

How can workstudy improve productivity

A case study

We investigated an existing line which had been working on the order for approximately 10 days, it was a small order and had several days left to run. The line was set as follows:

There were total 45 operators on the line and including the helpers the total Manpower was 62 people made up as follows:

- 2 - Supervisors
- 2 -Final checkers
- 2- Roving QC
- 45- Machinists
- 9 - Helpers
- 2- Inline checkers

There are 58 direct operators (Excluding Supervisors and Roving Q/C people) X 8 X60= 27840 minutes The best previous day's production was claimed to be 333 pcs. Therefore it is taking $27840/333 = 83.6$ mins per garment. However only 133 pcs were examined of which 15 were repairs therefore the final output was equivalent to 209.3 mins per piece

Starting times

This factory is supposed to start at 9 AM but everyday it starts at 9.15, the discipline is very poor and no senior management staff are available on the factory floor at starting time. The organisation of the starting times is bad, buses come late very often and there seems to be no urgency to start on time.

58 people loosing 15 mins every morning means 14.5 hrs lost in a day and 47 man days lost every month.

Space between the operators

Operators hardly have space to sit; distance between some machines is less than 14" with their back against the motor of the machine behind them, in the heat of the factory in the summer months these conditions must be considered cruel and unacceptable.

This spacing makes it possible to put 46 machines on this line. The ideal distance should be 22 to 24" from the back of one machine to the front of the next one and under these circumstances it is Possible to fit only 38 people onto the line

As you can see from these pictures the space is totally inadequate



Helpers

There were a total 9 helpers working outside the line, doing a lot of matching and unnecessary work. These operations were eliminated, we did not allow helpers to be “Outside” the line, all of the operations had to be placed in the line and each person is given a sequential workplace.



WIP

WIP level on the factory floor is too low, but there is plenty of work waiting at the helping tables, showing that the line is not balanced properly. All the WIP that is there is hidden under the tables and is not visible to anyone. Garments are not moving in bundles, each piece gets passed to the next operator as it is completed, there is therefore no control of the work passing through the line.



Pace of operators

Most of the operators are carrying big scissors which are totally unsuitable for the job. This suggests that they need to trim chunks of fabric and cutting is not accurate. The pace of the operators is slow and all machinists have jerky motions instead of smooth and steady bursts.

The stamping on the garment is such that the operators are have to remove the stickers on the panels which is totally unnecessary and can be easily rectified in the cutting room.

Unnecessary operations

Cuff pattern is wrong has not been corrected so each cuff has to be trimmed this involves an extra person.



The Frill is graded but all sizes have been cut as one size this means that every frill has to be trimmed. Gathering and attaching of the frill could be done simultaneously using Top and Bottom feed machine. Baby overlock 4 sides are being done whereas only 3 sides are needed. This operation could be eliminated by using a folder, the operation is being done by 2 helpers.

Summary

Once these problems are identified it is quite a simple matter to re-organise the line, and this was done with the result that only 40 people were required to perform the work necessary to complete the garments with no loss in output

Original People on line	Revised number	Savings
58	40	31%

This was the first time that this sort of approach was used in this factory and it took some time to get the concepts settled down, but they have now an established workstudy department and this sort of approach is maintained for all new orders.

It should be noted by the readers that this factory produces small orders –2000 to 5000 pieces on average of course the same principles can be adopted in factories with larger orders with the added benefit that the improvements made would last longer before the next style goes onto the line.

