

'MR. ENGINEER AT CORAH'

by Niki Tate

'It helps you to take a methodical approach of solving problems by looking at methods, problems and then pace; it enables you to break down the problems into their constituent components and analyze and correct the underlying cause rather than just deal with the symptoms'.

'Its excellent - one of the best thought out pieces of equipment I have ever seen'.

'If you are manufacturing garments or in any similar type of industry you would be foolish not to use it, it sells itself, it pays for itself, and its good - a great asset'.

These are just some of the comments made by the management at Corah PLC when I asked them what they thought of Mr. Engineer during a visit last week to see how they are getting on with the system after a year of use. The following summarizes interviews with the management services manager, the industrial engineers, one of the factory managers and his manageress.

How long exactly have you had Mr. Engineer?

We took a two work station system back in October 1990 and carried out extensive trials on it. We were so convinced of its potential that we took an eight work station system for our Scunthorpe factory in January and another for Oakham in February. These are our two biggest factories where our work study analysts are based, but they have used it now in all our factories, with equal success.

How often do you use it?

Everyday. We try and keep both systems constantly in use. The question is really where should we use it to its best advantage as there are so many areas it can help in.

What do you use it for?

We use it wherever we have problems with productivity and output and although we obviously use the system to help individuals, we find it helps to concentrate on operators within one particular section at a time, as the benefits have a ripple effect all down the line.

It is up to each of the factory managers to decide their greatest problem of the week; whether it is rate disputes, a drop in performance due to a style change, falling behind production targets that are likely to affect delivery dates, helping bring up new trainers, customer demands, etc.

Sometimes the operators themselves ask if they can use Mr. Engineer because they want to improve their output and earn more. Whenever we can we like to encourage this as the system is there to help the girls as much as management.

How do you find it helps?

It carries out all day production studies without the need for a workstudy engineer to be present whilst the girl is working. The information that it collects and analyses is in a different dimension that can be collected manually within any reasonable time scale; it is in far more depth and analyzed in far greater detail. For example, we put the system on one operator the other day who suddenly seemed to have difficulty earning her money and it was unclear why. The system immediately highlighted that the RPM of the machine was low and inconsistent. We found that the belt had become loose and was slipping.

It provides a comparison of the method that the operator is actually using compared to the specified method. The method, machine speed and number of stitches in the seam are the first things that needs to be corrected. It details all the problems that are occurring during the day identifying where these need to be rectified. Once the methods are standardized and the problems corrected, we can help pace the girl, gradually increasing her performance by a sustainable 5% to 10% per day whilst not allowing her quality to suffer. Normally quality improves as the cause affecting bad quality are eliminated. It provides a double benefit as it is there to help the girls whilst at the same time increasing production.

It is not a panacea for all ills but it highlights the problems; it is then up to management to introduce the solutions. If an experienced operator is not making the grade we put the system in for a few days to find out why, then we rectify the situation. There is no other tool like it.

What are the main benefits that Mr. Engineer provides to your company and to individuals?

As far as the company is concerned, increase in performance and output. We had a very complicated lingerie style where all the operators were struggling and the average line efficiency had dropped to 70%. We put Mr. Engineer into the section and the overall efficiency quickly increased to 92%.

The individual operators become far more aware of what they are doing throughout the day, of methods, and how things are done. They quickly learn to identify for themselves where and why they are losing money and the effects of things like extended relaxation allowances. They become much more confident, training time is reduced and they can earn more.

In terms of the industrial engineers, it provides them with the equivalent of eight extra assistants each, all collecting and analyzing data about what they should be doing - i.e. concentrating on the solutions.

What do you most like about the system?

This information that it can give you detailing what is happening every second of the day. It can feed back in Real Time on the screen the situation with each of the operators: what is happening, what problems are occurring. This means that you do not have until after the study analysis is complete to start correction these. You are not limited to finding the effects of just a set selection of problems but can vary the problems under investigation for every study allowing you to go into whatever depth of information you need to.

The operators feed in their own information so they know that the information is correct. They carry out their own information so they know that the information is correct. They carry out their own studies and their own improvement.

What do you dislike about the system?

Only little things. It takes time to set up a work station and check that everything is working and recording correctly. The operators usually have the system for a week or two each, so we tend to move it on a Friday afternoon when the operators have gone home.

To make the optimum use of Mr. Engineer we would really like to see every machine permanently linked to the system giving us total flexibility of how many girls can be studied at any one time, allowing us to help any girl on any operation, anywhere in the factory. With the equipment that we have got we are limited to only being able to study up to eight operators t once, and the girls have to be positioned within 50 feet of each other, so normally they are on the same section. The eight operators that you may most want to help could be scattered throughout the factory.

Do you feel the system is easy to use?

Yes. The operators are given the first day to get used to using the equipment and to remember to record their problems and when they have completed a cycle. The supervisors quickly learn how to switch it on,, pause a study, etc. The software is reasonably self explanatory especially if you have used a computer before, and you are automatically provided with four days training when the system is first installed. It obviously helps if you have trained workstudy engineers who can look at the results and immediately understand all the implications the information is telling them. You do need to know what a standard minute is, understand performance, efficiency, allowances, etc. It is a management and supervisory tool so the supervisors have to learn how to understand the information.

What are the major successes that have resulted in your factory from the use of the system?

Definitely increased output, increased productivity. Every one of the studies we have carried out has resulted in improvements. Obviously you do not get improvements with every girl and the amount of improvement fluctuates due to the learning curve between different styles, operations and operators, but we normally would expect to get between 10% to 30% per study. Being conservative we would say we are achieving a 15% sustained improvement after using Mr. Engineer.

We had a six week trial order for a Lycra body suit and two months later we received the main order. We had problems and were likely to miss delivery dates. Rather than putting in extra staff and working overtime, we put Mr. Engineer into the section and raised efficiency from 60% to 89% within nine days.

Is this performance increase sustained once you take the girls off the study?

We only leave the girls on the system for between one to two weeks. Any more than that and it begins to loose its impact, and it is more beneficial elsewhere.

For the first day or two when the system is removed the girls may drop back about 5% as they have not got the pacing aid in front of them, but they soon pick up to what they were achieving with the system. Sometimes it helps to give them two hourly target sheets for the first few days just to give them some guidance and it is important to follow up the girls and not just ignore them once they are off the system.

When we are using the system to build up pace, we use it to build the operator up steadily at about 5% a day. If she cannot achieve this we go back to the problems to see what is happening. We agree the targets with the operator and find it is much better to build her up gradually so she can sustain the rate rather than making her race against the clock all the time. It is not there to 'push' the girl but to help her.

Have you found that training time can be reduced using the system, and if so, by what extent?

Although this system is obviously ideally suited to helping trainees, so far we have not used Mr. Engineer much in this area as we always have more pressing production needs. Where we have, we have found excellent results and we would expect that a six weeks training period could be cut to four or five. We put the system onto two trainees, one averaging 30 performance and one 25; within nine days we had built them both up to average 67 performance over the day.

Have you found that the time it takes to build operators up to performance at style change can be reduced using the system, and if so, to what extent?

Whenever we change styles the operators natural rhythm is disrupted whilst she learns and settles down to the new job. Mr. Engineer assists the operator to settle down to the new rhythm. We have not got many quantified results on this because we tend to use the system on the problem styles rather than all styles, but it probably speeds up the settling down period by a week or two. We did have one new style that we were running two weeks behind schedule with, but with the help of the system we cleared the work out of the factory in half the expected time. That was while we were still very new to the system and only using two key pads.

What do the operators think of the system?

Obviously not all the operators like it and the system is not going to benefit everyone. Some operators may feel that they have something to hide and you need to tread carefully with the older operators who have been doing the job for years as they may feel it is infringing on their ability. Some can be a little scared of it and feel if its a 'Big Brother' watching over them until they get used to it. You have to introduce it to the girls carefully and work with them to gain their acceptance, just as you do with any new system.

Once the operators have used it and they begin to get the benefits, their attitude changes and now, in certain circumstances, the girls ask for it themselves. We were using the system to carry out an activity sampling exercise on whole team to see where the section could be improved and one particularly fast operator got quite upset when it was taken away from her as she had increased her own performance from 120 to 130 and had never earned so much.

Where the system has been on four operators on the same job at the same time they have created competition between themselves. The performance of each operator is constantly fed back to her in real time through an LED screen on her terminal.

About 90% of the operators like the system now and we have never had any industrial problems or anti union reaction to it. The girls prefer it to the old type of production study where they are stood over and watched all day.

Would you recommend its use in other factories?

Yes, without reservation and they do not need to be sewing factories. It would be useful in any industry where people are employed on repetitive jobs. We have certainly used it to good effect in the packing area.

Are there any particular types of factory for which you feel it is most suited?

Not really. It would be equally useful in a high style situation as it would on bulk production. We have used it in all five of our sewing units and had benefits in each.

Mr. Engineer is a patented revolutionary management tool that has been on the market since 1986. It has been designed to optimize the potential of a companies workforce and machinery, thus improving productivity and profitability. It is a software product that collects data directly from the workstation, analyzes the method being used and the problems that are occurring in particular operations, and highlights why performance is not being achieved. Once the method has been corrected and the problems solved, the system can be used to train the operator to pace herself evenly during the day and motivate her to increase performance.

The hardware consists of a PC, VDU and printer, together with small operator terminals and keypads situated at the machine. Reflective tape is attached to the flywheel and an infrared light and sensor are used to monitor the machine use. All occurrences are time stamped recording the second they happen.

For more information on Mr. Engineer contact: Mr. Engineer (UK) Ltd., Eton House, Station Road, Guiseley, West Yorkshire, LS20 8BX. Telephone 0943-870025.