The word ergonomics derived from the Greek word ‘Ergon’ means work and ‘Nomos’ means laws. It can be defined as ‘science, technology and art of Man at Work’ (Sen, 1984). It is an interdisciplinary subject and is closely allied with human physiology, psychology, functional anatomy, occupational hygiene, industrial design, cybernetics, information science, operation-research and with other disciplines of modern research trends. The basic tasks of ergonomics are to study the system optimization of man-machine-environment relationship in the process of work or during preparatory operations. It tries to raise the efficiency and quality of human working life. In the new millennium, technological ventures have strengthened its roots in the industrial sector with computerized automation procedures claiming the maximum share of this advancement.

The effect of health and safety on productivity cannot be properly discussed without touching on the concept of ergonomics (Singleton, 1972). This term covers a field, which in recent years has expanded to an extraordinary degree. Ergonomics measure may, however, be defined as those that go beyond the mere protection of worker’s physical integrity and aim at ensuring his well-being through the attainment of optimal working condition and by the most suitable use of his physical characteristics and physiological capabilities.

Ergonomics is thus the study of the physical and cognitive demands of work to ensure a safe and productive workplace. The function of specialists in ergonomics is to
design or improve the workplace, workstations, tools, equipment and procedures of workers so as to limit fatigue, discomfort and injuries while also efficiently achieving personal and organizational goals (Rempel and Janowitz, 1997). Ergonomics has the potential of becoming a driving force for the development of new quality management strategies (Eklund, 1999).

It is a very well established fact that MMH is a highly strenuous occupation. It entails arduous activities like lifting, carrying, pushing, pulling for prolonged periods. Apart from that, the workers have to adopt awkward postures while at work. As a consequence, these workers are prone to musculoskeletal disorders. Despite all these facts, MMH is not completely avoidable in the present situation and not also in the near future.

MMH is not completely avoidable in the near future. In every country in every work, a significant percentage of the work done by workers in factories, agriculture and elsewhere is done by MMH. But in India, this is a more widely practiced mode of working.

In India, a large number of people earn their livelihood by handling material manually. More than 70% of the total population of India is directly engaged in MMH. So, by slight improvement of this mode of work, a large number of people will be benefited. Furthermore, MMH is one of the most hazardous tasks. Every year, a large number of workers face fatal accidents during this type of work. But even now, in India, no detailed study has been made regarding the accident analysis of MMH work.

In the present thesis, an attempt has been made to make a detailed accident analysis during MMH in different unorganized and organized sectors of Kolkata and its
neighborhood. The purpose of the study is to suggest ergonomic improvements of such accidents and increase efficiency and productivity by reducing the physiological and other costs.

The thesis aspires to itemize the intricate details of the atrocious conditions of the MMH workers engaged both in the unorganized as well as in the organized sectors. The thesis includes detailed questionnaire study on a fairly large population of workers as well as assessment of work behaviour, work mode and some work environment of different industries under those sectors to quantify the contributing causative factors behind the occurrence of work related injuries and accidents. It also deals with the study of different physiological as well as some environmental stresses generated among the load-handling workers during work.

The broad spectrum of ergonomics imparts a critical role in this study. As a branch of applied science its importance is defined often in a simple manner as “fitting the job to the person”. Ideally it is concerned with the design of work and to evaluate the stresses of work and the workplace that affect people, productivity and quality. It can be successfully applied in minimizing the number and severity of accidents by eliminating certain hazardous physical demands of work.

In this thesis the facts of ergonomics has been implemented whereby the existing work organization and workstation of some industries has been studied. The prevailing lacunae have subsequently been identified. The possible modifications to overcome the conditions have also been recommended. The incorporation of ergonomics inputs have ushered in significant improvement and betterment in certain industries.