WHAT IS THIS UNIT ALL ABOUT

The main thrust of this series of workshops is to provide the trainees with those skills and knowledge which can help towards making effective presentations as they train others.

This unit provides the guidelines to take them through the presentations. It therefore contains check-lists for preparations for and conducting of presentations.

WHY DOES THE TRAINEE NEED THIS

As the new trainer begins to practise all the skills presented, he is likely to overlook vital areas of consideration. He therefore needs as much assistance as possible to steer him along, until he has developed fully and is able to rely on himself.

WHAT DOES HE NEED TO KNOW BEFORE BEGINNING

He needs all the prescribed skills and knowledge inlcuded in the Units 1 through 8.

WHAT EQUIPMENT AND SUPPLIES ARE NEEDED

ITEM	OBJECTIVES								
	1	2	3	4	5	6	7	8	9
Information Sheets	X	X	X	X	X				
Work Sheets	X	X	X	X	X				
Overheads	X	X	X	X	X				
Overhead Projector	X	X	X	X	X				
Chalkboard	X	X	X	X	X				

NUMBER OF LESSONS AND TOTAL INSTRUCTIONAL TIME

Total Lessons: 4

Total Time: 3½ hours

WORKSHOP 2 Training of Trainers

UNIT 8 Presentation Preparations

LESSON 1  *SELECTING SITE AND TRAINEES FOR PRESENTATION*

ESTIMATED TIME 30 minutes

PREREQUISITES Completion of all Units and assignments of Workshop 1, and Unit 4 of Workshop 2.

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  identify important factors to be considered when selecting a presentation site;

  explain how working conditions can be simulated to ensure efficient training; and

  identify important factors to be considered when selecting participants for a presentation.

- Under the following conditions:

  recall and with reference to presentation to be made.

- To these standards:

  80% correct.

INSTRUCTIONAL RESOURCES

Information Sheet PP.IS.01

Overhead Transparencies PP.OH.01, PP.OH.02, PP.OH.03 and PP.OH.04

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Discuss sites for training on-the-job - use PP.OH.01.
2. Introduce and discuss simulated conditions; what it is and why it is necessary in training - use PP.OH.02.
3. Discuss the characteristics of a good presentation site - use PP.OH.03.
4. Discuss criteria for selecting trainees for training - use PP.OH.04.

TRAINEE ACTIVITY

1. Trainee to explain the reason for making presentations in these locations. He/she will be guided to bring out the fact that these are where the work is done.
2. Several trainees to explain what constitutes simulated conditions. They will further give reasons for utilizing these conditions and what are the special values of simulation.
3. Trainees will be called upon to explain the implications of each characteristic listed on PP.OH.03.
4. Several trainees will be asked individually to state how to determine those persons who need training. Others will be asked to state why training courses have entry requirements and how these affect the chances of the trainees to succeed.

EVALUATION ACTIVITY

1. List three places where on-the-job training can take place.

2. Explain what is simulation.

3. List the criteria which you will use to select trainees for your presentation.

SELECTING SITE AND TRAINEES FOR PRESENTATION

When a presentation is to be made, careful consideration must be given to several factors if it is to serve its purpose.

In making a useful presentation, the trainer must be imparting the skills, information and attitudes of the occupation to the trainees. If this is to be done effectively, the site, among other things, must be appropriate and the trainees must be ready for the training.

To this end, careful attention must be paid to:

1. Selection of site.
2. Simulated conditions.
3. Selection of participants for presentation.

SELECTION OF SITE

A presentation may be made in the field, in the laboratory or workshop, in the office, in a classroom or in any suitable work space. The type of presentation and the conditions under which it is to be performed will dictate which of these is selected. In any case, a site should be chosen which enables the objectives of the presentation to be achieved.

Some of the characteristics of a good presentation site are:

a) It has adequate space for working, laying out tools, equipment and aids, and for unobstructed observation by all participants. This is especially important where the demonstration technique is used.

b) It is away from distractions such as noisy crowds, machines and traffic.

c) Lighting and ventilation are adequate.

SIMULATED CONDITIONS

It is sometimes neither possible nor convenient to make a presentation under actual working conditions. In such cases the desired conditions may be simulated.

The site chosen should be easily adaptable to the required "make-up" conditions. This can be ascertained after the objectives of the presentation are fixed and a checklist made of all necessary equipment etc.

Presentations made under these conditions can be very beneficial to a trainee as the conditions can be controlled to match his level of competence. He could then be trained through progressively-more difficult stages until the required efficiency is met.

SELECTION OF GROUPS

In selecting a group for training, two main factors should be considered. They are:

1. That the need exists for the training offered.
2. That the prerequisites are met by the trainees.

Task Analysis and a pre-test will provide the trainer with the necessary information to make the decision as to who needs training. Having determined all those who have a need for training, the other step is to establish those who are ready to undertake training of the type needed. It will be found that many who need training will not have the prerequisites for the type of training being contemplated.

Where this prerequisite is lacking, the chances of the trainee benefitting from the training in any meaningful way are 'slim'. The

trainer will assess the several demands which the training will make on the trainee for successful completion and ensure that such abilities are present in the trainee.

Finally, remember that there is a limit to the size of the group that will ensure that the training is effective. Many experts suggest a maximum of between eight and twelve for skilled classes but for beginning trainers, the numbers should be restricted to between six and eight.

POSSIBLE SITES FOR MAKING PRESENTATIONS

1. IN THE FIELD

2. IN THE LABORATORY OR WORKSHOP

3. IN THE OFFICE

4. IN THE "CLASSROOM" SETTING

5. ANY APPROPRIATE PLACE

SIMULATED CONDITIONS ARE VALUABLE SINCE THEY . . . . .

CAN BE CONTROLLED TO MATCH THE LEVEL AND COMPETENCE OF THE TRAINEE

CAN BE SITED AT THE MOST CONVENIENT LOCATION

CAN BE CONTROLLED TO REDUCE OR ELIMINATE HAZARDS

PP.OH.02

CHARACTERISTICS OF A GOOD PRESENTATION SITE

1. ADEQUATE WORKING SPACE

2. FREE FROM DISTRACTION

3. ADEQUATE LIGHTING/VENTILATION

4. FIXTURES OR EQUIPMENT TO BE OF A MOVABLE TYPE

PP.OH.03

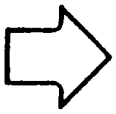
WHEN SELECTING PARTICIPANTS FOR TRAINING, ENSURE THAT:

1. THE NEED EXISTS FOR THE TRAINING

2. TRAINEES MEET PREREQUISITES

WORKSHOP 2 Training of Trainers

UNIT 8 Presentation Preparations

LESSON 2  *TRAINING PREREQUISITES*

ESTIMATED TIME 60 minutes

PREREQUISITES Units 1, 2 and 3 of this series of Workshops

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  determine and list the prerequisites for a specified training activity.

- Under the following conditions:

  using proposed training demonstration activity.

- To these standards:

  prerequisites to be clearly identified and valid for the activity.

INSTRUCTIONAL RESOURCES

Information Sheet PP.IS.02

Overhead Transparencies PP.OH.05, PP.OH.06, PP.OH.07 and PP.OH.08

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Define and discuss training prerequisite - use PP.IS.02 and PP.OH.05. Discuss each type of prerequisite listed.

2. Discuss and explain how prerequisites are arrived at - use PP.IS.02.

3. Discuss examples of each type of prerequisite - use PP.OH.06 - PP.OH.08 Skill, Information, Abilities.

TRAINEE ACTIVITY

1. Several trainees to give definition for prerequisite. Explain what training prerequisite means. Each explanation is criticised until an appropriate meaning is arrived at.

2. Trainees to state how they would arrive at prerequisites for training. Refer to PP.IS.02. They would list some prerequisites for various training activity described by trainer.

3. Trainees to review each type of prerequisite and study the items listed under each. They would state training activities to which each prerequisite could be applied.

EVALUATION ACTIVITY

1. Define training prerequisite.

2. Identify two training activities, then list the prerequisites for each activity.

TRAINING PREREQUISITES

Training prerequisites have been defined as those skills, knowledge and abilities which a trainee should bring with him when he comes for training.

Prerequisites must be seen within given situations, since what will be a prerequisite for one training activity will be training content for another training activity, e.g., the ability to take a measurement using a Micrometer will be a prerequisite for cutting a taper on a bar. Then, how to take a measurement using the Micrometer can also be the content of a particular training activity.

To identify prerequisites easily and accurately, the training content must first be identified. When this is identified, then all other skills, abilities or knowledge which would be needed for performance will be identified as prerequisites.

Prerequisites often include abilities such as:

- reading and writing in English to "the sixth grade".
- skills in making evaluation using the slide rule.
- knowledge of the agency's laboratory terminology, etc.
- the ability to recognise and distinguish colours.
- the ability to endure extreme temperatures etc.

TRAINING PREREQUISITES

TRAINING PREREQUISITES ARE ALL THE SKILLS, KNOWLEDGE AND ABILITIES WHICH A TRAINEE NEEDS PRIOR TO BEGINNING TRAINING

PP.OH.05

SKILL PREREQUISITES

- SKILL IN READING THE SLIDE RULE
- SKILL IN ADJUSTING THE ENGINE VALVES
- SKILL IN STRIKING THE ELECTRIC ARC

KNOWLEDGE PREREQUISITES

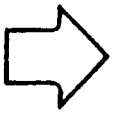
- KNOWLEDGE OF WATER BORNE DISEASES
- KNOWLEDGE OF PIPE THREAD TYPES AND STANDARD
- KNOWLEDGE OF WATER UTILITY BILLING SYSTEM

ABILITY PREREQUISITES

- THE ABILITY TO RECOGNIZE AND DISCRIMINATE CLOSE SHADES OF COLOUR
- THE ABILITY TO WITHSTAND TEMPERATURES OF 92°F (MIN)
- THE ABILITY TO WITHSTAND TEMPERATURES OF 20°F AND LOWER

WORKSHOP 2 Training of Trainers

UNIT 8 Presentation Preparation

LESSON 3  *ORGANIZING THE PRESENTATION*

ESTIMATED TIME 90 minutes

PREREQUISITES Units 1 - 8

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  identify and organize all materials and strategies for making a presentation.

- Under the following conditions:

  using format and guidelines presented in Workshops.

- To these standards:

  preparation to anticipate and provide for all requirements;

  format to match that of instructional plan suggested.

INSTRUCTIONAL RESOURCES

Information Sheets PP.IS.03 and PP.IS.04

Overhead Transparency PT.OH.20

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Review all units which have been studied up to this point.
2. Review the training implication of each of the lessons.
3. Introduce and discuss the required details or information for the instructional plan - use PT.OH.20 and PP.IS.03.

4. Discuss the guidelines procedure for making a presentation for the workshop - use PP.IS.04.

TRAINEE ACTIVITY

1. Several trainees will be asked to list the units and lessons covered.
2. Trainees to state individually how each of the lessons relates to getting ready to make presentations.
3. Several trainees will be assigned sections of the plan. They will explain what is required and state what guidelines are available for providing the details. Each presentation will be criticised by others to ensure adequacy and accuracy of details.
4. Trainees to review the checklist provided and seek clarification for each item which is not clear.

EVALUATION ACTIVITY

Trainees prepare a plan for making a presentation filling in the relevant details for each section of the plan.

ORGANIZING THE PRESENTATION

Up to this point, we have been discussing several of the preparational steps necessary for training and some of the fundamental understandings which will serve to guide one during the training activity.

Now in this lesson we are attempting to organize all the facts and information identified for making a presentation. All these pieces will be put together into the instructional plan which we have already dealt with.

CONTENT

The details on the operation breakdown sheet will constitute the instructional content for a skill presentation. For an information presentation, the details are listed on the information breakdown sheet. Since this detail is clearly identified on these breakdown sheets, it will be necessary only to refer to these sheets in the section on the instructional plan - INSTRUCTIONAL CONTENT.

INSTRUCTIONAL TOPIC

This is to be the title of the operation or the title given to the block of information. Whatever the title, either the "operation breakdown sheet" or the "information breakdown sheet" is to be filled in the space on the instructional plan - INSTRUCTIONAL TOPIC.

INSTRUCTIONAL OBJECTIVE

The objectives which have been written in Unit 2 identifying what the trainee is to be able to do: under the stated conditions and to the specified standards, are to be listed accordingly in the section

of the plan designated INSTRUCTIONAL OBJECTIVE. The objective must be for the instructional topic stated in the instructional plan. Ensure that the conditions and standards stated are those which are relevant and vital to the performance required.

PREREQUISITES

Do you remember the prerequisites which have been identified earlier? In the relevant section of the instructional plan, write in all the abilities which are necessary to carry out the performances in the presentation. Remember that this will be your criteria for selecting trainees for the presentation.

MATERIAL/SUPPLIES

As you plan the several training activities, both what you will do and what the trainees will do, you must determine all the materials, supplies and equipment which will be required. List the numbers or amounts of each item as this will help you to select the right amounts on the day of your presentation. Include also whatever aids are to be used to assist you in communicating your information to the trainees.

DURATION

The duration of your presentation will be specified by your trainer. When you plan your own training activity, estimate, as best as you can, how much time is required for the entire presentation, which should include the time needed to get through your activities and for the trainee to get through his/hers, in addition to the time for the evaluation of the performance.

TRAINEE ACTIVITY

In the instructional plan in the section designated trainee

activity is to be listed whatever you plan for the trainees to do in order to practice the new skill or the new information. Ensure that the activities described are comprehensive enough to give practice in all aspects of the skill or information presented.

EVALUATION ACTIVITY/PROCEDURE

At the end of the training, the trainer is to be able to state whether the objectives were achieved or not. To this end, the performances have to be evaluated. In this section of the instructional plan, the trainer lists activities to be used for the evaluation of the trainees ability. State what you will be or what you will require the trainees to do, so as to be able to evaluate their performance.

LOCATION

You are required to state to your trainer where you intend to have the presentation. You are to determine the several requirements that are necessary, then identify the best site for making the presentation. Check that the conditions of the site are good for training. When you are satisfied, list the exact location in the space provided in the instructional plan.

PERSONS TO BE TRAINED

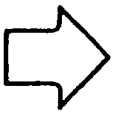
These are to be the trainees who will be receiving your presentation. You will be advised of the number to be used for your presentation. Ensure that these persons have the prerequisites. If they don't have them, then you must provide these before training begins or select other trainees. They must have the stated prerequisites. State in the plan what positions these persons are in or being trained for.

PROCEDURE FOR MAKING PRESENTATION

1. Be at the training site before the scheduled time for the presentation.
2. Set up all equipment and test them before hand.
3. Arrange the facilities (furniture etc.) to suit your need or style.
4. Sort out all materials to be used and arrange them in the order you want.
5. Set up some procedure for identifying trainees you may not know by name.
6. Have your instructional plan and any additional references close at hand.
7. Be ready for the class at the time specified.
8. Turn in a copy of your training plan to your moderator.
9. Conduct the presentation as planned.
10. Plan activities to be completed in time specified.
11. Rearrange or clean up training site.
12. Store away all materials, equipment and tools used.

WORKSHOP 2 Training of Trainers

UNIT 8 Presentation Preparations

LESSON 4  *CRITIQUE OF PRESENTATIONS*

ESTIMATED TIME 30 minutes

PREREQUISITES Units 1 through 8

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  critique a training presentation.

- Under the following conditions:

  using the specified check sheet.

- To these standards:

  following the established procedure, all items of the check sheet to be completed appropriately.

INSTRUCTIONAL RESOURCES

Check Sheet PP.WS.01

Overhead Transparency PP.OH.09

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Define and discuss the purpose of the critique of each presentation.
2. Introduce and discuss the value of the check sheet for guiding the critique.

3. Discuss the procedure for conducting the critique - critique session directed by a nominated moderator - use PP.OH.09.
4. Provide direction for the moderator.
5. Review items on the check sheet.
6. Discuss procedure for completing check sheet.

TRAINEE ACTIVITY

1. Several trainees to provide the definition for critique to highlight the difference between destructive criticizing and constructive criticizing.
2. Trainee to explain the difference between objective and subjective critique. Explain how the check sheet assists in making the critique more objective.
3. Trainee to give suggestions as to the procedure to follow in selecting moderator.
4. Trainee to record directions: role of moderator; time for the critique, etc.
5. Trainee to seek clarification of items which they do not understand.

EVALUATION ACTIVITY

1. Explain the reason for a critique after each presentation.
2. State how the persons making the critique benefit.
3. Explain the difference between a critique of a performance as against the critique of a person.

CHECK SHEET - DISCUSSION OF PRESENTATION

	YES	NO	COMMENTS
A. INSTRUCTORS PREPARATION			
- Did he/she appear to have everything planned?	☐	☐	
- Did he/she know what he/she was doing?	☐	☐	
- Was everything needed provided?	☐	☐	
- Was the training "setting" properly arranged?	☐	☐	
- Was there an instructional plan?	☐	☐	
- Was the instructional plan used?	☐	☐	
B. INSTRUCTORS PRESENTATION			
- Were the objectives clearly stated?	☐	☐	
- Were the trainees motivated for receiving the skill/information?	☐	☐	
- Did he/she present one step or one point "at-a-time"?	☐	☐	
- Was the sequence built up progressively?	☐	☐	
- Did he/she demonstrate enthusiasm?			
- Did he/she involve the trainees?	☐	☐	
C. INSTRUCTORS PERSONALITY			
- Was his/her personality "easy and friendly"?	☐	☐	
- Did he/she demonstrate confidence?	☐	☐	

	YES	NO	COMMENTS
C. INSTRUCTORS PERSONALITY CONT'D			
- Did he/she demonstrate patience and understanding?	☐	☐	
- Did the trainees respond easily to him/her?	☐	☐	
- Did he/she handle problems/situations effectively?	☐	☐	
D. TRAINING AIDS			
- Were aids used?	☐	☐	
- Were they adequate?	☐	☐	
- Were they appropriate?	☐	☐	
- Were they well prepared?	☐	☐	
- Were they conveying information?	☐	☐	
- Did he/she use them effectively?	☐	☐	
- Did the aids help clarify points?	☐	☐	
E. QUESTIONS			
- Were questions used throughout?	☐	☐	
- Were questions well "thought out"?	☐	☐	
- Were questions delivered effectively?	☐	☐	
- Were they clear and easily understood?	☐	☐	
- Did they require thought?	☐	☐	
- Were they well distributed throughout the class?	☐	☐	
- Did he/she ask, pause, then select response?	☐	☐	
- Did he/she respond to response response effectively?	☐	☐	

	YES	NO	COMMENTS
F. TRAINEE ACTIVITY			
- Were the trainees required to carry out an assignment?	☐	☐	
- Was the assignment appropriate?	☐	☐	
- Did he/she supervise the activity?	☐	☐	
- Did he/she correct errors, clarify etc?	☐	☐	
- Did he/she allow sufficient time for the assignment?	☐	☐	
G. EVALUATION			
- Did he/she evaluate the trainees' performance?	☐	☐	
- Did he/she have a clear criteria for evaluation?	☐	☐	
- Did he/she use the criteria?	☐	☐	
- Was the criteria objective?	☐	☐	
- Were the results of the evaluation indicative of the performance?	☐	☐	

PROCEDURE FOR CRITIQUE

1. OBSERVE PRESENTATION CAREFULLY

2. MAKE NOTES ON THE PRESENTATION IN CONJUNCTION WITH THE CHECK SHEET

3. RECORD EXACT REFERENCES WHICH YOU MAY WANT TO REFER TO

4. DO NOT WRITE ON THE CHECK SHEET

5. MAKE YOUR OBSERVATIONS AT THE APPROPRIATE TIME

6. CRITICIZE THE PRESENTATION NOT THE TRAINER

WORKSHOP 2 Training of Trainers

UNIT 9 *PERFORMANCE EVALUATION*

WHAT IS THIS UNIT ALL ABOUT

This unit highlights some fundamentals of instructional evaluation and discusses their application in the overall instructional activity and finally provides some guidelines and assistance for the development of evaluation activities.

WHY DOES THE TRAINEE NEED THIS

To enable him to be able to evaluate the performances of the persons he trains.

WHAT DOES THE TRAINEE NEED TO KNOW BEFORE BEGINNING

Units 1 through 3 and 5 through 8.

WHAT EQUIPMENT AND SUPPLIES ARE NEEDED

ITEM	LESSON/OBJECTIVES	
	1	2
	1	1
Overhead Projector	X	X
Transparencies	X	X
Information Sheets	X	X
Assignment Sheets		X
Work Sheets		X
Chalkboard	X	X

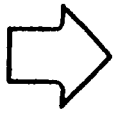
NUMBER OF LESSONS AND TOTAL INSTRUCTIONAL TIME

Total Lessons: 2

Total Time: 90 minutes

WORKSHOP 2 Training of Trainers

UNIT 9 Performance Evaluation

LESSON 1  *INTRODUCTION TO PERFORMANCE EVALUATION*

ESTIMATED TIME 30 minutes

PREREQUISITES Units 1 to 8

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  explain the use of evaluation in instruction; and

  classify evaluation exercises appropriately.

- Under the following conditions:

  by recall.

- To these standards:

  80% accuracy of the information in the class notes.

INSTRUCTIONAL RESOURCES

Information Sheet PE.IS.01

Overhead Transparency PE.OH.01

Resource Material PE.RM.01

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Review the details of the schematic diagram - Systematic Approach to Training - highlight the evaluation activities.

2. Discuss the meaning of evaluation and the several evaluation practices.

3. Discuss classification of evaluation according to their purposes - use PE.OH.01.

4. Discuss the value of evaluation in training.

TRAINEE ACTIVITY

1. Trainees to review Systematic Approach to Training schematic and explain the two testing activities.

2. Trainees to explain their understanding of evaluation, then recall the several tests which they are aware of.

3. Trainees to explain their understanding of each classification and to explain the purpose of each classified type.

4. Trainees to explain the value of evaluation to the entire training event and to explain the causes and results of faulty evaluation.

EVALUATION ACTIVITY

1. Define evaluation in your own words.

2. List the three classifications of evaluation as discussed in the lesson.

3. Explain the value of pre-test in training.

4. List the function of each of the three types of evaluation.

EVALUATING PERFORMANCE

In each of the lessons which is presented, the final activity is evaluation; its purpose is to assure the learner as well as the trainer that mastery of the present lesson has been accomplished and that the learner is ready to proceed to the next unit of learning. Evaluation, in its broadest sense, is much more than measuring the mastery of the material in a single lesson. It is used to provide information relating to the level at which trainees are entering training (pre-test). (You will recall the position of the pre-test in the Systematic Approach to Training). Then during the training, information regarding the progress of the trainees is necessary and, as a feedback instrument, evaluation proves very valuable. Finally, at the end of the training period, evaluation is again employed to determine whether the trainees have achieved sufficiently so that they can be taken out of training or need to be retained for a longer period.

PRE-TEST

An evaluation is made to determine what skills the trainee already has so as to begin him at the appropriate level. When a trainee begins training too low below his level, he becomes uninterested and may eventually discontinue. On the other hand, if he begins too much above his level, he can become discouraged, frustrated and lose interest. In order that the learning activities prove beneficial and efficient, the trainer should, as quickly as possible, determine the level at which training should begin, by making an evaluation of the trainee's present abilities.

FEEDBACK

During the training activity, the trainer needs to be informed as to how successful he has been in accomplishing the objectives. Every test is as much a measure of the trainer's skill as of the learner's accomplishment. The content or procedures may be modified to bring out more efficiency. Constant checks on the result of the training will allow any changes to be made before it is too late.

POST-TEST

A good test sets up standards of achievement towards which the trainee can work. When these standards have been met, the trainees should be taken out of training. Until these are met, the trainees should continue in training. These decisions cannot be taken on any valid basis in the absence of valid evaluations. Evaluation therefore is a continuous activity from the inception of training until the training ends.

CLASSIFICATION OF EVALUATION

- PRE-TEST
- FEEDBACK
  (DURING INSTRUCTION)
- POST-TEST

METHODS FOR TESTING SKILLS

TESTS AS MEASURES OF TEACHING SUCCESS

Tests can be used to inform the teacher as to how successful he has been in the first three steps of the lesson. Every test is as much a measure of the teacher's skill as of the learner's accomplishment. Instruction can only be improved if the points at which it has failed are clearly recognized by the teacher. The teaching procedure can then be revised so that when the lesson is again presented the weak points will be strengthened and learning made easier.

If a test shows that a considerable number of learners are weak in one or more elements of a particular lesson, it is clear that the teacher needs to examine carefully the methods he has used to present these elements and the methods used to provide practice in their use. Undoubtedly, some revision is called for or some other method needed to supplement those previously used.

THE TEST AS A TEACHING DEVICE

Tests can be used as means of assisting the learner to improve his skill and understanding. Tests should always be prepared and administered with this in mind. The chief value of a test for this purpose lies in the possibility of having the learner discover, as a result of his performance in the test, the points at which he is not yet proficient or at which his understanding is not complete.

If the work which the learner has done in a test is not discussed with him after the test has been scored, this teaching value of the test

is lost. If he is advised only of the score which he has made and has no opportunity to know about the particular mistakes which occurred in his work, he cannot profit from the test as a means of improving his work. It is important, therefore, to go over the results of every test with the group or with the learners individually.

CHARACTERISTICS OF A GOOD TEST

In order to be really useful, and to serve the purposes for which they are intended, tests used in connection with instruction must meet certain important standards. A few tests must be applied to the tests themselves. Tests should be constructed to meet these criteria, or be revised when they fail to do so.

DOES THE TEST MEASURE WHAT THE TEACHER INTENDS TO MEASURE?

First, the person using the test should be sure that the test will measure exactly what the user wishes to measure and believes he is measuring. In order to follow the directions and carry out the work involved in a test, the learner is required to interpret language describing what he is expected to do. If he has difficulty with the language, he may make a poor showing on the test. If two pupils take this same test and one has no difficulty with the language while the other has, the pupil with the language difficulty will appear to be less capable than the first pupil in performing the work called for by the test. Yet, if directions were given which could be readily understood by both, the second pupil might perform as well as or better than the first. In this case, it is ability to interpret language which is being tested, not the ability to perform the actual work of the test.

If the interpretation of the language is an essential element in the occupation and the instructor wishes to test the pupil in this aspect of the work, the suitable tests should be devised for the purpose. In using them, however, the instructor should know that he is testing the language ability and not attempt to measure proficiency in job skills on the basis of results.

Teachers of industrial subjects sometimes choose or construct tests which test other things than those they are seeking to measure. Some of the common errors of this kind are:

1. Tests which are designed to test quality or workmanship may actually measure working speed.
2. Tests which are intended to measure wuality or speed may really measure ability to analyze and plan the work.
3. Tests which are believed to measure understanding may only measure ability to memorize and recall.
4. Tests which are given to measure skill and efficiency in manipulation of machines and tools may instead measure the quality of the finished product.
5. Tests which are supposed to measure proficiency in hand of machine skills may really measure ability to read technical symbols.

Tests which measure the wrong things are not hard to find. A test on a certain tool process may measure instead the ability to read blueprints. As a result, the inability of the student to read the drawing correctly may cause him to fail the test even though he can perform skillfully all of the operations involved. The instructor may

teach again processes which have been adequately mastered by the student and fail to correct the deficiencies in the ability to read drawings.

WILL THE TEST MEASURE WITH CONSISTENT ACCURACY?

It is also important that a test give approximately the same results when used with similar learners or groups of learners who have received the same instruction. If a test varies considerably in the results it shows among a number of learners, when actually such differences do not exist, it is clear that the test cannot be relied upon for decisions as to how well the learner has succeeded or how teaching methods should be revised.

A common cause for the failure of a test to measure consistently is that too few items are included in the test to give a true sampling of the learner's skill or knowledge. Tests which cover only a limited number of the items taught in a lesson or in a course, will show a high level of accomplishment on the part of those who are relatively strong in the items selected. Those who are proficient in other items, which may be just as important, will be at a disadvantage. A test with a wider range of responses would afford a better measure of the achievement of all.

CAN THE TEST BE SCORED OBJECTIVELY?

A further and very important criterion of a good test is that it be so constructed and administered that the results cannot be influenced by the opinion, attitude, or bias of the examiner. If the test results are subject to the personal feeling of the examiner with respect to the pupil and his work, the pupil's accomplishment is measured by the examiner and not by the test.

An ideal test is one which would yield the same grade or rating

in the case of a given pupil if rated by any one of several competent examiners. It is seldom, of course, that a test can be constructed which will in no way depend upon the exercise of some judgment by the examiner when it is scored. Yet, so far as possible, this element of personal opinion should not be permitted to enter into the test results.

Too frequently, if testing is left largely to the on-the-spot judgment of the teacher, standards of workmanship which are accepted from one pupil will be rejected in the case of another. Work which received approval on one day, when the teacher is too busy for a critical inspection or is in a generous mood, will fail to meet with approval on another day. Such methods for testing work are obviously unfair to some and result in confusion, if not resentment, on the part of these pupils.

Unless objective standards are provided through objective tests, the attitudes or personal characteristics of the learners, rather than their actual work performance, will tend to determine their progress in the course.

CAN THE TEST BE GIVEN AND SCORED EASILY?

From the teacher's point of view there are two additional factors which need to be considered in judging the value of a test. These are the ease with which the test can be given and the ease with which it can be checked or scored.

A test may be well designed, as judged by all of the characteristics just mentioned, and yet be so cumbersome and difficult to give that it is not practical in an actual teaching situation. If the scoring of the test is too complicated and time consuming, it becomes a burden to the teacher and will probably be abandoned under the pressure of the teacher's daily

work. The whole testing procedure may fall into disuse as a result. It is possible to devise tests which meet all the criteria suggested above, which can be given upon short notice to one or to several pupils, and which consume a minimum amount of time on the part of the pupil and teacher, either in completing the test or checking the results.

TESTING SKILLS

Essentially, there is only one type of test which will give a true measure of the skill possessed by a learner and his ability to apply the skill that he has learned. This is the performance test.

The performance test, as the name implies, requires the learner to perform the skilled operations which have been taught, and to perform them under conditions which are equivalent to or which approximate the working conditions of the trade. Such tests also measure the learner's ability to apply knowledge or information, although there are other methods by which this can be tested.

ELEMENTS OF SKILL WHICH CAN BE MEASURED

Although the performance test is the single type which is useful for testing skills, there are several aspects of performance which can be tested. A test may be planned which will test one, two or several of the elements of skill, depending upon the purpose of the test. Some of these elements are:

1. Quality of completed test job. This is measured in terms of accuracy, finish, appearance, or absence of visible mistakes in the case of processed articles. It may also measure how effectively the necessary equipment is used.

2. Skill in the use of tools and equipment as displayed by the learner. This is indicated by the relative ease in handling, efficiency, correct use of tools, proper care of tools and equipment, and proper regard for safe practices which is shown by the learner as he works.
3. Ability to analyze the job and plan the procedure for starting the work and carrying it through to completion.
4. Speed, or rate at which the work is accomplished.
5. Ability to form working judgments through the application of information.
6. Ability to read diagrams, drawings, technical symbols, or use handbooks or service manuals.

All of these elements are important in some jobs; some of them in most jobs.

ADVANTAGES OF THE PERFORMANCE TEST

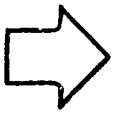
The performance test has the advantage of establishing clearly the learner's ability to use the skills which he believes or claims he is able to use. It prevents the learner who is inclined to "get by" through pretence or partial learning from making his way through the course on this base. At the same time, it is an excellent diagnostic test since, if properly given, it will reveal to pupil and teacher the particular places where the pupil is weak. The scoring of a good performance test can be so accurately done that the learner will know that his efforts have been fairly and impartially measured.

Some teachers avoid use of the performance test because they believe it to be difficult to plan and to give. It is true that, like any good test, a performance test cannot be developed on the spur of the moment. Yet, when such a test has been devised, it can be used over and over again with different pupils and classes. It is not the kind of a test which must be kept secret in its details in order to be useful. There is no harm in having pupils know exactly what work they will be called upon to perform and what standards they will have to meet. In fact, as already noted, this is a very desirable step in the learning process.

Some types of tests (general intelligence tests, for example,) do not measure accurately if the pupil has previous knowledge of the test items and the opportunity to practice or inform himself on these items. Success in the performance test, on the other hand, is achieved through previous practice and knowledge of what performance will be required only stimulates effective practice.

WORKSHOP 2 Training of Trainers

Unit 9 Performance Evaluation

LESSON 2  *PREPARING EVALUATION DEVICES*

ESTIMATED TIME 60 minutes

PREREQUISITES Units 1 through 8 and Lesson 1 of this Unit

INSTRUCTIONAL/PERFORMANCE OBJECTIVE

- The trainee will be able to:

  develop suitable evaluation devices for specified instructional presentation.

- Under the following conditions:

  skills of knowledge of operations identified in Task Analysis.

- To these standards:

  to the standard for good test as stated in the class notes.

INSTRUCTIONAL RESOURCES

Information Sheets PE.IS.02, PE.IS.03 and PE.IS.04

Assignment Sheet PE.AS.01

Work Sheet PE.WS.01

Overhead Transparency PE.OH.02

Resource Material PE.RM.02

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Review and discuss the purpose of evaluation.

2. Discuss the characteristics of a good evaluation device - use PE.IS.02 and PE.OH.02.
3. Discuss what is evaluated when a performance in conducted.
4. Discuss what is involved in an evaluation 'device' - use PE.IS.03.
5. Discuss the methodology for evaluating performances - use PE.IS.03 and PE.IS.04.

TRAINEE ACTIVITY

1. Trainees to recall the reasons for carrying out evaluation of performances.
2. Trainees to explain in their own words each of the definitions given for each characteristic. They will illustrate with local situations the implications of each.
3. Trainees to explain what abilities are evaluated as performance. They should be encouraged to bring out several skil's, and should be referred to the objectives written, so that they identity specific performances.
4. Trainees to explain what is an evaluation activity and to give examples of activities which can be used to evaluate specitied performance.
5. Trainees to explain how a performance is evaluated. They will state the several abilities which can be evaluated. Further, they are to explain each item on PE.IS.04.

EVALUATION ACTIVITY

1. Explain, with suitable examples, each of the five characteristics of a good evaluation device.

2. Explain the difference between an evaluation activity and an evaluation methodology.

CHARACTERISTICS OF GOOD EVALUATION DEVICE

VALIDITY

A device which is valid will evaluate what it was intended to evaluate. Often many of these devices evaluate other abilities than they were designed for. Many traditional evaluation tests actually measured irrelevant abilities. Will the device you intend to use evaluate the ability you want to assess? If it does then it is a valid device.

OBJECTIVITY

Objectivity of a device refers to two separate activities:

a) Interpretation: Too often some of the devices are of such that they leave individuals free to apply their own interpretations. These varying interpretations will defeat the intention of the evaluation since one can and will get different but often correct results. The device should be interpreted the same way by all.

b) Scoring: Many evaluation devices do not allow for objective scoring i.e., scoring which is free from the influence of personal characteristics viz., "I do not like how this sounds" or "I do not think this is what I wanted". Objective scoring will enable the items to be evaluated consistently, irrespective of who does it or what his likes or dislikes are. Objective

devices are scored from a pre-planned key and will give the same results even if different persons did the scoring.

RELIABILITY

Can you rely on the result of the evaluation? Will the device yield the same results under the same conditions every time it is used? If it does, it is reliable enough to be used. If it does not, it is unsuitable since the results are not guaranteed to be relied on.

COMPREHENSIVENESS

Often devices used will only evaluate a certain amount of the skills or knowledge contained in the operation. If all the skills or knowledge are to be evaluated, then the device should be able to assess all skills included. A comprehensive device will do this since it is to cover all aspects that are relevant.

DISCRIMINATION

Will this device tell you those who <u>can</u> from those who <u>can't</u>? The entire device is designed for this purpose. The device, then, must be capable of separating those who are <u>able</u> from those who are <u>unable</u>.

DEVELOPMENT OF AN EVALUATION INSTRUMENT

The development of an evaluation instrument is two-fold. Firstly, the activity which is to be used as the basis for evaluating the trainee's performance has to be developed. Secondly, the method of evaluating the activity has to be developed or designed. As these two activities are contemplated, one must be mindful of the five characteristics of a good evaluation device discussed in PE.IS.02. Let us consider each of these activities separately.

DESIGN OF EVALUATION ACTIVITY

Where skills are to be evaluated, then a performance embodying such skills has to be designed. It is important that the performance has no less, or no more, than the skills to be evaluated. Sometimes this is not practicable but the best is to be done to ensure that only a minimum of irrelevant activities are included.

For evaluation information, other problems which are based on such information are designed. These problems should be so designed as to ensure that nothing, apart from lack of the necessary information being evaluated, could hamper the solution. Do not put into the problem more than you really want to evaluate.

DESIGN OF EVALUATION METHODS

Once the trainees have made their performances, the next step is to have some objective means of determining how well the performance had been. The only valid method of evaluating a performance, whether it is based on skill or information, is to have a pre-prepared key.

For problems or questions, the acceptable solution or answers should be decided and the credits or discredits to be awarded, also decided.

Because there are so many aspects of a skill performance which can be evaluated, it is the practice to have a marking schedule which states what is to be evaluated and how to credit or discredit the trainee. Whatever practice is employed be sure that you are in a position to determine very well those who can as against those who cannot.

PERFORMANCE EVALUATION SCHEDULE
(SKILL EVALUATION)

OPERATION: *CUT & THREAD PIPE END*

Cut an 18" length of ½" galvanize pipe and cut 14 threads BSPT

WORKMANSHIP	24	ACCURACY	40	QUALITY	40	KNOWLEDGE/ RELATED	20	SPEED	20
Safety practice Correct procedure Correct use of tools etc Consistent performance Cheerful at work Orderly work station		Correct measurement Correct length of thread Correct depth of thread		Squareness of end. Smoothness of threads Free from chips		How to clamp pipe in vise. How to adjust die How to use tape How to apply coolant		Was job completed in given time? 5 minutes extra 10 minutes extra 15 minutes extra 20 minutes extra	
SCORE		SCORE		SCORE		SCORE		Deduct 4 points for each 5 mins. beyond specified time. SCORE	

PERFORMANCE EVALUATION

INTRODUCTION

At various points in the training event, the trainer needs information about the abilities of his trainees. This information he must acquire through a valid evaluation system. The quality of the information derived is equal and proportional to the quality of the evaluation which is used.

REFERENCES

1. Information Sheets PE.IS.01, PE.IS.02, PE.IS.03 and PE.IS.04.
2. Your job position.
3. Operations identified for your presentation in the instructional plan.

PROCEDURE

1. Study the information contained in each of the Information Sheets 01, 02 and 03.
2. Study the example PE.IS.04 observing the evaluation activity and the method of evaluating the performance.
3. Review the objectives in your instructional plan.
4. Design an activity which can evaluate the objective.
5. Prepare the method to be used to evaluate the performance.

PERFORMANCE EVALUATION SCHEDULE
(SKILL EVALUATION)

WORKMANSHIP	ACCURACY	QUALITY	RELATED-KNOWLEDGE	TIME

ASSESSMENT	ASSESSMENT	ASSESSMENT	ASSESSMENT	ASSESSMENT

CHARACTERISTICS OF VALID EVALUATIONS

1. VALIDITY

2. RELIABILITY

3. OBJECTIVITY

4. DISCRIMINATION

5. COMPREHENSIVENESS

SUMMARY OF TRAINING EVALUATION PROCEDURES

Evaluation in this systematic criterion referenced approach to training, which is the basis of these guidelines, is a tool used for improving training and not for grading trainees. For this reason, it is important that the pre-evaluation (or pre-assessment), criterion check, and post-evaluation be conducted properly and the results used properly. Briefly, these three evaluation processes are:

1. Pre-Evaluation (or pre-assessment) is used to determine what the trainee knows and what his interests are when he first comes to training. It should determine whether or not the trainee can do the activity or skill he is to be trained in, and whether he has the prerequisites for learning it.
2. Criterion Checks are used to determine learning progress, including whether more appropriate practice should be provided, whether some trainees should be given special tutoring, and whether some trainees should be given additional activities to do. The criterion check is the trainer's assessment tool for making decisions during the teaching-learning activities.
3. Post-Evaluation is used to determine how successful training was. It is simply a measure of how many trainees can do each activity correctly at the end of training. In successful training programs, most of the trainees will demonstrate the ability to

perform each activity. But, we can only say that training was successful if we can show that the trainees could not do the activity before training.

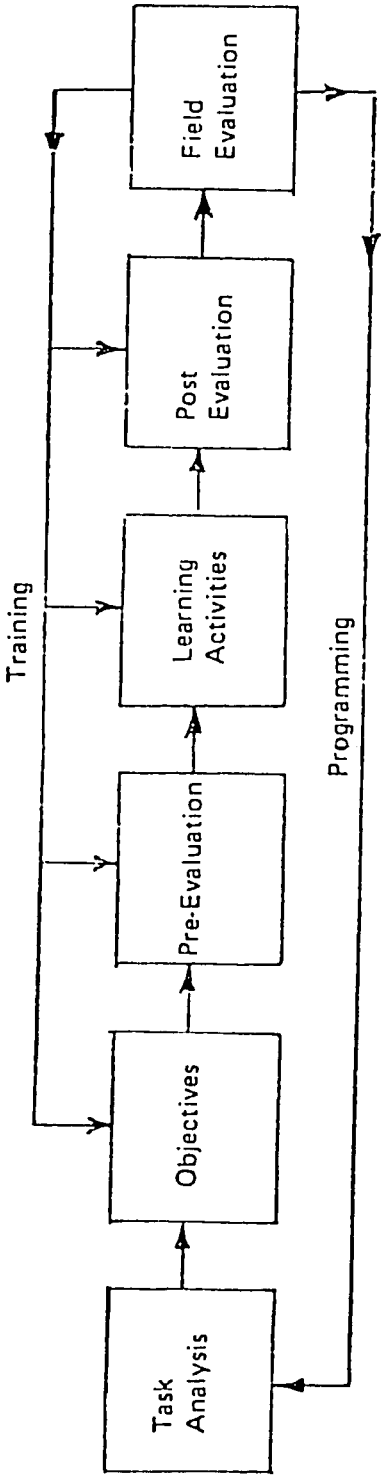
A diagrammatical representation of this process is given on the following page.

Evaluation is useful only if it results in modifications in the instructional process. If a trainer evaluates his course, but does not use the results of the evaluations to modify the training, what good was his evaluation? It is like a man who owns an automobile. Each day he measures the oil level, notes that it is below the empty mark, but he does nothing to change the situation. Soon his automobile will be in disrepair. A training program is just like the automobile, if a trainer evaluates it, but does not use the results of the evaluations to make his decisions his program will suffer.

Proper evaluation will tell the instructor whether or not the instruction was successful. If it was not successful, it was for one or more of these reasons:

1. The trainees were improperly prepared for the class - either they did not have the proper prerequisites or the objective was unrealistic.
2. The instruction was inadequately planned for the course.
3. The instruction was inadequately conducted.

FIELD EVALUATION



HOME STUDY ASSIGNMENT

During Workshops 1 and 2 you have learnt how to prepare for and make presentations. The techniques discussed and tried out will only be perfected and become easier after some practice. You are encouraged to make regular application of these newly acquired skills during your day-to-day activities on the job.

Your objectives for the home study period are listed below.

PERFORMANCE

Each trainee will:

1. Complete Task Analysis TA.WS.02 for two additional tasks taken from positions which are supervised.
2. Complete Operation Breakdown Sheet TA.WS.03 for the tasks listed in 1 above.
3. Develop three Full Size Graphics to be used as Training or Job Aids for operations detailed in 2 above. (Use suggestions from IM.IS.03A).
4. Develop an Instructional Plan for making your second presentation, selecting an operation from what was outlined for 2 above. (Utilize all the relevant information for giving an effective presentation).

CONDITIONS

Using all handout materials, notes, references, fellow participants and your Training Coordinator.

CRITERION

Each of the 4 performances shown above must be carried out in

accordance with the standards in the class notes.

During the third Workshop, you will be making presentations under more difficult conditions, so ensure that you have a good grasp on Workshops' 1 and 2 objectives.

CARIBBEAN BASIN WATER MANAGEMENT PROJECT

TRAINING OF TRAINERS - WORKSHOP 2

CRITIQUE FORM

Please criticize the workshop as it appeared to you in relation to the nine items indicated below. Please fill in all items so the instructors will have a complete overview of your impressions.

1. Name the units you regard as MOST valuable (appraise the subject area - not the speaker or method of presentation)

NUMBER	TITLE

2. Name the units you regard as LEAST valuable

NUMBER	TITLE

3. Suggest any topics, not presently included, which you would wish to have included in future workshops.

4. Suggest any topics in the present course for which you think more time should be allowed for a fuller treatment. (Here include units noted at (1) above, if appropriate).

5. Does the general arrangement and development of subject matter appear logical? YES/NO. If NO, suggest improvements.

_____

_____

6. Generally speaking, did you feel you had enough opportunity for discussion? YES/NO. If NO, should this be by:

(a) reducing the lecture element of sessions? YES NO

(b) by issuing notes for prior reading? or YES NO

7. Were the activities of the workshop meaningful and relevant? YES/NO. If NO, suggest improvements.

_____

_____

8. Did the activities allow you sufficient participation (during and out of sessions)? YES/NO. If NO, suggest improvements.

_____

_____

_____

_____

9. Any further comments/recommendations.

_____

_____

_____

_____

_____

_____

_____

CARIBBEAN BASIN WATER MANAGEMENT PROJECT

TRAINING OF TRAINERS - WORKSHOP 2

HOME STUDY ASSIGNMENT

During Workshops 1 and 2 you have learnt how to prepare for and make presentations. The techniques discussed and tried out will only be perfected and become easier after some practice. You are encouraged to make regular application of these newly acquired skills during your day-to-day activities on the job.

Your objectives for the home study period are listed below.

PERFORMANCE OBJECTIVES: Each trainee will:

1. Complete Task Analysis TA.WS.02 for two additional tasks taken from positions which are supervised.

2. Complete Operation Breakdown Sheet TA.WS.03 for the tasks listed in 1 above.

3. Develop three full size Graphics to be used as Training or Job Aids for operations detailed in 2 above. (Use suggestions from IM.IS.03a).

4. Develop and Instructional Plan for making your second presentation, selecting an operation from what was outlined for 2 above. (Utilize all the relevant information for giving an effective presentation).

CONDITIONS: Using all handout materials, notes, references, fellow participants and your Training Coordinator.

STANDARD: Each of the 4 performances shown above must be carried out in accordance with the standards in the class notes.

During the third Workshop, you will be making presentations under more difficult conditions, so ensure that you have a good grasp on Workshops 1 and 2 objectives.

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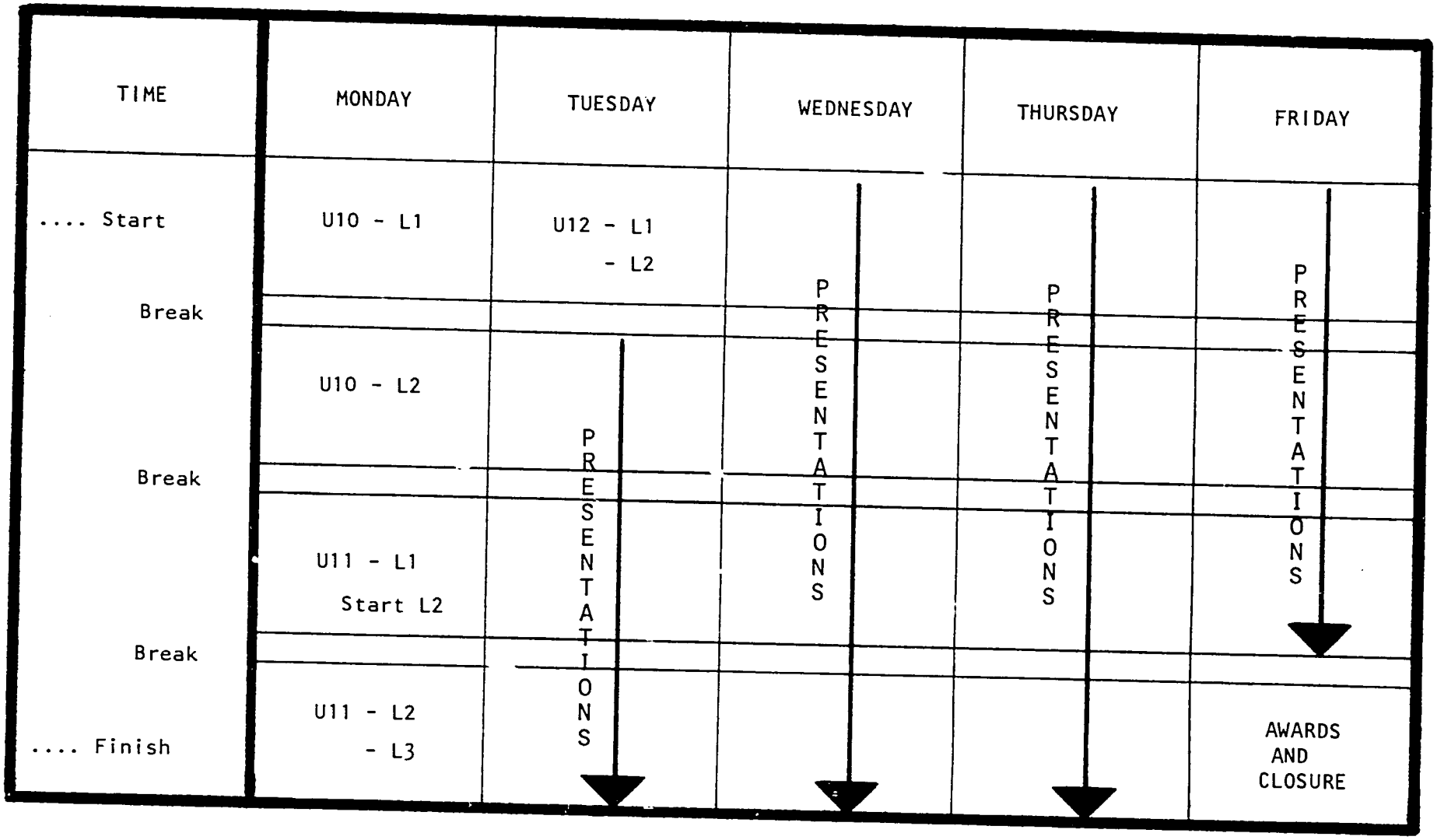
OUTLINE

UNIT (U)		LESSON (L)	
NO.	TITLE	NO.	TITLE
10.	Review of Preparations for Presentation	1.	Review of Task Analysis
		2.	Review of Preparations of Instructional Plan.
11.	Training Problems	1.	Training Facilities.
		2.	Training Participants.
		3.	Government, Management and Labour Cooperation.
12.	Training Delivery System (TDS)	1.	The TDS Concept.
		2.	EC Water Utility TDS.
TRAINEE PRESENTATIONS			

NOTES:

1. *Each presentation to be of 45 minutes duration.*
2. *Each presentation to be given to a group of at least 6 persons.*
3. *Each presentation critique to be of 10 minutes duration.*
4. *Each presentation to define Instructor's Activity, Trainee Activity and Evaluation of Trainee's Performance.*

TIMETABLE


TIME
MONDAY
TUESDAY
WEDNESDAY
THURSDAY
FRIDAY
.... Start
U10 - L1
U12 - L1
- L2
Break
U10 - L2
Break
U11 - L1
Start L2
Break
U11 - L2
- L3
.... Finish
PRESENTATIONS
PRESENTATIONS
PRESENTATIONS
PRESENTATIONS
AWARDS
AND
CLOSURE

UNIT 10 *REVIEW OF PREPARATIONS FOR PRESENTATION*

WHAT IS THIS UNIT ALL ABOUT

Generally, this unit clarifies areas of weaknesses or short-comings in the analysis exercises and the preparation of the instructional plans. Suggestions for improvement are given and additional guidelines for making related information presentations are provided.

WHY DOES THE TRAINEE NEED THIS

Because of inexperience, several short-comings or weaknesses may not be spotted by the new trainer. If these are carried into the training, problems will result which he may not be equipped to deal with on the spot. It is necessary therefore, to review his preparations with him so that he may be able to effect the necessary improvements in good time. He will also need some additional guidelines to deal with special problems in handling presentations of related information.

WHAT DOES THE TRAINEE NEED TO KNOW BEFORE BEGINNING

He must have completed the requirements for Workshop 2 and the Assignments of the second Home Study Activity.

WHAT EQUIPMENT AND SUPPLIES ARE NEEDED

ITEM	LESSON/OBJECTIVE	
	1	2
Overhead Projector		X
Transparencies		X
Information Sheets	X	X
Chalkboard	X	X
Work Sheets	X	X

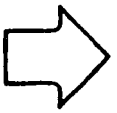
NUMBER OF LESSONS AND TOTAL INSTRUCTIONAL TIME

Total Lessons: 2

Total Time: 90 minutes

WORKSHOP 3 Training of Trainers

UNIT 10 Review of Preparations for Presentation

LESSON 1  *REVIEW OF TASK ANALYSIS*

ESTIMATED TIME 45 minutes

PREREQUISITES Workshops 1 and 2 and completion of objectives 1 and 2 of Home Study Assignment of Workshop 2

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  identify and clarify areas of general weaknesses contained in Performances.

- Under the following conditions:

  using selected examples of the trainees' efforts in the Home Study Activities.

- To these standards:

  to the standards contained in the class notes.

INSTRUCTIONAL RESOURCES

Any relevant material used in Workshops 1 and 2

Selected examples from trainees' performance in Home Study Assignment

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Review objectives of Home Study Assignment (Workshop 2).

2. Select and list on chalkboard items for clarification or correction.

3. Refer to relevant guidelines in notes which were not met.

4. Solicit clarification orally from individual trainees.

5. Assign corrections, to individuals, of areas of weaknesses.

TRAINEE ACTIVITY

1. Trainee to read the Assignments of the Home Study.

2. Trainee to study the items listed in preparation for discussion.

3. Trainee to recall the guidelines in the notes which apply to the clarifications.

4. Individual trainee to explain weaknesses in the examples and make corrections or clarifications.

5. Trainee to make written corrections to items in individual exercises as suggested by instructor.

EVALUATION ACTIVITY

1. Assess the performances of the Trainee Activity.

2. Assess the final corrections and clarifications submitted in keeping with the stated criterion.

WORKSHOP 3 Training of Trainers

UNIT 10 Review of Preparations for Presentation

LESSON 2  *REVIEW OF PREPARATIONS OF INSTRUCTIONAL PLAN*

ESTIMATED TIME 45 minutes

PREREQUISITES Completion of objective 4 of Workshop 2 Home Study Assignment and Workshop 2 presentations

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  identify and clarify weaknesses contained in performance submitted; and

  identify special considerations for making presentations of related information.

- Under the following conditions:

  using performances of Home Study Assignments and guidelines in the class notes.

- To these standards:

  in keeping with the standards as set out in the class note.

INSTRUCTIONAL RESOURCES

Information Sheets R2.IS.01 and R2.IS.02

Work Sheets TA.WS.03 and TA.WS.03A

Overhead Transparency R2.OH.01

Selected examples of the Home Study Assignment

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Identify and list on chalkboard items of weaknesses.
2. Discuss the results of having training guidelines with weaknesses as identified:
   - fumblings - poor timing
   - inappropriate assignemnts - inappropriate evaluation
3. Review the three aspects of job training - skills, information, attitude.
4. Describe the value of related information in the performance on the job.
   - supplies the knowledge to solve job problems.
5. Discuss areas of sp cial consideration for presenting information - use OH.01.
6. Discuss breakdown of information for presentation - use IS.01.

TRAINEE ACTIVITY

1. Trainee to make corrections or modifications to items listed. (To be done orally).
2. Trainee to explain or recall some effects on training of not doing proper preparations. (Refer to first presentations of Workshop 2).
3. Trainee to list the three areas in which job training is provided.
4. Trainee to explain how job information assists in job performance.

5. Trainee to explain his/her understanding of each item under consideration listed on OH.01.
6. Trainee to pick an instructional topic and list the instructional sequence.

EVALUATION ACTIVITY

1. Trainee to submit two instructional breakdown sheets of selected instructional topics.
2. Trainee to effect corrections of assignments as suggested.
3. The above activities along with all activities under trainee activities will be assessed in keeping with the stated criterion.

SPECIAL CONSIDERATIONS FOR PRESENTING JOB (TECHNICAL) INFORMATION

Job information, unlike job skills, is predominanatly mental in nature and is often also abstract in concept. It makes a great demand on the ability to see relationships, to solve problems, make associations and to a certain extent, to recall things from memory.

This aspect of training has proven to be the more difficult to accomplish and is evident in the number of highly skilled workers who lack this technical or job information. Because this information is vital for the overall performance, efforts must be made to successfully accomplish this area of training. The following tips or hints may serve as guidelines for conducting this aspect of job training.

1. "Concretize" the experience.
   - Make every effort in every way possible to make concrete all abstract concepts, i.e., use AIDS. These may vary from graphics to actual experience.
2. Make associations of new information with familiar experience or information.
   - New experiences are better grasped or acquired if related to some information already acquired.
3. Put the new information to work in realistic situations.
   - As soon as the information is presented, relate it to real situations and allow the trainee to use this new information in dealing with the situations.

4. Present small portions in a progressive sequence as in the skill presentations.
   - Discuss one point or detail at-a-time ensuring that the trainee comprehends before moving to another point etc.
5. The knowledge and skill together.
   - Information, when given and explained in terms of its application in performing a skill, is acquired more easily. Explain how the information helps the skill to be performed more efficiently.
6. Information where possible should be given close to its application in performing some skill e.g., safety in using gases to be given prior to working with gases etc. Avoid giving information too far in advance or after the skill in which this information is needed.

Every effort is needed to show the value of the information and in motivating the trainees so that this very important aspect of job training is accomplished successfully.

INSTRUCTIONAL PLAN

POSITION TO BE TRAINED: _____

NO: _____ LOCATION: _____

DATE: _____ DURATION: _____

INSTRUCTIONAL TOPIC: _____

_____

PREREQUISITES: _____

_____

MATERIAL/SUPPLIES ETC: _____

_____

_____

INSTRUCTIONAL/PERFORMANCE OBJECTIVE

Trainee to be able to: _____

_____

Under the following conditions: _____

_____

To these standards: _____

_____

INSTRUCTIONAL CONTENT (List on Operation Breakdown Sheet or Information Breakdown Sheet)

_____

_____

TRAINEE ACTIVITY (List what trainee will do to practice)

_____

EVALUATION ACTIVITY/PROCEDURE (State how you will evaluate the trainee performance)

OPERATION BREAKDOWN WORKSHEET

POSITION:_____ TASK:_____

OPERATION:_____

_____

Important STEPS in the operation.

STEP - a significant action which advances the operation towards completion.

KEY POINTS - the key to doing the steps correctly, efficiently or accurately.

HOW HE DOES IT (Step)	POINTERS TO BE OBSERVED IN PERFORMING THE STEP

This operation breakdown was made by:_____

INFORMATION BREAKDOWN SHEET
(Related Technical Information)

INFORMATION TOPIC: *Determining the Principle of The Four Stroke Cycle*

INSTRUCTIONAL SEQUENCE	KEY POINTS
1. *Demonstrate the function of the model.*	- *Point out each stroke and value action.* - *Show internal relationships.* - *Define BDC and TDC.*
2. *Draw 4 stroke cycle on chalkboard (or utilize transparency).*	- *Point out how action progresses, both on the drawing and model at the same time.*
3. *Review 4 cylinder engine firing order.*	
4. *Show relationships of cylinder stroke by stroke.*	- *By engine firing order.* - *Point out relationships between 1 and 3 and 2 and 3.*
5. *Draw on board paired relationships of pistons.*	- *Point out the action of 1 and 4 and 2 and 3*
6. *Review model action.*	- *Questions.* - *What is the order of stroke?* - *When should the spark plug fire?* *etc., etc.*

CONSIDERATIONS FOR GIVING A RELATED INFORMATION PRESENTATION

- EXPLAIN THE VALUE OF THE INFORMATION TO THE SKILL TO BE PERFORMED. (SHOW THE RELATIONSHIP OF EACH)
- USE EVERY POSSIBLE AUDIO-VISUAL AID.
- DO NOT PRESENT TOO MUCH INFORMATION IN A SINGLE PRESENTATION.
- USE ACTUAL JOB SITUATIONS TO EXPLAIN THE INFORMATION.
- TRAINEE ASSIGNMENT TO INVOLVE ACTUAL OCCUPATIONAL PROBLEMS.

WORKSHOP 3 Training of Trainers

UNIT [redacted] *TRAINING PROBLEMS*

WHAT IS THIS UNIT ALL ABOUT

This unit describes some of the problems which can be encountered by those responsible for training as they set about developing and presenting training programs. It also discusses some of the possible solutions to the problems.

WHY DOES THE TRAINEE NEED THIS

Persons who have the task of developing and conducting training programs can easily become frustrated because of the lack of interest and cooperation from many of the persons directly or indirectly involved. This is especially true for new trainers.

The new trainer should therefore be made aware of the several problems which could retard progress and dampen his enthusiasm, and should be equipped to deal with them.

WHAT DOES THE TRAINEE NEED TO KNOW BEFORE BEGINNING

All units of Workshops 1 and 2 and Lesson 1 of this unit.

WHAT EQUIPMENT AND SUPPLIES ARE NEEDED

ITEM	LESSON/OBJECTIVE		
	1	2	3
	1	1	1
Overhead Projector	X	X	X
Transparencies	X	X	X
Information Sheets	X	X	X
Chalkboard	X	X	X

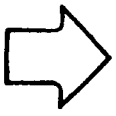
NUMBER OF LESSONS AND TOTAL INSTRUCTIONAL TIME

Total Lessons: 3

Total Time: 1½ hours

WORKSHOP 3 Training of Trainers

UNIT 11 Training Problems

LESSON 1  *TRAINING FACILITIES*

ESTIMATED TIME 30 minutes

PREREQUISITES All Units of Workshop 2

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  identify the problems encountered in obtaining needed facilities for training; and

  suggest ways of overcoming these problems.

- Under the following conditions:

  within the local organizations.

- To these standards:

  be realistic and accurate in terms of the specific territory.

INSTRUCTIONAL RESOURCES

Information Sheet TP.IS.01

Overhead Transparencies TP.OH.01 through TP.OH.03

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Discuss some of the basic things to be considered for training activities.

2. Define facilities and identity those items which are facilities - use TP.OH.01 and TP.OH.02.
3. Discuss the kinds of problems to be encountered in acquiring needed facilities.
4. Discuss possible ways of overcoming these problems - use TP.OH.03.

TRAINEE ACTIVITY

1. Trainee to make a list of all the things which are necessary for developing and implementing training.
2. Based on the agreed definitions, the trainees pick out those items from their list which are facilities. These will be discussed to ensure correct listing.
3. Trainee to list the various types of problems which are likely in getting needed facilities for training.
4. Trainee to review list of suggestions for overcoming problems then discuss the appropriateness of each or the weaknesses in implementing any.

EVALUATION ACTIVITY

1. Define facilities as used in the presentation.
2. Make a list of all facilities required for your presentation.
3. For those not available, suggest ways of dealing with this problem.

BASIC FACILITIES FOR TRAINING

ACCOMMODATION

This should have adequate:

- ventilation
- accessories
- seating
- tables
- sanitary facilities
- storage space

SUPPLIES

Film for transparencies
Flip charts
Chalk
Typewriter ribbons
Duplicating paper
Photo-copying paper
File jackets
Document wallets
Stencils
Typing paper
Correcting fluid
Liquid paper
Staples
Carbon paper
Envelopes (assorted)
Scotch tape
Masking tape
Overhead projector pens
Gloy
Diary
Dictionary
Duplicating ink
Legal pads
Pencils
Pens
Filing index cards
Endorsing ink
Blotting paper
Letter heads
Binders

EQUIPMENT

Overhead projector
Film projector (16mm)
Slide projector (35mm)
Screen
Flip chart easel
Magnetic board
Flannel board
Chalkboard
Typewriter (manual)
Typewriter (electric)
Photocopying machine
File cabinet
Duplicating machine
Desk and chair
Stapling machine
Paper clips
Staple removers
Typewriter cleaning kit
Paper punch
Chalkboard duster
Electric fans
Desk tray
Stamp pad
Sponge bowl
Rulers
Book shelf
Drawing board
Tee square

The facilities listed overleaf are what is regarded as basic and common items which are necessary for efficient training. Whilst these are regarded as being basic and necessary, there are many instances where efficient training is conducted without many of these items.

The resourceful trainer does not use the shortage of these items as a reason for not providing vitally needed training. He finds ways and means of circumventing this problem. The following list is regarded only as ideas for overcoming this problem, you may be able to identify others of your own:

1. Several of these can be bought from funds which will be made available in the budget of the organization. Endeavour to get a reasonable sum for training included in the budget.
2. Many individuals and/or organizations will make grants or donations for training. It is not uncommon for organizations which are recipients of your services to help in improving the expertise of the personnel. Write them to help.
3. The particular utility can provide many of these items from their own self-help activities. Whether this is by way of fund-raising activities or merely by regular contributions by members.
4. Non-consumable items can be acquired on loan from writing the territory or within the region.

TRAINING FACILITIES

ALL AIDS AND CONVENIENCES REQUIRED

TO DEVELOP AND IMPLEMENT TRAINING

TRAINING FACILITIES

. . . . . ACCOMMODATION

. . . . . EQUIPMENT

. . . . . MATERIALS/SUPPLIES

. . . . . AIDS

NEEDED FACILITIES CAN BE PROVIDED BY . . . . .

1. TRAINING FUNDS INCLUDED IN THE UTILITY BUDGET

2. DONATIONS OR GRANTS FROM INDIVIDUALS OR ORGANIZATIONS.

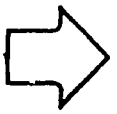
3. LOCAL SELF-HELP ACTIVITIES WITHIN THE UTILITY.

4. BORROWING WITHIN THE COUNTRY OR WITHIN THE REGION.

5. IMPROVISATION, USING LOCAL AVAILABLE RESOURCES.

WORKSHOP 3 Training of Trainers

UNIT 11 Training Problems

LESSON 2  *TRAINING PARTICIPANTS*

ESTIMATED TIME 30 minutes

PREREQUISITES Satisfactory completion of Units 6, 7, 8 and 9

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  identify some important factors which present difficulty in selecting and training participants;

  list some of the most common problems encountered when selecting and training participants; and

  explain ways of dealing with these problems.

- Under the following conditions:

  after 30 minutes of discussion in class.

- To these standards:

  in keeping with the details discussed in the class notes.

INSTRUCTIONAL RESOURCES

Information Sheet TP.IS.02

Overhead Transparencies PP.OH.05 and TP.OH.04 through TP.OH.08

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Discuss some common problems which are encountered with

persons to be trained.

2. Discuss the situation where persons in positions lack job prerequisites and prerequisites for future training - use TP.OH.04 and TP.OH.05.
3. Discuss the unwillingness of employees to take training - use TP.OH.06.
4. Discuss the short-term employees and the problem they pose to on-the-job training - use TP.OH.07 and TP.OH.08.

TRAINEE ACTIVITY

1. Trainee to suggest common problems encountered with persons to be trained. These should be listed on the chalkboard.
2. Trainee to give reasons for persons being in positions for which they have not the prerequisites. He/she will also state ways of overcoming the problem where the persons even lack the prerequisite to take training.
3. Trainee to list reasons why some employees refuse to take training. He/she will give solutions for each of the situations stated.
4. Trainee to explain who are short-term employees. He/she to explain problems which they cause and suggest ways of overcoming them.

EVALUATION ACTIVITY

1. List the three situations which cause problems in training certain employees.
2. Suggest two solutions for each situation stated.

PROBLEMS RELATING TO PARTICIPANTS FOR TRAINING

Frequently, certain situations are encountered which make the selection of participants for training very difficult. Some of the common causes of problems are:

1. Lack of prerequisites by persons already employed in certain positions.
2. The unwillingness of some employees to take training.
3. The presence of short-term employees in the organization.

If the organization is to function efficiently, these persons who need training must be trained and therefore these situations must be faced and dealt with in a positive way. Let us examine these situations more closely.

LACK OF PREREQUISITES

Several organizations have within their ranks some workers who have need for training but who, because they lack come basic prerequisites, are either not recommended for training or if they are included in a course, very seldomly prove successful. This situation exists either by employing persons without the initial prerequisites or as a result of promotional policies which put these persons in positions inconsistent with their real abilities.

The supervisor is faced with this situation knowing quite well that these persons need training. The obvious solution seems to be one that is not very easy to handle but which is necessary. These persons cannot

be trained without the stated prerequisites, therefore they must be provided with such prerequisites before proceeding with the other aspects of training.

UNWILLINGNESS TO TAKE TRAINING

Supervisors/trainers sometimes find that persons are unwilling to take the training being offered.

This unwillingness may arise out of:

1. Fear of failure by the trainee. This could be a result of the trainee not having been given training for a long period of time, and is uncertain of his ability to assimilate the skill or information being taught.
   Such a person's fears can be allayed if he is treated with understanding and given the necessary encouragement. The trainer might even have to use a simple method of presentation which would boost the trainee's confidence.
2. Lack of opportunity to utilize information and skills gained in previous training.
3. Lack of reward for higher training. These two can be seen as either the person's dissatisfaction with the organization's training policy (stated or unstated), or his disappointment at not having the job satisfaction which he wants.
   Clearly stated objectives of the training course might help to motivate such persons. They must be convinced of the need for the training.

4. Bad selection of participants - i.e., group not being homogeneous. Many people become embarassed when their lack of knowledge or skill is exposed to their juniors. Some trainees are very sensitive in this area, and not without cause. They are more comfortable in training with persons of their own age group of holding similar positions. Groups should be selected with these facts in mind.

SHORT-TERM EMPLOYEES

Sometimes, either knowingly or unknowingly, an organization may hire short-term employees. When the appointment is known to be short-term, there is usually little or no problem where training is concerned. The usual procedure is to train the employee in the required basic skill and knowledge related to the specific assignment. In many cases the employee is hired because he is known to have the necessary prerequisites and he proceeds to work without further training.

Where the organization is unaware that the employee is working for a short period only (maybe up to two years), a lot of time, effort and money could be spent in training without any real return to the organization. It is left largely to the employee's honesty to inform the organization of his intentions. This is seldom done.

Managers and supervisors should make every effort to ascertain which of their new or recent employees are likely to remain with the organization on a long-term basis. They would then be better able to select trainees with a reasonable assurance that the training given would not be lost to the organization.

Many organizations adopt a policy of bonding of their trainees to remain in their employ for a given period after completion of the training: this bonding is designed to allow the organization to benefit from the training given and received.

PERSONS SHORT OF PREREQUISITES ARE IN POSITIONS BECAUSE OF . . . . .

1. FINANCIAL CONSTRAINT

2. SHORTAGE OF QUALIFIED PERSONNEL

3. ORGANIZATIONAL PROMOTIONAL POLICY PRACTICE

4. EXTERNAL SELECTION AND PLACINGS

WHERE AND WHEN TO UPGRADE PREREQUISITES OF PERSONNEL

WHERE . . . . .

1. AT EXTERNAL INSTITUTIONS

2. ON THE JOB

WHEN . . . . .

3. DURING WORKING HOURS

4. TIME RELEASE

5. AFTER WORKING HOURS

UNWILLINGNESS TO TAKE TRAINING MAY BE CAUSED BY:

- FEAR OF EMBARRASSMENT (PERSONALITY IMAGE)
- FRUSTRATION CAUSED BY NON-UTILIZATION OF TRAINING
- RESENTMENT FOR CERTAIN GROUPINGS FOR TRAINING
- LACK OF PERSONAL REWARD FOR HIGHER ACHIEVEMENTS
- LACK OF RELEVANCE AND USEFULNESS OF TRAINING

THE PROBLEMS CAUSED BY SHORT-TERM EMPLOYEES

1. LOW INTEREST AND INVOLVEMENT (STE).

2. LOW MORALE AMONG ALL IN TRAINING.

3. NON-RETURN FROM TRAINING TO ORGANIZATION.

4. MANAGEMENT HESITANT TO TRAIN BEFORE THE RIGHT PERSONS ARE IDENTIFIED.

5. FRUSTRATION OF THE WELL-INTENTIONED BECAUSE OF DELAY IN BEING TRAINED.

HOW TO DEAL WITH THE TRAINING OF SHORT-TERM EMPLOYEES

- OFFER BASIC TRAINING TO ALL NEW EMPLOYEES
- ASSIGN AND TRAIN IN SPECIFIC AREA
- ASSESS AND DETERMINE EMPLOYEES' INTENT
- CONTROL TRAINING

WORKSHOP 3 Training of Trainers

UNIT 11 Training Problems

LESSON 3 *GOVERNMENT, MANAGEMENT AND LABOUR COOPERATION*

ESTIMATED TIME 30 minutes

PREREQUISITES Lessons 1 and 2 of this Unit

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  recognize the inter-related responsibilities of Government, Management and Labour in connection with training; and

  identify the effects of mass cooperation on training results.

- Under the following conditions:

  based on the local situation within which the local water utility operates.

- To these standards:

  information identified to be within 80% accuracy and completeness.

INSTRUCTIONAL RESOURCES

Information Sheet TP.IS.03

Overhead Transparencies TP.OH.09 through TP.OH.12

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Discuss how management can cooperate and assist training - use TP.OH.09:

- allowing time
- facilitating on-the-job training
- sharing or providing training cost
- providing incentive for training
- establishing definite training policies
- assisting in establishing training standards

2. Discuss ways in which labour organizations, unions, associations can cooperate in training - use TP.OH.10:

   - sharing training cost
   - sharing personnel (training)
   - influencing worker participation
   - assisting in establishing training policy
   - assisting in establishing training standards

3. Discuss how public training organizations can cooperate and assist in training - use TP.OH.11:

   - sharing training facilities
   - sharing training personnel
   - assisting in developing training material and methodology
   - assisting in establishing training standards

4. Discuss ways in which the three could function together for the good of training - use TP.OH.12.

TRAINEE ACTIVITY

1. Trainee to explain how management can cooperate and assist training.

2. Trainee to explain how labour organizations and associations can cooperate in training.

3. Trainee to explain how public training organizations can assist in training.

4. Trainee to explain how the three bodies could unite to assist training in the utilities.

EVALUATION ACTIVITY

1. State three ways in which Government and unions can cooperate with you in your training.
2. List six ways in which the utility can benefit from cooperation with management, government and labour.

COOPERATION OF GOVERNMENT, MANAGEMENT AND LABOUR ORGANIZATIONS IN TRAINING

The principle on which the thinking that effective job training requires the full support and cooperation of Government, Management and Labour is referred to by the International Labour Organization document as the Tripartite Principle. This principle has been rooted in the fact that in the early periods of industrial practice, the three agencies viz., Management, Labour and 'Official Trainer' - being Government - were very closely tied together and in many cases even found in one organization.

During the period of fragmentation of industry, there evolved three separate bodies. Union, representing workers, management and government as representing the official training organization. These three distinct divisions of industry introduced distinct and separate objectives and even became rivals. With this rivalry the cooperation became less and even non-existent.

If job training is to return to its effectiveness as known in the early periods of history when craftsmanship was at its highest, we must seek and reintroduce this close cooperation, understanding and support of the three elements of industry - Management, Labour and Government (being the official institution of training).

MANAGEMENT CAN COOPERATE IN TRAINING BY:

- ALLOWING TIME
- FACILITATING ON THE JOB TRAINING
- SHARING OR PROVIDING TRAINING COST
- PROVIDING INCENTIVE FOR TRAINING
- ESTABLISHING DEFINITE TRAINING POLICIES
- ASSISTING IN ESTABLISHING TRAINING STANDARDS

LABOUR ORGANIZATIONS CAN COOPERATE IN TRAINING BY:

- SHARING TRAINING COSTS
- SHARING PERSONNEL (TRAINING)
- INFLUENCING WORKER PARTICIPATION
- ASSISTING IN ESTABLISHING TRAINING POLICY AND STANDARDS

TP.OH.10

GOVERNMENT CAN COOPERATE IN TRAINING BY:

- SHARING TRAINING FACILITIES
- SHARING TRAINING PERSONNEL
- ASSISTING IN THE DEVELOPMENT OF TRAINING MATERIALS, METHODOLOGY AND STANDARDS

WORKSHOP 3 Training of Trainers

UNIT 12 *TRAINING DELIVERY SYSTEM*

WHAT IS THIS UNIT ALL ABOUT

An explanation of the Training Delivery System (TDS) is provided as well as a detailed overview of the Eastern Caribbean Water Utility TDS.

WHY DOES THE TRAINEE NEED THIS

The Supervisor/Trainer should have a clear perspective of the totality of a TDS - that it is many-sided and its success (or failure) is influenced by many interdependent factors.

A Supervisor/Trainer working in any of the 10 countries participating in the EC Water Utility TDS will only be able to make optimum use of it and maximum contribution to it if he/she is knowledgeable of the said Training Delivery System.

WHAT DOES THE TRAINEE NEED TO KNOW BEFORE BEGINNING

The findings and recommendations of the in-depth Assessment of April 1977 carried out by a 3-man team.

WHAT EQUIPMENT AND SUPPLIES ARE NEEDED

ITEM	LESSON/OBJECTIVES				
	1	2			
	1	1	2	3	4
Overhead projector	X		X		
Transparencies	X		X		
Information Sheets	X	X	X	X	X
Chalkboard	X	X	X	X	X

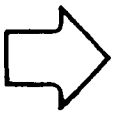
NUMBER OF LESSONS AND TOTAL INSTRUCTIONAL TIME

Total Lessons: 2

Total Time: 45 minutes

WORKSHOP 3 Training of Trainers

UNIT 12 Training Delivery System (TDS)

LESSON 1  *THE TDS CONCEPT*

ESTIMATED TIME 15 minutes

PREREQUISITES Knowledge of Section 3 and Sub-section 4.1

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  explain the development phases of a TDS and list its essential elements.

- Under the following conditions:

  recall.

- To this standard:

  80%.

INSTRUCTIONAL RESOURCES

Information Sheet TDS.IS. 01

Overhead Transparency TDS.OH.01

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Discuss the comparison of the developmental phases of a water distribution system and a training delivery system - use TDS.IS.01.

2. Discuss the essential components of a water distribution system and their parallels in the Training Delivery System.
3. Discuss each component of the TDS and its contribution to the function of the TDS - use TDS.IS.01.

TRAINEE ACTIVITY

1. Trainees to provide instructor with their ideas on how the developmental phases of a TDS compare to that of a water distribution system.
2. One trainee to list on the chalkboard the essential components of a water distribution system. Remaining trainees are invited to contribute, by clarifying details listed on chalkboard. A second and parallel list is developed by all trainees to show the components of the TDS.
3. Trainees to explain the meanings and implications of each component, then state the value of each to the TDS.

EVALUATION ACTIVITY

1. List the three developmental phases of a TDS.
2. List the components of the TDS in the order that they would be identified or developed.
3. Provide a simple but valid definition for TDS.

The average water consumer has a very limited knowledge of the water distribution system which serves his community. Often this knowledge is limited to what is visible, e.g., the tap in the sink, the fire hydrant in the street. More often than not the water customer is completely unaware of the extent of the water system necessary to provide water at the tap or hydrant.

Similarly, the average waterworks employee is not knowledgeable of what is required to implement relevant training activities. To improve his perspective, it is appropriate to describe training in system terms, i.e., a Training Delivery System. The analogy used here is a Water Distribution System and a Training Delivery System. In one system, potable water is delivered to the consumer and in the other, appropriate training provided for the trainee. One can compare the development of the Training Development System (TDS) to the construction of a water system. Just as the construction of a water system goes through the phases of investigation, design and construction, so too has a TDS its development phases. Just as a water system has certain components such as pipe, valves, pumping stations, etc., so too has a TDS its essential elements.

The logical development of a training delivery system will include at least three phases:

- DIAGNOSTIC;
- DESIGN; and
- IMPLEMENTATION.

The essential elements of a training delivery system are considered to be:

- Manpower Inventory;
- Inventory of Training Programs;
- Training Policy;
- Personnel Policy which relates to the training policy;
- Defined Organizational Structure indicating functions;
- Budget;
- Manpower Development Plan;
- Definition of the training methodology;
- Multi-disciplinary "pool" of instructors;
- Suitable "performance-oriented" instructional materials;
- Quantitative/Qualitative Evaluation of Effectiveness.

The development of a successful training delivery system requires careful preparation, i.e., the diagnostic and design phases. Similarly, for a training delivery system to function well, all the developmental phases and elements, as in a water system, must be built-in. It is a common failing to want to implement without doing any of the necessary preparatory work.

At the heart of the Training Delivery System is the Training Methodology. As discussed throughout the series of Workshops, the trainee will recall emphasis being placed on the Systematic Approach.

The local Training Coordinator appointed by each utility is responsible for developing, streamlining and effecting training within the Utility on a continuing basis. He/she, of course, functions in collaboration with the Management of the Utility.

TRAINING DELIVERY SYSTEM

THE TDS IS DEVELOPED IN THREE PHASES:

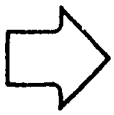
1. DIAGNOSTIC

2. DESIGN

3. IMPLEMENTATION

WORKSHOP 3 Training of Trainers

UNIT 12 Training Delivery System

LESSON 2  *EC WATER UTILITY TDS*

ESTIMATED TIME 30 minutes

PREREQUISITES Lesson 1 of this Unit

INSTRUCTIONAL/PERFORMANCE OBJECTIVES

- The trainee will be able to:

  explain the functions, location and staffing of the OTC;

  explain the local and regional function of the coordinator; and

  list the activities of the EC Water Utility TDS development.

- Under the following conditions:

  recall.

- To this standard:

  90%.

INSTRUCTIONAL RESOURCES

Information Sheets TDS.IS.02 and TDS.IS.03

Overhead Transparencies TDS.OH.02 and TDS.OH.03

INSTRUCTIONAL ACTIVITY

INSTRUCTOR ACTIVITY

1. Discuss the location and function of the OTC.
2. Discuss the position and function of the local and regional coordinator.

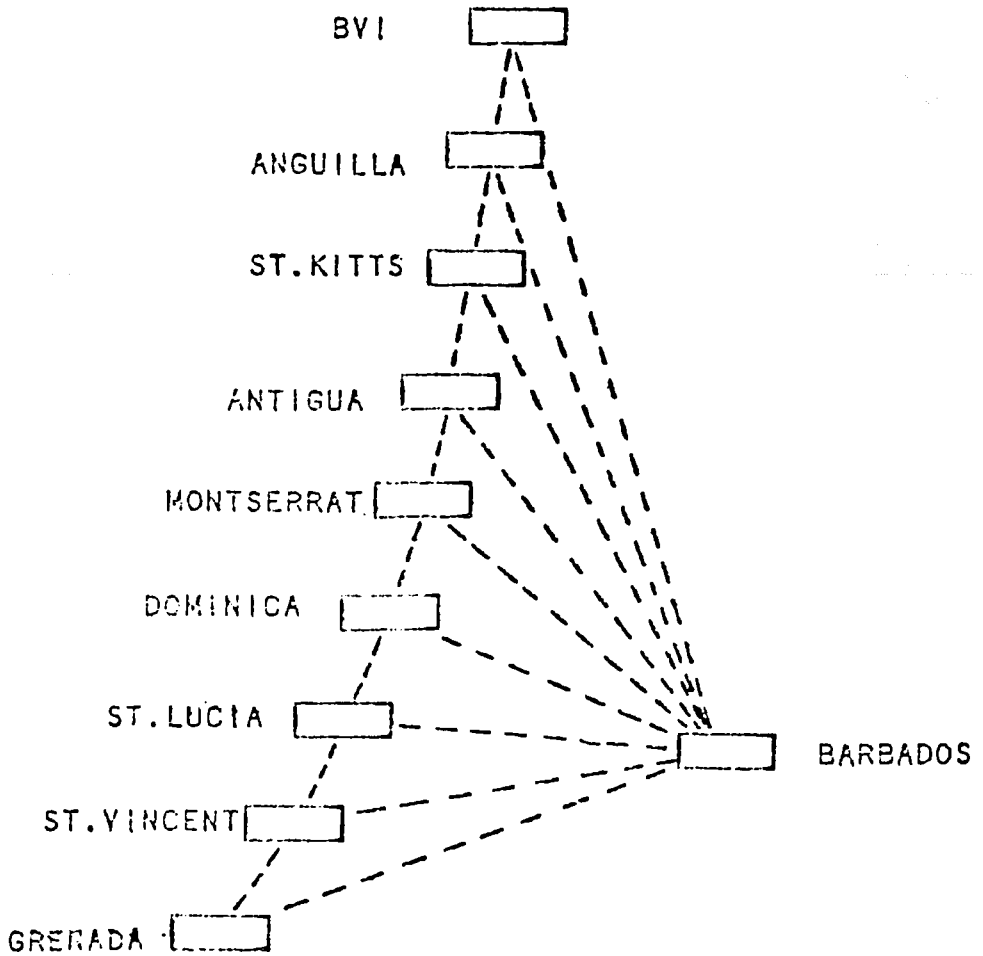
3. Discuss the activities included in developing the EC Water Utility TDS - restate scheduled dates of each activity - encourage active participation.

TRAINEE ACTIVITY

1. Trainees to explain what OTC means, state where in the region it is located and list the functions of the OTC. Several trainees to make input here.
2. Trainees to explain the two positions of coordinators at the OTC and further state the local as well as regional functions of each. Each coordinator in the class take prominent positions in this discussion.
3. Trainees to recall the four major activities of the project and explain their implications to the development of the EC TDS. Trainees will explain the importance of full support to each activity.

EVALUATION ACTIVITY

1. Oral spot checks of:
   - functions of OTC
   - functions of coordinator locally and regionally
   - activities of EC Water Utility TDS
2. Evaluate the response and clarification given in the discussions.



TRAINING DELIVERY SYSTEM

(PARTICIPATING EASTERN CARIBBEAN COUNTRIES)

One of the findings of the Assessment of April 197/ is that there are over 2,000 employees in the waterworks industry in the 10 EC countries for which the TDS was developed. Of these, the Barbados Waterworks Department has 1,000.

Barbados, therefore, appears to have a number of qualifications which point to it as a more suitable choice from which to coordinate an EC Training Delivery System. For example:

- Centrally located geographically and easily accessible by air;
- Existing water utility has enough employees to sustain an on-going training program, and is receptive to collaboration;
- Four instructional institutions very receptive to collaboration (Barbados Community College, Samuel Jackman Prescod Polytechnic, Barbados Institute of Management and Productivity, and the Government Training Center).

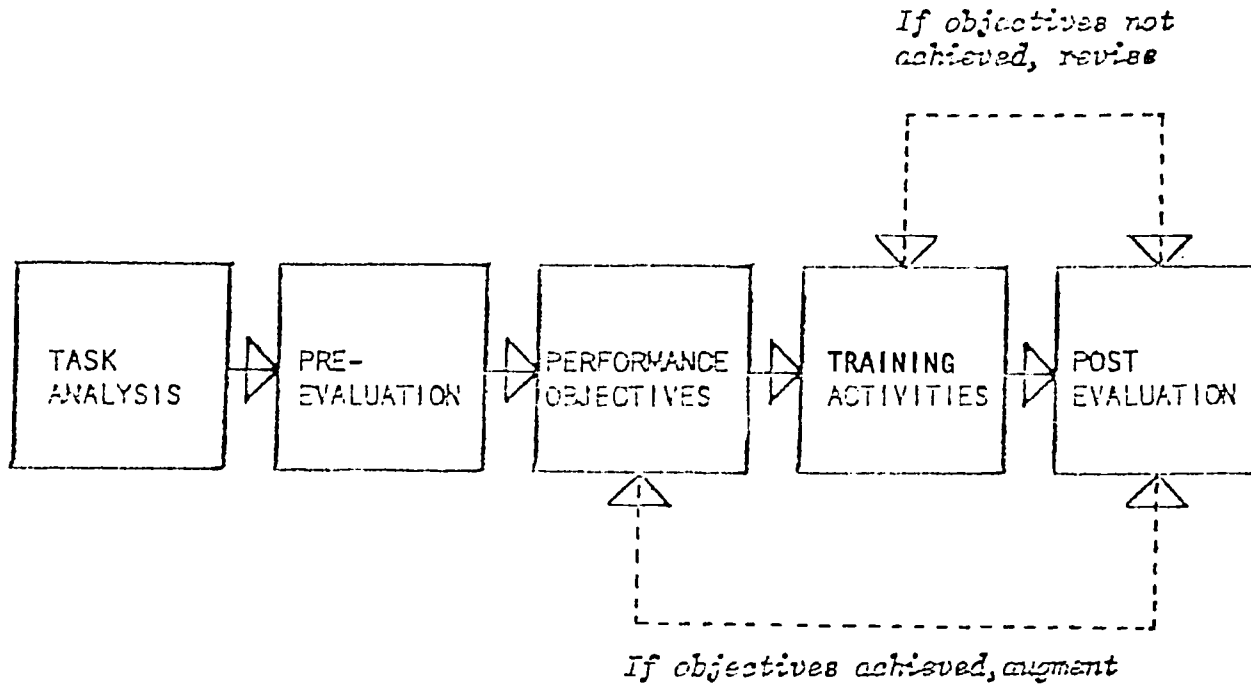
The phases of the EC water utility TDS, evolved out of the recommendations of the Assessment of April 19/7 are as follows:

- Development of the TDS organization.
- Training of Trainers.
- Development of Training/Job Manuals.
- Manager/Supervisor Course and Premier Briefing.

Local efforts in the development of training materials and strategies will be supported and where appropriate will be shared within the region or elsewhere.

Inter-regional communication will be facilitated through the Office

of Coordination. In this regard all relevant information or News Bulletin will be communicated through the region thereby bringing even closer each individual territory and establishing a bond of common interest. (A system within a system so to speak), which is illustrated as follows:



GENERAL INFORMATION:

- A National/Regional Office of Training Coordination (OTC) in the Barbados Waterworks Department (BWWD) has been established.
- BWWD staff this office with a Training Coordinator, a Training Assistant and a Secretary.
- The Eastern Caribbean Water Utilities nominated one of their own staff members as local Training Coordinator. The intent is that coordination of training be performed as a prime responsibility rather than overtime work. The local Training Coordinator through his water authority manager, will provide the linkage with the OTC in Barbados.
- Collaboration be provided by CIDA/PAHO on a "fade-out" basis through the AMRO 2174 Project to establish and initiate the operation of said OTC and carry out on-the-job training of the OTC staff.
- The OTC has been established to perform a dual role in National (Barbados) and Regional (Eastern Caribbean) waterworks training.
- Starting with the third year, at least 50% of the salary of the Regional Training Coordinator will be provided, on a cost sharing basis, by the smaller islands through payment of a training fee from each water utility budget. (Such a fee could be established on the basis of numbers of water employees).

- For each fellowship trainee processed, an additional handling fee of EC$10.00 is suggested.

The functions of this National/Regional Office of Training Coordination would be divided between national duties for Barbados and a coordination role on an international basis.

On a NATIONAL basis, the OTC will serve as the nerve center for a national training delivery system for Barbados, and would perform the following:

1) To monitor and forecast national manpower requirements in the water sector.
2) To evaluate training materials from other Training Offices or the WHO International Reference Center, and modify as required to meet specific needs of the country's trainees.
3) To develop training manuals and teaching aids.
4) To make contractual arrangements for the national or international training resources, e.g., institutions, instructors, courses, etc.
5) To maintain up-to-date information on local, national, regional and international training options (courses, institutions).
6) To select and develop the instructors and trainers who will form part of the national training delivery system.
7) To plan, organize and coordinate (also implement in some cases) local and national training programs.
8) To establish an "accountability" system for providing the Training Coordinator and top management with qualitative/

quantitative evidence of training effectiveness giving due consideration to cost/benefit indicators.

NOTE: The local Coordinator in each country will gradually assume like responsibilities.

On a REGIONAL basis, for all countries of the English-speaking Caribbean, it is intended that OTC play a supportive role to water utility training efforts and therefore its proposed functions would be:

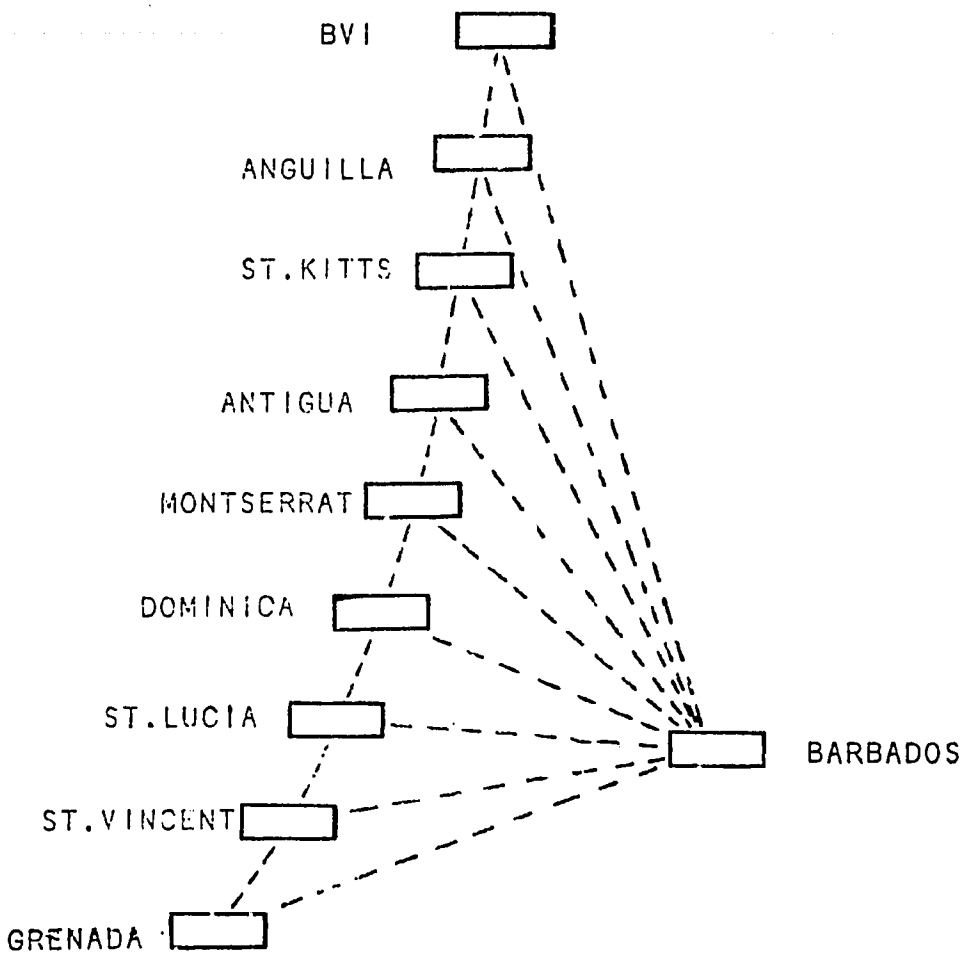
1) To facilitate the interchange of information regarding training developments, e.g., manuals, available courses, training methodology, teaching aids, etc.

2) To optimize the utilization of training resources within the region by maintaining and disseminating a master list of specialists; and a schedule of programmed courses in the various countries of the region.

3) To collaborate with water utility Training Coordinators on the basis of requests for advisory services, e.g., short-term consultants, instructional seminars, observation tours, etc.

4) To coordinate, where practicable, training courses within the region, in order to avoid duplication.

5) To assist the various water utilities in training of trainers and key water personnel.


BVI
ANGUILLA
ST.KITTS
ANTIGUA
MONTSERRAT
DOMINICA
ST.LUCIA
ST.VINCENT
GRENADA
BARBADOS

ELEMENTS OF EC WATER UTILITY TDS

- MANPOWER INVENTORY;
- INVENTORY OF TRAINING PROGRAMS;
- TRAINING POLICY;
- PERSONNEL POLICY;
- DEFINED ORGANIZATIONAL STRUCTURE;
- BUDGET;
- MANPOWER DEVELOPMENT PLAN;
- DEFINITION OF THE TRAINING METHODOLOGY;
- MULTI-DISCIPLINARY "POOL" OF INSTRUCTORS;
- "PERFORMANCE-ORIENTED" INSTRUCTIONAL MATERIALS;
- EVALUATION OF EFFECTIVENESS.

NOTE:

THE WATER DISTRIBUTION SYSTEM CONSISTS OF CERTAIN ESSENTIAL COMPONENTS WHICH ALTOGETHER PERMIT WATER TO BE DELIVERED TO THE CUSTOMER, E.G., PIPE, VALVES, SERVICE LINES, PUMPING STATIONS, RESERVOIRS, CHLORINATORS, ETC. IF ONE OR MORE OF THE COMPONENTS ARE MISSING THE INTEGRITY OF THE SYSTEM IS JEOPARDIZED.

BY THE SAME TOKEN A TRAINING DELIVERY SYSTEM HAS ITS ESSENTIAL ELEMENTS. IF THESE ESSENTIAL ELEMENTS ARE BUILT INTO THE SYSTEM THE PROBABILITIES ARE HIGH FOR SUCCESSFUL DEVELOPMENT OF THE ATTITUDES, KNOWLEDGE AND SKILL REQUIRED BY AN INDIVIDUAL TO SATISFACTORILY PERFORM ON THE JOB AND AT THE SAME TIME ACHIEVE PERSONAL AND ORGANIZATIONAL GOALS.

CERTIFICATE AWARD CRITERIA

CARIBBEAN BASIN WATER MANAGEMENT PROJECT
"TRAINING OF TRAINERS" WORKSHOPS

1. WORKSHOP OBJECTIVE

To provide personnel, in each island, already technically trained with the necessary communication skills and instructional techniques required to assist with or carry out training at their own utility as well as to assist with instructional programs in their specialities at other locations.

2. PARTICIPANT SELECTION CRITERIA

Participants were selected on the basis that he/she

1) Is a senior member of office staff or field staff; or
2) Occupies a position that has authority over other people (or will in the near future); or
3) Is a key person who will make a substantial contribution to training activities; or
4) Is a person who has demonstrated an ability to improve employee performance on the job; and
5) Is a person with enough remaining service time that a "return" can be realized from the training investment.

3. AWARD OF CERTIFICATE

The certificate is awarded to participants who:

1) Indicated awareness of the objectives of the workshops;
2) Met one or more of the prerequisites specified above;
3) Attended a minimum of 75% of each of the 3 workshops;
4) Satisfactorily completed

- at least the first 4 objectives of Home Study Assignments of Workshop 1;
- a 15 minute presentation in Workshop 2;
- at least the first 3 objectives of Home Study Assignments of Workshop 2;
- a 45 minute presentation in Workshop 3.

SUPPLEMENTAL NOTE

The certificate may also be awarded to participants who have not met all of the above requirements but who, in the opinion of the instructors and sponsors, have demonstrated sufficient ability to perform the objectives of the Workshop.

EASTERN CARIBBEAN

WATER UTILITY

TRAINING DELIVERY SYSTEM

Certificate

This is to certify that

.....

has satisfactorily completed the performance oriented short-term course entitled:

TRAINING OF TRAINERS

Issued..... 1978

.....

.....

.....

PAHO/WHO

.....

Recipient

COURSE OUTLINE

TRAINING OF TRAINERS

A series of three 20-hour Workshops covering the following subject areas:

- **WORKSHOP 1**
  - Unit 1: Task Analysis (TA)
  - Unit 2: Performance Objectives (PO)
  - Unit 3: Presentation Techniques

  HOMESTUDY ASSIGNMENT NO. 1
- **WORKSHOP 2**
  - Unit 4: Review of TA and PO
  - Unit 5: Presentation Skills
  - Unit 6: Instructional Media
  - Unit 7: Questioning Techniques
  - Unit 8: Presentations
  - Unit 9: Evaluation Techniques

  HOMESTUDY ASSIGNMENT NO. 2
- **WORKSHOP 3**
  - Unit 10: Review of Presentation Preparations
  - Unit 11: Training Problems
  - Unit 12: Training Delivery System (TDS)
  - Practice: Trainee Presentations

AIDE MEMOIRE

FOR PARTICIPANTS OF THE *"TRAINING OF TRAINERS"* WORKSHOPS

OBJECTIVE OF THE WORKSHOPS

To provide personnel already technically trained, with the necessary communication skills and instructional techniques required to assist with or carry out training at their own utility as well as to assist with instructional programs in their specialities at other locations.

CHARACTERISTICS OF A GOOD TRAINERS

- Knowledge of Subject
  1) Qualified in both specific subject and the field in general.
  2) Is current on recent developments.
  3) States specifics accurately.
  4) Can relate subject to safety and to cost consciousness.
- Leadership Ability
  1) Demonstrates initiative and character.
  2) Accepts responsibility.
  3) Is stickler for accuracy.
  4) Handles people well.
  5) Does not jump to conclusions.
  6) Follows orders.
  7) Motivates trainees to learn.

- Positive Personality
  1) Creates favourable reaction.
  2) Displays energy.
  3) Presents good appearance.
  4) Is considerate.
  5) Is liked by most.
  6) Considers other ideas and opinions.
  7) Creates confidence in his instruction.
- Knowledge of Instructional Skills
  1) Selects most effective instructional methods.
  2) Evaluates effectiveness of instruction.
  3) Uses motivational techniques.
  4) Maximizes class participation.
  5) Uses constructive criticism.
  6) Speaks and expresses himself well.
  7) Emphasizes "doing".
  8) Integrates effective instructional media.
- Commitment to Learner
  1) Has patience.
  2) Is helpful.
  3) Is unselfish.
  4) Ensures maximum number of class achieves instructional objective.