

II - Program Changes through National Use

All of the T.W.I. programs undergo constant technical improvement as national use.

The first Job Methods manual was written in form similar to that of the Job Instruction manual. The second edition, containing virtually the same material, was set up in two column style labeled "important outline steps" and "discussion key points."

In these first manuals the present and proposed breakdowns appeared in almost exactly the same form as in the present manual (Exhibits 1 and 2), and the 4 steps were established in a form from which few changes have been necessary (Exhibit 3). There have been considerable changes in the sample proposal or write-up of the proposed improvement.

In the original Job Methods outline, very early in the first session the trainer demonstrated the present method of assembling a radio shield made up of brass and copper plates riveted together in four places. Next he demonstrated an improved method which involved moving the material nearer, having a fixture to hold the riveting machines, jigs to make the unassembled plates easier to pick up, a drop chute for scrap, the use of two riveting machines permitting use of both hands simultaneously, lining up of finished plates against the fixture in order to count them off in 20's, and the elimination of the stamping of the word "top" which had long been useless.

The improvement resulted in better use of machine time, increased production and decreased scrap. This improvement was not accomplished through a speed-up, but through elimination of unnecessary details. All of the breakdowns, proposals, etc., were made up on large charts which the trainer displayed before the group.

It was emphasized that breakdowns must be made on the job in order to get the small details. While the Job Instruction breakdown is designated to get the im-

portant steps and key points, the Job Methods breakdown must show up the smallest details. Unfortunately, in the early stages both the Job Instruction and Job Methods blank breakdown sheets appeared in two column form closely resembling each other. The confusion has now been eliminated to some extent by making up the Job Methods breakdown as a 3-column form with one column for details, one for notes, and one for ideas. (Exhibits 4 and 5).

In all of the J.M. versions from the beginning the order of the questions in Step 2 has been stressed. Asking "how" before "why" would waste time. In order to differentiate "what is its purpose" from "why is it necessary", the "what" question was made to apply almost exclusively to quality. In the first version original edition of Job Methods the importance of selling the new methods to operators so they would have a fair test was stressed. This original version, however, talked about suggestions rather than about improved methods.

It was specified in the first version that the trainer should get to the plant before Session III and discuss follow-up with the plant contact man. The review of Job Instruction in Session V appeared in this first version and still is a basic feature of J.M. The trainer's check sheet appearing in this first manual is the beginning of what has turned into a standard procedure for handling a Job Methods demonstration.

The December 1942 Edition

The first manual produced in Washington for nationwide distribution appeared in December 1942. This actually is the third edition of the Job Methods manual. It was in two-column form and used a simple code designating blackboard work. In this manual the phrase "proposed new method" was substituted for "suggestion." This edition contained additional material on the importance of getting the boss to give

credit to the operator who helped the supervisor with his improvement. He also focused attention on the supervisor as the man in the strategic position for the making of improvements.

The phrase "now available" was added to the heading of the card in line with the original intent that supervisors were to be encouraged to find better ways of doing jobs under present conditions, not to stir them up to look for ways out by the use of new machinery and other items which they would not be able to get under war conditions.

This version conceded that not all jobs could be improved, and specified that if a supervisor broke down two jobs without finding an improvement he could be certified.

The use of the large wall charts was eliminated and, instead, trainers put breakdowns on the board and handed out copies of the various forms related to the demonstration job. The card used with this version is shown as Exhibit 6.

Version 4

Early in 1943 the first two sessions only were revised. In this version the two-column form of steps and key points was abandoned and a continuous manual resembling Job Instruction substituted. The opening of the session was also put in the style established by Job Instruction. Much material was moved to the actual outlines from the reference section.

At this time new material was added to urge that the supervisor explain to the worker what he was doing and also to encourage him to work out his improvement with the operator. Trainers were directed to put on the board the breakdowns of the jobs which the members demonstrated.

A warning about the inadequacy of flash ideas was inserted. It was also specified at this time that any person who should receive credit should be mentioned on the written proposal. It was suggested that, near the end of Session I, in order to demonstrate that Job Methods was not a speed-up system, the trainer should act out a speed-up of the present method in order to show many mistakes would be made through merely hurrying.

Version 5

In April 1943 the next version was prepared. This is the first manual which gave detailed descriptions on the exact set-up for the demonstration job such as the use of waste baskets for tote boxes, etc. This manual was also the first one to give answers to the Step 2 questions in terms of the demonstration job. In this manual the idea that two breakdowns of present methods could be substituted for an improvement was deleted.

Jim Jones, the operator on the job, was also introduced at this time and the proposal sheet was revised to include a space for listing of person who helped to develop the proposal.

Version 6

This edition, prepared in May 1943, represented little change from the preceding one. The idea of having the trainer arrange for follow-up in a call on management preceding Session III was dropped.

Special emphasis was given to developing the new method with others, with three suggestions made - that the supervisor find out from his boss whether the job was worth working on, that he consult his fellow-supervisors for their experience, and that, of course, he work with the operator.

Version 7

The first printed Job Methods manual appeared in December 1943. (See Appendix.) The major changes were the moving of more material from the reference section into the outlines, and the spelling out of the outlines into very complete directions for the conducting of the whole session.

This same manual is still in use but it is supplemented by a "Trainer's Guide" and standard procedures for handling the improvements presented by supervisors in the 10-hour sessions. The first Job Methods sessions were frankly designed to develop a questioning attitude among supervisors with the result of getting from them their ideas which were close to the surface already. The detailed questioning of the breakdown has meant that it is possible to go far below the surface and really evolve ideas which never could have appeared on the basis of suggestions.

In making a Job Methods breakdown, it has been learned that, in order to really analyze the details, it is very helpful to look first at the verb which normally is the first word in the detail. For example, take a breakdown which has these two details: "open the drawer" and "pick up paper." The first step in the questioning process is to ask "why is it necessary." If you ask "why is it necessary" about "opening the drawer" the answer probably would be "in order to pick up the paper," but if you confine yourself to the verb and say "why is it necessary to open" you are immediately lead into considering the possibility that the drawer should have been open before the operation started. Similarly, when you begin to question "pick up the paper" if you look just at "pick up" there is probably a better chance that the possibility of getting the paper by some other means than "picking it up" will be considered.

JOB METHODS AND MANAGEMENT

It was realized that two points were particularly important:

1. Management must be shown that Job Methods was not an attempt to make professional engineers out of their supervisors. Job Methods will help supervisors to make many small improvements on the jobs they are closest to. TWI needed to stress this point to management, and trainers needed to steer supervisors toward the improvements that were closest to them, which could be made without wholesale re-design of machines or tools.
2. Management was going to have to show supervisors that they were interested in the making of improvements, otherwise too few supervisors would turn in any additional proposals after the 10-hour sessions was concluded. This would have to be done by first encouraging supervisors to make improvements, and then improving the handling of proposals that were made.

TWI has had to stress these points in its approach to management, and also has found it valuable to point out the by-products of Job Methods - the development of thinking among supervisors, the identification of supervisors who were thinking, and the increased attention given to safety as a result of the development of better methods.

Recommendations made to management at this time included the appointment of a line executive to clear and expedite proposals for improvements.

Results of the TWI Programs

As soon as the Job Instruction Program was launched plants began to say "this does reduce break-in time" and "we are having less scrap." Some such statements were concrete, others were a matter of impression.

When the Job Methods program came along it was something entirely different. The results were not a matter of impression - they were very concrete. Either supervisors made improvements or they didn't. If they made improvements, results were not only obtainable but apparent.

This difference - the fact that it is very easy to tell whether the Job Methods program is being used - was a major factor in a drive for known use and results of Job Instruction and Job Relations in order that results could move from the impression stage to what could be concretely measured.

The Spreading of the Program

Walter H. Gebhart, the Chairman of the Labor Training Committee of the American Supply and Machinery Manufacturers Association, early in Job Methods history gave one of the best statements on the program:

"Through the basic principle of Job Methods improvement, as set forth in the government's plan, is in itself not new, the method is new. Job Methods Training has to do with the breaking down of operational routines to their essentials, so that constructive analyses may be made, and from which practical results may be forthcoming. As has been said, there is nothing new in such a procedure. The difference lies, however, in the fact that JMT teaches men how to intelligently analyze, and how to convey the results of such analyses to management in a clear and concise manner, so that effective action may be taken. There are many who can recognize

better methods for improving production routines, but - and this is a big but - there are few men who know how to clearly describe, and set down, the suggestions for improvement. Job Methods Training has to do only with the proper methods necessary to aid in the carrying out of improved job setups and routines. There is no attempt to interfere with technical matters, nor to trespass upon the functions of the industrial manager, or the time study expert. Nor, is Job Methods Training, in any sense of the word, a 'speed-up' measure, as applied to the worker. Job Methods Training teaches job analyses, and how to intelligently present to management clear and understandable recommendations for improvement."