ERGONOMIC INTERVENTIONS IN THE MANUFACTURING OF AIR HANDLERS FOR AIR CONDITIONING PLANTS

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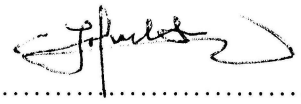

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Tandatangan

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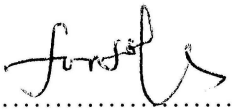

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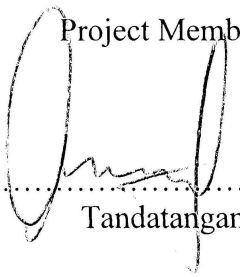

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ABSTRACT

The research emphasizes ergonomic interventions in air handler manufacturing (AHM) for industrial improvements in terms of quality and productivity (Q&P) uplifting, manufacturing cost (MC) reduction, occupational health and safety (OHS) betterment, and other economic benefits in the field of central station AHM in Malaysia, an Industrially Developing Country (IDC). This involves matching of job demands to workers' capabilities, workstation and tool designs in the physical teamwork environments.

Industrial information comprising qualitative and quantitative data were collected through general survey, subjective assessment (SA) via interviews of managers, engineers, supervisors, operators and others, complemented by direct observation (DO) through field measurements, video recordings, and archival data collection with regard to manufacturing costs and processes, work instructions, operations layout, etc. Ergonomic interventions (EIs) by means of real life experiments were implemented, one at a time, to envisage each cause and effect relationship. Post survey incorporating SA and DO were conducted again to determine the effectiveness of each intervention.

Five major EIs in three studies (Chapter 4 - 6) were conducted involving four organisations in Malaysia. New ergonomic tools, equipment and methods were developed for the improvement of OHS of workers, Q&P and reduction of MCs. The first study involved one manufacturing plant, using a twin brazing torch (TBT) to replace that of a single brazing gun (SBG). The second and third EIs were conducted in another factory using TBT in standing position (2nd Study) followed by workstation

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