

## Case Study: Introducing Work Study at a Factory in the Transvaal

### What is work study?

Work study is the study of how work is done. It looks at the way work is organised. It gathers information about the work process. It tries to work out the most effective way of working. There are two methods of work study:

Method study looks at the way in which work is done or the arrangement of the different steps in one job. Method study records everything that affects the work process. These details are carefully studied. The work study engineer then suggests new ways of working that will be more "efficient".

Work measurement measures the time a worker takes to finish a job. The management tries to set standards by using this method. The work study engineer times the job with a stop watch. Then he rates the performance of the worker. A "brisk and businesslike" rate usually means 100% performance. Then he divides the job into elements and times each element. He writes down the performance rating for each element. At the end of this exercise he works out the standard time for the job. (Usually a rest allowance of about 14% is added to the 100% rating.)

The engineer can also measure work in a different way. He studies the job and breaks it into elements. He uses a set of standards to work out the time for each element. These standards have been worked out beforehand. Each kind of work is given a specific time. He adds them together to get the time for the job.

### What does the work study engineer do?

The work study engineer follows these steps:

1. identifies the work process, its beginning and end
2. writes down all the information about the job. This includes a chart showing the elements, the times of the

## - workstudy -

elements and how much time is wasted in each element.

(An "activity chart" is used when studying the work of a machine operator. This chart is used to find the best method of loading and unloading the machine to save time

3. examines the work process by using the charts and by looking at the worker doing the job
4. thinks of new methods that will shorten the work process
5. measures the time taken for the new method. If he thinks that the new method saves a lot of time he defines this method as the new work process.

The work study engineer uses a set of principles when he studies each job and assesses its performance. First he looks at the way the human body is used. Both hands must work together and they must rest at the same times. Arms must also work at the same time but in opposite direction. But arms and legs are harder to move than hands and body. So work should be designed to encourage hand and body movements. Also each movement should prepare the body for the next movement. There should be an easy rhythm in each. From swinging movements are easier than sharp, jerky movements

The engineer then looks at the workplace. All the necessary tools and materials should be kept at fixed work stations in definite positions. The worker then does not have to search for his tools before he can start to work. The lighting must be good enough so that the worker doesn't have to strain his eyes. The tools and equipment should be painted different colours so the worker can easily pick up the correct tool. Also the tools must be designed to help the worker do his job. The worker should not have to change position to use a tool.

The work study engineer's aim is to speed up production, rather than to make work more pleasant or interesting.

### Why does management use work study?

Work study is mainly used by employers to raise productivity (ie. to produce the same/or more with fewer workers).

Management can raise productivity in two ways:

- \* by investing in capital. Management buys new machinery

to produce goods more quickly  
\* by reducing the amount of work needed to produce a product and reducing the time when workers are not working.

Management usually prefers the second way of increasing productivity. This way means that management does not have to spend a lot of money on buying new equipment. With today's economic recession this is very important. Management has to pay high interest rates to borrow money to buy new equipment.

Work study can benefit management in other ways. The study often uncovers other problems in the work process which waste time. Work study increases management's knowledge of the work process - and therefore control over workers. It gives management a standard time for each job. Management expects every worker to keep to this standard and not produce less than standard. Work study can be applied to all workers like typists, boilermakers or loco drivers.

Management also uses work study to select the "right worker for the right job". The job is divided into its basic elements. The skill needed for each element is worked out. Management gives the more skilled work to skilled workers. Lower skilled work is done by less skilled labour at lower wages. The result is that management can reduce their overall labour costs.

In many cases work study is combined with incentive bonus schemes. Bonus schemes give workers higher wages if they produce more than the standard. The result is that workers work harder. Some managements then change the standard so that workers have to work even harder to produce above the standard. In this way management gets more work out of the workers for the same pay. Bonus schemes also divide workers - each worker has to produce more than his fellow worker.

In South Africa some large companies employ fulltime work study engineers. There are also many companies who do not have work study departments. With the economic recession they started to think of ways that they could increase productivity. The one thing they did was ask the National Pro-

- workstudy -

ductivity Institute (NPI) to do work studies in their work places. Most of these work studies look at ways to make people work faster and reduce the workforce. In a recession it is not worthwhile for management to produce more goods because no-one has money to buy them. Instead management needs to spend less money to produce the same goods. So they retrench some workers and reduce the money paid out on wages.

It is this problem that unions in South Africa have to come with. Work study means that workers have to work harder. also means that many workers will be retrenched.

### Work study in practice: a case study

The management of a food factory in the Transvaal was losing profits. Their competitors were doing better than they were. They asked the NPI to do a work study at their place and recommend ways of increasing the productivity of work and reducing the costs. The NPI went into the factory. They looked at each department. They timed the jobs in each department. They looked at ways of reorganising the work to make it quicker. They produced a detailed report for management. The report made the following suggestions:

- \* 20 out of 200 workers were not needed in the factory
- \* some of the remaining workers should be trained to do different work
- \* some of the workers will have to work harder
- \* some machines should be moved and used more effectively
- \* a bonus scheme should be introduced to make workers work harder.

The workers were confused by the work study. No-one told them what it was about. After the study was completed, the management presented the NPI report to the union. The factory committee met and discussed the report. They realised two important things: the recommendations meant that some workers would be retrenched and that the other workers would have to work much harder. The workers were not satisfied with these recommendations.

At this stage the workers contacted the Technical Advice

Group (TAG) to discuss the report. Together with TAG and their union the workers were able to expose several problems with the study:

- \* the factory was operating at a slower speed when the NPI did their study. So the NPI suggestions of increasing the rate of work and using less workers was unrealistic
- \* increasing the rate of work will make work more dangerous. Workers will work faster and not worry about safety. There will be more accidents
- \* increasing the workload means that workers will get tired and experience more stress. This means that their health will be badly affected
- \* the NPI study did not consider absenteeism. If workers are absent from work there will not be enough workers to do the job
- \* if the demand for the factory's products increased, there will not be enough workers to produce more goods
- \* the company has a duty to prevent retrenchment of its workers. It must look for other solutions to its problems of high costs like short-time and no overtime.

The workers went to negotiate the NPI recommendations with management. They used all these arguments and were able to delay the implementation of the recommendations. But the management would not listen to the union. They did not really care what the workers thought. They did not ask the union to participate in the study until after it was completed. The management went ahead and retrenched 20 workers. The rest of the workers are now working harder and their wages have not been increased. This is the situation that many workers are facing and will have to face in the future. The economic situation is not improving and some industries have been very badly affected. Managements are looking for ways to reduce their costs. The first thing they do is retrench workers and reorganise the work process to speed up production. Work study is the powerful tool that employers use to do this. Workers should understand what work study is and how it works. Only then can workers take action to stop management using it to the disadvantage of workers.

(Technical Advice Group, Johannesburg, January 1985)