



ABSTRACT

Effectiveness and fluency of a process are affected by supported equipments that used. Material handling equipment is one of supported equipment to distribute materials in the work area. One of material handling equipment is tower crane. Tower crane is used on building construction especially on stage building. It distributes material with high lifting and big capacity.

In this operation, tower crane has four major mechanism i.e. hoisting, trolleying, slewing and travelling. Every mechanism is supported by many components to make operation become easier, save and effective. In this redesigning, the tower crane is grounded and operated with three mechanism i.e. hoisting, trolleying and slewing.

Maximum capacity of this tower crane is 8 tons with maximum high lifting 30 metres and jib length 42 metres. This jib is balanced by 17,2 metres counter jib which attached with 8,5 tons counter weight. The speed of every mechanism is 25 m/minute for hoisting mechanism, 30 m/minute for trolleying mechanism, and 3 rpm for slewing mechanism. All mechanism is moved by transmission that's connected with electrical motors. The structure is analyzed with SAP 2000 program to definite the safety of the structure .