

THE USE OF ACTIVITY SAMPLING IN THE STUDY OF LOOM STOPPAGES AT THE VEYANGODA MILLS (N. T. C.)

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This paper is the first part of a complete study of the weaving shed of the National Textile Corporation, Veyangoda Mills undertaken at the request of the Mills Manager and financed by the National Science Council. The Weaving Shed of the Veyangoda Mills has 504 semi-automatic powerlooms. 64 machines are grouped together and are assigned to four weavers with one overlooker and one operator. The looms operate continuously 24 hours a day for a few weeks at a time. The looms stop due to a number of reasons at random intervals. When these reasons such as warp or weft break, electrical or mechanical faults etc. occur the weaver comes to that loom and attends to the fault.

The first part of the study was to establish the correct percentages of stoppages due to various faults. This is used in the second part of the study to obtain the machine interference, cost of down time and the optimum number of machines per weaver for the minimum cost of production in the weaving shed. Activity sampling is a technique in which a large number of instantaneous observations are made over a period of time of a group of machines, processes or workers. Each observation recorded for a particular activity or delay is a measure of the percentage of time during which the activity or delay occurs.

Observations were made during all three shifts of work and altogether about 36,000 observations were made over a period of about one month by 6 observers. The percentage stoppages were calculated to an accuracy of $\pm 2\%$ with 95% confidence. The results of the study, apart from being input data for the second part, provided important and valuable guidelines to the management for necessary corrective action.

