OUR JOBS

RANK
PRECISION INDUSTRIES
LTD.

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OUR JOBS

THE NEED

Our job is making Cine Cameras and Projectors with some other things. There are several other firms who are in just the same business here, in Europe, and in America. If these other people are able to make a better product and sell it for less, then customers will buy that product and not ours. Then we are out of work.

So if we want to have good jobs which give us real money to live well, we have got to make a product which is better and costs less than that of our competitors. Then the customers will come to us and we shall be in the money.

As well as this, costs have been going up, and to offset this we must manufacture more efficiently and at the same time maintain the high quality of our product. Only by so doing can we hope to sell our products and offer security to all who work here.

In an attempt to achieve this need we are tackling the problem from three angles:—

1. Cost Reduction.
2. Quality Control.
3. Work Study.

We hope that this booklet will answer most of your questions on these subjects. If there are any points which are not covered please raise them with your Supervisor.

If you are interested in the size of your pay packet at the end of the week, and at the end of weeks in the future, read this booklet NOW.

COST REDUCTION

The Factory Suggestion Scheme provides opportunities for everybody to present suggestions which might bring about a reduction in waste or a saving of costs. Cash awards are regularly paid to the sponsors of successful suggestions.

In various Department there are people who, by the very nature of their work, find that they are continually discovering new methods and ways of reducing costs.

In order to summarize these suggestions and to investigate all aspects of cost reduction on their own initiative, the Cost Reduction Department was formed. A small team is thus available who can immediately study any problem or follow up any suggestion objectively without being restricted by any departmental control or influences.

What can their work cover? Well, here are some examples:—

Investigating new types of plant and machine tools ;

Investigating new methods of machining and finishing ;

Exploring the possibilities of manufacturing ourselves items which have previously been purchased outside.

What results from their work? Work is made easier, time or material is saved, better service is given, working conditions are improved, better methods or systems are involved, designs are improved, safety is greater, and the security of all is strengthened. In fact nothing but good can result.

QUALITY CONTROL

Whatever your work may be, the component you are producing or the service that you are giving should follow a set plan or standard that has been laid down either by the Planning Engineers or the Designers or by your own Department in order that your work may be as effective as possible.

The job of the Quality Control Department is to control the quality of our products to an agreed standard in the most economical way possible. How is this achieved? Well, first of all the Inspectors on the Shop Floors are given detailed information concerning what they have to look for, and they then record what they find, good or bad, onto special charts. These charts as well as providing a visible record of what is happening,

also provide valuable data to be used on future production.

If an Inspector rejects any component it becomes either "scrap" or capable of "salvage". This decision is taken by Quality Control, and weekly anayses are made of all jobs which have a scrap percentage of over 10%. If parts in the Assembly Shops are found incorrect all floor and store stocks are recalled and sorted, the good parts being fed back to the Shop and the faulty parts being either scrapped or salvaged. If they can be salvaged, the Planning Department agree on a process for correction.

If the incorrect parts have arisen from previous work carried out in the factory, then Quality Control notify the Works Supervision and Inspection in the Shop concerned and a rubber stamp mark is placed on the Bonus Cards of subsequent batches, so that before they are proceeded with the Operator, the Setter and the Inspector know what special aspects must be watched. In fact every attempt is made to ensure that what happens once does not happen again.

WORK STUDY

WHAT IS WORK STUDY?

This is really just what it says, and as in all studying, it is a matter of seeing what is done and measuring it. The "measuring" part gets called

"Time Study", and the "what is done" part, "Motion Study". The two parts go together so that in doing a time study, the engineer must look at the motion side of it as well, and vice versa.

A MOTION STUDY

is therefore the finding out of ways of doing a job well, with the minimum expenditure of effort, and without rising the price.

A TIME STUDY

is therefore the measurement of the time taken to do a job, taking into consideration differences in performance between operators, and the time needed for periods of rest and other factors which enter into the job.

AN OPERATIONAL PROCESS

When the right way of doing a job has been agreed, full details of the "Operation Process", as it is called, are set out by the Production Engineering Department. This is available in your department for inspection at any time before, during, or after a job, and is a necessary step before the job is time-studied.

WHAT ARE THE ADVANTAGES OF TIME STUDY?

Firstly by fixing rates or operation times, it enables us to determine how long it takes to make

our product and therefore helps in determining quickly and accurately its selling price, a fact which will enable us to be more competitive in world markets.

Secondly – It enables us to determine what is a fair day's work on a certain job, and therefore helps us to place the job on an incentive basis so that an opportunity is given to earn extra pay for extra effort.

Thirdly – It tells us how many men and machines we will need to produce a given quantity, and thus enables us to keep a constant watch on the security of all employees.

HOW IS A TIME STUDY MADE?

Selection. If it is agreed to make a time study of your job, the first step is to ensure that the job has been planned in the most efficient way. We all know that there are hard and easy ways to every job, and only when he is sure that you are not doing unnecessary or effort wasting work, will the Time Study Engineer start to time your job. This is all to the good, because it means that whoever does the job there will be no variation in the method used, and therefore everyone will start with the same standard and the same opportunity to earn bonus.

Recording. The second step is for the Time Study Engineer to break the job down into very small operations and movements (which are called

elements), and timing each element separately with a stop watch. There are several reasons why this is necessary:—

1. It enables an accurate assessment to be made of the rate of performance of the operator.
2. It helps to produce a detailed method of production which can be used for example in teaching someone else the job later on.

In a drilling operation for example, the following elements might be determined and timed:—

1. Picking up and blowing off the part and fixture.
2. Placing the part in the fixture.
3. Drilling the part.
4. Removing the part from the fixture.
5. Inspection and placing the part aside.

Rating. When you are being timed on a job, the Time Study Engineer will only be watching you for a short period, whereas you may have to perform the job eventually for quite a long period. Also the speed at which you are working may be different to that at which your neighbouring operator will be working or would work if he was doing your job. And on top of this during the course of the day you will be away from your job for personal needs, washing time, etc. As you get towards the end of the day, you

will probably not be working quite as fast as you were to start with, and at various times during the day you might drop or have to replace your tools, or raise a query with the Inspection or your Supervisor.

All these factors are taken into consideration when a "standard time" is determined, and special allowances are therefore given which are added to the initial time recorded by the stop watch to give us standard time. What do these allowances mean to you? Well, let us examine one hour of your working day and see if we can't find out.

To start with an allowance of 17% is given to cover normal fatigue throughout the day, personal time away from the job, tea breaks and miscellaneous delays. Now 17% of 60 minutes is 9 minutes, so in reality you are being accredited with one hour's work for 51 minutes effort. On top of this, it is the Company's policy to pay a 45% bonus to every employee who works at his job with an average amount of effort. Now 45% of 60 minutes is 27 minutes: so adding this allowance onto our original 60 minutes, we get the result that a total allowance of 87 minutes is given for 54 minutes work. This is an increase of 70%!

If we revert to the example of the drilling operation described above, the calculation might be as follows:—

(a)	"Floor-to-Floor Time" (i.e. Time recorded on stop watch) - - -	1.00 mins.
(b)	"Work Value" (i.e. Effort Rating—in this case 45%) -	.45 mins.
(c)	"Personal Allowances" (17% of (a) plus (b)) -	.25 mins.
(d)	"Standard Time" Allowed -	1.70 mins.

If there are a thousand parts to be drilled this means that the operator, upon completion of the job, will be accredited with 1700 mins. or 28.4 hours of work. If he has completed the job in less than this time allowed the time saved will be paid at the appropriate bonus rates of pay. If the operator completed the job at the speed recorded by the Time Study Engineer (i.e. at 1 min. each) he would complete the 1000 in 1000 mins. or 16.7 hours and earn a bonus of 11.7 hours or 70%.

Where a group bonus system is in operation, the basic calculations for standard times are exactly the same. The total of the standard times allowed give a "group allowance" and the total amount of time taken by all the operators is deducted from this figure to give the group bonus earned. This then has to be divided proportionately among all the operators according to how long each one has spent on doing group work.

You will see from this that standard times are worked out by the fairest possible means. The

amount of bonus which you can earn is therefore in direct relation to the effort which you put into the job.

PAYMENT OF BONUS EARNINGS

As soon as you have completed the job set you, and your "Operator's Work Card" has been passed for quality by the Inspection Department, it is forwarded to the Work Study Department for bonus calculation. After calculation it then proceeds to the Wages Department for payment, and the amounts are entered on the reverse side of your weekly time card. This shows you the Part Number of the job, the amount of time you took in completing it, and the amount of time you saved or earned at your bonus rate of pay. For example, the drilling operation referred to above might appear as:—

Job No.	*Time Taken*	*Bonus Earned*
150585 Op. 120	16.7	11.7

POINTS TO WATCH

1. When you book your quantity of work completed on your Work Card, make sure that you have entered the right amount. A misprint (such as 5050 instead of 5500) can cause confusion and delay in calculating you true bonus earnings.
2. If you are kept waiting for work in circumstances beyond your control, you must see that the waiting time is booked by immediately clocking onto a white card. If you do not, you will receive no compensation and your bonus earnings will be reduced. If you are in doubt your Supervisor will advise you on this matter.
3. If you have to work on a job which has not been time studied, you will be paid at a rate of 45% bonus. As soon as a standard time is agreed upon, you will immediately be clocked onto that time, and your bonus earnings will depend upon your own effort.
4. Remember that payment will only be made for work passed by Inspection as "correct in quality". The standard times allowed are designed to enable you to produce both a good quantity and quality of work, but sacrificing quality for speed will not help you or us.

OUR AIMS IN LIFE

—To provide a good living for ourselves and our families.
—To get satisfaction out of our work, with security.
—To be able to have more of the luxuries of life.

We are all working towards these goals: Cost Reduction, Quality Control and Work Study are three aspects which will help us to achieve them.

The foregoing procedures and examples in this booklet describe, very briefly, to some extent the systems used within our Factory.

It must be understood that the Company is not legally bound in the issue of this booklet, to abide by any of the information or examples portrayed which are liable to change due to National Agreements and other reasons.

Should any parts of this booklet not be entirely clear to you or should you have difficulties which are not explained by this booklet, do not hesitate to raise them with your Supervisor. Sometimes, such matters take a little time to investigate fully, but you may be sure that it is our wish to deal with all matters as promptly as possible.