

## **Development of an Integrated Method for Analyzing Ergonomic Compliance of a Workstation**

**I. K. Chopde**

**Mechanical Engineering Department  
Visveswaraya National Institute of Technology  
Nagpur, India**

**P. K. Joshi**

**NaP/PJ-ERG, BOSCH Ltd, MIDC, Satpur  
Nashik, India**

**Y. M. Puri**

**Mechanical Engineering Department  
Visveswaraya National Institute of Technology  
Nagpur, India**

**Dinesh V Suryawanshi**

**Industrial Engineering Department  
Visveswaraya National Institute of Technology  
Nagpur, India**

### **Abstract**

Ergonomics, as an applied science, has a significant role to play in improving working conditions and productivity in Industrially Developing Countries (IDCs). Ergonomists practicing in IDCs frequently identify suboptimal working environments that place the operator at high risk. There is a need for input from trained personnel in improving many IDC working environments where poor work practice and low productivity are commonplace. Manual Materials Handling (MMH) tasks continue to predominate in IDCs and universally these have long been recognized as a major contributor to the occurrence of health complaints. Heavy physical demands place the human operator under undue physical stress and increase the likelihood of the onset of work-related musculoskeletal disorders (WMSDs). This in turn results in an increase in suffering of the operator, and cost to the company concerned. There exists an urgent need to investigate the incompatibility between the human operator and the physically demanding tasks so many workers in developing areas are required to do. The focus of the present paper was specifically on manual activities of workers in the engineering industry. The development of integrative method more focuses on MMH and the workplace compliance in an industry. During ergonomical audit of a workstation, checklist used to evaluate the workplace, while the developed tool (software) used to evaluate manual ongoing activity at that workstation.

### **Keywords**

Ergonomics, NIOSH, EN 1005-2, ISO 11228-1, ISO 11228-2, OCRA Index.