MANAGEMENT TRAINING COURSE CONFERENCE OUTLINE

NO. 14

PRINCIPLES AND TECHNIQUES IN METHOD IMPROVEMENT

OBJECTIVES

1. To understand the supervisor's responsibility for developing improvements in job methods.
2. To recognize that the improvement of job methods is a never-ending process and that every improvement, no matter how small, is important.
3. To study the four factors of motion economy.
4. To develop a 5-step method improvement procedure.

AIDS AND MATERIALS

1. Worksheets 70 and 71.
2. Charts Nos. 3, 21, 22 and 23.
3. A typewriter (for demonstration).

TIME SCHEDULE

Minutes	Topics
25	I. The Supervisor's Responsibility for Job Methods Improvement
15	II. Use of the Work Area Analysis
30	III. Methods of Saving Motion
30	IV. Five Steps in Method Improvement
10	V. Summary
110	

		with less effort by making the best use of available manpower, materials and equipment.
II.	Use of the Work Area Analysis (15 min.)	Ask the conferees whether they had ever discovered that they had been unconsciously repeating useless motions in their work; whether their workers had ever been doing work in an unsafe way—even though the hazards were evident--simply because so far there had been no accidents. Ask them whether or not they have ever analyzed their work and studied it as being made up of separate motions. Show them a few examples to make them aware that there is always more than one way to do a job and that in order to omit useless motions in a work it is important to study its subdivisions and to analyze its separate motions.
	Worksheets 47—49 (40 min. to here)	Refer the conferees back to Worksheets 47—49, and explain how employees of different position levels are responsible for the smooth functioning and for figuring out necessary improvements for their respective work levels. Ask the group which work level the first-line supervisors should concentrate on in working out method improvements.
III.	Methods of Saving Motion (30 min.) Worksheet 70	Distribute Worksheet 70, "Factors of Motion Economy."
	Chart No. 21	In explaining the first of the four factors turn to Chart No. 21, "Classification of Areas of Motion." Ask one of the conferees to demonstrate how confining an operation to the lowest class of areas of motion conserves on time and energy.
	Demonstration with a typewriter	Have a typewriter ready to set on the table before the group. Present the typewriter, and then ask one of the conferees who is familiar with the operation of this machine to point out the various parts of the machine which show that motion economy was well applied.

		Then, go on to the other three factors given in Worksheet 70, and have the conferees cite various examples from work, play, travel, or just observation in which motion economy has been applied or can be applied.
	Chart No. 22	Next, turn to Chart No. 22, "A Method Improvement." Have the conferees identify in this illustration as many as possible the factors on motion economy given in the above worksheet.
	(70 min. to here)	Ask the group whether they can think of any further possibilities for improving the same job.
IV.	Five Steps in Method Improvement (30 min.)	Have the group turn to Worksheet 71, "Steps in Effective Method Improvement." Take a relatively simple example and show how the five-step method should be applied.
	Worksheet 71	
	Chart No. 23	Make use of Chart No. 23, "Job Method Improvement," to summarize the five-step procedure.
	(100 min. to here)	Use the remaining time by having the group cite examples of how they have applied or can apply any or all of the five steps in the method improvement procedure.
V.	Summary (10 min.)	Ask the group whether in their opinion job method improvement is more widely overlooked than any of the other phases of supervision and management in their nation.
	(110 min. to here)	Finally, stress that the responsibility for method improvement rests on <u>all</u> levels of employees but that at the same time it is up to the first-line supervisors and the higher officials to take the lead in initiating method improvements, in putting them to practical use, and in encouraging their subordinates also to work out method improvements.

MACHINES

1. Is each operating at maximum capacity?
2. Is each in good operating condition?
3. Are they serviced regularly?
4. Is the machine best for this operation?
5. Should a special set-up man or the operator make all the set-ups?
6. Can use be made of the machine's or operator's "idle" time?

WORK-PLACE

1. Is everything in the proper work area?
2. Can gravity-feed hoppers or drop-delivery chutes be used?
3. Are both hands doing useful work?
4. Has all hand-holding been eliminated as far as possible?
5. Is the distance of up and down motion reduced to the minimum?
6. Are lighting, temperature and humidity satisfactory?

EQUIPMENT AND TOOLS

1. Are suitable equipment and tools available?
2. Have they been supplied to operators?
3. How about gauges, jigs, and fixtures?
4. Have equipment, tools, etc., been properly pre-positioned to permit effective work?

SAFETY

1. Is the method the SAFEST as well as the easiest?
2. Does the operator understand all safety rules and precautions?
3. Has proper safety equipment been provided?
4. Do all workers realize that accidents cause WASTE of manpower, machines, and materials?

PRODUCT DESIGN

1. Could quality be improved by a change in design or specifications?
2. Would a slight change in design save much time or materials?
3. Are tolerances and finish necessary?

HOUSEKEEPING

1. Is good housekeeping being kept up throughout?
2. Is "junk" taking up space that could be used for additional operators, machines, benches, and operations?
3. Are unnecessary quantities of materials kept in proper storage?
4. Are necessary things in their proper places?
5. Does everyone understand that good shop housekeeping reduces delays, waste, and accidents?

Conference 14, Worksheet 70 (cont'd)

FACTORS OF MOTION ECONOMY

1. AREA OF LOWER CLASSIFICATION OF MOTIONS:

   a. Arrange work in the normal work area.
   b. Use other parts of the body when practicable.

2. MOTION ECONOMY ESSENTIALS:

   a. Position tools and materials efficiently.
   b. Use simultaneous symmetrical and rhythmic motions and slide, push, and roll factors.
   c. Check for time wasted in getting materials, in starting work, and in putting away materials.
   d. Check on operations, transportations, storages, and inspections.

3. JIGS, FIXTURES, AND MACHINES:

   a. Use jigs and fixtures.
   b. Use templates.
   c. Transfer skills to machines.

4. GRAVITY AND OTHER NATURAL FORCES:

   a. Use gravity to save work.
   b. Use other forces, e.g. winds, tides, sunlight, etc., whenever practicable.

Also QUESTION the _____

MATERIALS	LAYOUT
1. Can better, less expensive or less scarce materials be substituted?	1. Is there a minimum of backtracking?
2. Can the scrap from this job be used for another product?	2. Are the number of handlings and the distances traveled at a minimum?
3. Have defects and scrap been reduced to a minimum?	3. Is all available space being used?
4. Are the material specifications entirely clear and definite?	4. Are aisles wide enough?
5. Can office forms be consolidated or standardized in size, paper, color, etc.?	

STEPS IN EFFECTIVE METHOD IMPROVEMENT

1. SELECT THE JOB TO BE IMPROVED

   a. Is there waste of time, effort, or materials?

2. MAKE A DETAILED BREAKDOWN OF THE JOB

   a. List all the details of the job exactly as done by the present method.
   b. Make a flow diagram. Draw up a flow process chart wherever useful.

3. QUESTION EVERY DETAIL IN TERMS OF THE FACTORS OF MOTION ECONOMY

   a. Why is it necessary?
   b. What is its purpose?
   c. Where should it be done?
   d. When should it be done?
   e. Who is best qualified to do it?
   f. How is the best way to do it?

4. DEVELOP AN IMPROVED METHOD

   a. Eliminate unnecessary details.
   b. Combine steps where practicable.
   c. Rearrange for better sequence.
   d. Simplify as far as possible.
   e. Work out your ideas with others, and then write the proposed new method.
   f. Consider technical difficulties, and check regulations.

5. APPLY THE NEW METHODS

   a. Sell your proposal to your boss.
   b. Sell the new method to the operators.
   c. Put the new method into operation.
   d. Follow up. Apply the new method until an even better one is worked out.

Conference 14, Worksheet 71

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