



ERGONOMICAL APPROACH OF DRILLING WORKSTATION - A REVIEW

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ABSTRACT

This paper describes an ergonomical approach of drilling workstation. It is often argued from an economic and ergonomic point of view that ergonomic considerations should be integrated into the planning processes, but it is seldom the case in practice. Tools for establishing this integration are available. Therefore, the organizational preconditions should be addressed. This implies a change of the understanding of the role of the people possessing the ergonomic knowledge in and affiliated to the enterprise from 'expert' to 'organizational'. This implies that the ergonomic issues are primarily introduced by problems with or may be even complaints about the actual working conditions, whereas designer initiated, preventive initiatives based on modeling or on other sorts of test methods are absent.

KEYWORD: Ergonomic, Preconditions, Preventive, Tractor axle drilling, Working conditions.

1.1 INTRODUCTION

This is an Ergonomical Approach of Drilling Workstation for the process of tractor axle drilling workstation. Comfort is necessary for

any operator in industry while working on machine. This type of proper ergonomical approach is used for improving the performance of operator towards their work by suggesting proper methods to get better results. The process of axle drilling at industry in Sevagram MIDC at Wardha is a man-machine system. The nature of ergonomics performs a unique role in protecting human health and preventing health risks. It is clear that improvements in productivity indices in the systems can be seen, resulting in better work conditions for people employed in production and services systems. A performance comparison with the base year indicates lower costs, increased revenue and more work accomplished with a smaller work force.

1.2 TRACTOR AXEL DRILLING PROCESS

Enterprise selected for study is a medium scale industry in Sevagram MIDC at Wardha in Maharashtra. The industry is involved in axle drilling for various types of tractors. Drilling process of axle is targeted for Mahindra tractor as it is having the highest production rate as its requirement. The following fig. shows the block diagram of tractor axle making process.

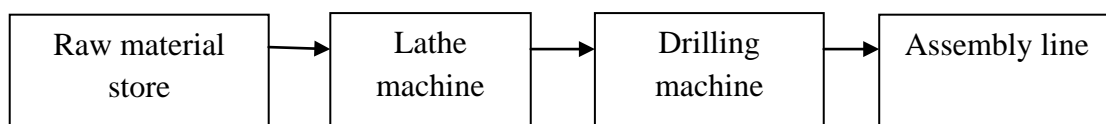


Fig1: Block Diagram of Tractor Axle Machining Process

1.3 LITERATURE REVIEW

It has presented that United Auto Workers (UAW) is the primary labor union that

represents Ford hourly employees in the United States, Bradley S. Joseph (2003) et al, It has presented that the data that were found

demonstrated financial benefits from the application of ergonomics in a number of areas improvements to operator performance, David Beevis(2003) et al, It has presented that in addition to the efforts in the area of compliance, the late 1980s and early 1990s saw OSHA involved in the development of ergonomics assistance materials, Gary A. Mirka (2005) et al, It has presented that the OHS consultant as a 'political reflective navigator' in technological change processes, W. Patrick Neumann (2009) et al, It has presented that a comprehensive office ergonomics intervention designed to improve both musculoskeletal and visual health, work performance, and productivity, Cammie Chaumont Menéndez(2012) et al, It has presented that in order to gather valid user requirements, a stakeholder analysis is important to help identify the main categories of user for a potential system, Martin C. Maguire (2013) et al, It has presented that Ergonomics/human factors is, above anything else, a systems discipline and profession, applying a systems philosophy and systems approaches, John R. Wilson (2014) et al, It has presented that The E/HF discipline seems to have reached a time in its development for introspection and a critical review of its contributions and challenges, Editorial(2014) et al, It has presented that the interaction between social and economic factors is well documented hence the science of socio-economics, Tahseen Jafry (2000) et al, It has presented that it is often argued from an economic and ergonomic point of view that ergonomic considerations should be integrated into the planning processes, but it is seldom the case in practice, Per Langaa Jensen(2002) et al,

1.4 AIMS &OBJECTIVES

1. To reduce the stresses in human body occurring while operating drilling machine.
2. To provide a safe and productive workplace to the worker.

3. To make the assessment of ergonomical factors..
4. To more work accomplish by smaller work force.
5. To protecting workers health and preventing health risk.

1.5 MATERIALS & METHODS

The goal of intervention and the application of ergonomic knowledge is to achieve a logical and suitable relation between staff, machines and the organization of work. In these conditions staff can achieve maximum productivity. Ergonomics studies staff psychology and physiology at work which is a complicated system of humans, machines and work. Most ergonomic analysis of human activities originates from work and time which establishes the basis of production engineering; as a result it is natural to analyze and consider ergonomics and productivity together. Improving productivity is a simple method of encouraging management to set aside a budget to cover the costs of programming and applying ergonomics intervention.

1.6 METHODOLOGY

Ergonomic interventions should be considered as an improvement process in all aspects. Since changes are continuously related to all organizational aspects, it is better to provide an intervention process that can improve all kinds of problems due to changes in technology, organization and environmental factors (internal and external). By considering the principle and subjects mentioned above, a theory pattern is delivered for guiding ergonomic interventions processes and is executed in a training set. In this model, performance evaluation and intervention process is based on four principles: management support and logistics, knowledge support, evaluation and staff participation, encouraging and defining. An intervention process by training managers, staff and members of work groups is established and a feedback system is provided and designed with the help of these four principles.

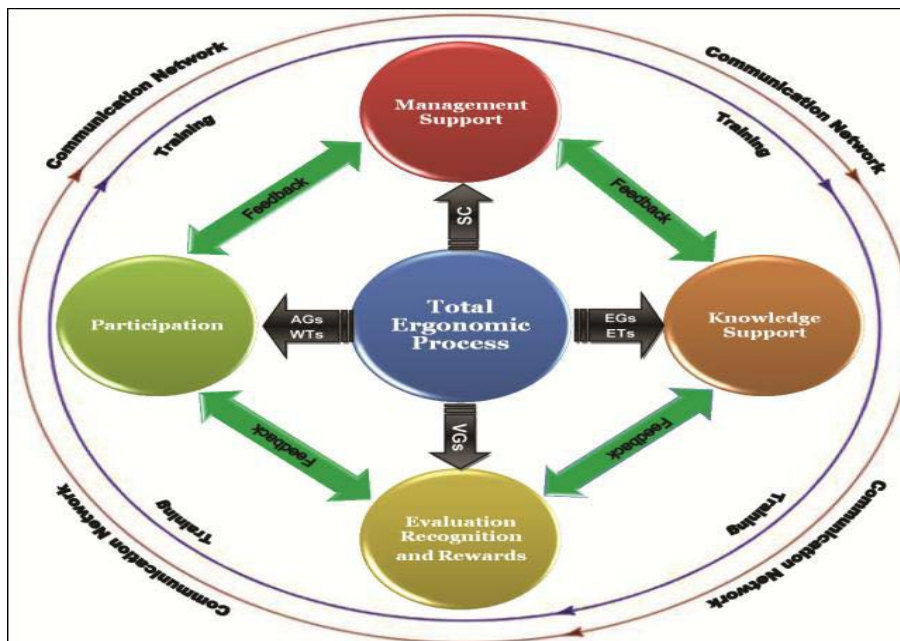


Figure.2: Total ergonomics evaluation and intervention process model

1.7 DISCUSSION

By the above methodology we studied about the Ergonomical Approach of Drilling Workstation, which carried out in the Asha Industry Sevagram MIDC Wardha.

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