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# Real Time Safety Assessment Based on Hira for Portable and Overhanging Lifting Machine-Construction Site

**Dr. Shasank Shekhar Soni[1] and Mr. Pritish Prakash Parida[2]**
Associate Professor[1], PG Scholar[2]
Health Safety & Environment Engineering, Shri Rawatpura Sarkar University, Raipur, India

**Abstract:** *Cranes are an essential machine for many industries. Due to the fact that it is so large, and it moves such heavy gadget, it can also be very dangerous. Most cranes manage to move at the base in order to put the load where it needs to go. When this occurs, anyone who is in the area surrounding the crane could get trapped in a pinch point and get crushed. The crane driver typically does not have visibility to the area directly on every side the machine, which produces this safety hazard even more serious. Unfortunately, when large numbers of cranes have been dispatched to a Industrial site, the hazard exposure also increases for workers who work with, around or under these cranes. As per OSHA, 85% of all cranes unsettle and structural failures can be allocate to exceeding the crane's operational capacity. When a crane is overloaded, it is subject to structural stresses that may cause irreparable damage. Swinging or unexpected dropping of the load, using defective components, hoisting a load far away capacity, pull a load, and side-loading a boom can all cause overloading. The only way to eliminate the accidents is Identify the Hazards to assess the associated controls with the Material Lifting machinery with their operations to bring the hazard to tolerable level. As the part of this dissertation hazard recognition will carried out with the help of checklist and different mathematical methodology with respect to various lifting machines and their control measures will also be given in this work, improved safe work conditions in industry for using this engineering tool this is the objective of this project work and to reduce the number of accidents. The main objective of this study was to examine the various hazards associated with using cranes will help of checklist to identify the risks in the workplace.*

**Keywords:** Hazard Identification and Risk Assessment (HIRA), Lifting Machinery, Hazard and Risk calculation with Check list Methodology

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