**CHAPTER 5**

**DISCUSSION, CONCLUSION AND RECOMMENDATION**

**5.1. Discussion**

In this thesis, according to power calculation for motor, the selected motor is suitable for the system. However, power’s safety of the motor is more than the acceptable limit. The emergency operation portion could be thought in the real elevator design. But, it could not be though in the prototype elevator design. In the real model, the overspeed governor must be considered in order to act as a stop device when the elevator runs beyond the rated speed. The overspeed governor does not contain in the prototype model.

**5.2. Conclusion**

At present, there are many high-rise buildings in Myanmar. This thesis is to be a support for developing country, Myanmar. For most people living in urban cities such as Nay Pyi Taw, Yangon and Mandalay, elevators become an important transport of their daily lives. People can go up or down the building’s storeies which they want to reach by pushing a push-button from a car operation panel and floor operation panel. There are three types of elevators and the consideration for choosing an elevator depends upon the type of building, high of building, numbers of floors, number of people to be transported or types of things to be transported.

This thesis describes the design and implementation for the elevator control system with the LogixPro simulator using IVC series PLC. A PLC-based controller for elevator control system in machine process has been successfully designed and implemented. According to the result **6.076kW**, the capacitor start single phase induction motor is used in the real model design because it is simple in construction, cheap in cost, reliable and easy to repair and maintain. In the prototype model, the motor’s power is selected **0.3kW** PMDC Motor as the prototype ratio 1:20. The approximate weight of one person has been assumed **77kg (170kg)** in the elevator design. For the real model, a rope with the capacity to bear at least **9kN** has to be

chosen on the standard rope strength. From the rope manufacture’s data sheet, to meet the design requirement, the cable with **10.9kN** safe load capacity and thickness of **3/8inches** or **9.5mm** is considered. The sensors, push-buttons, actuators connection and their configuration at different floors are effectively incorporated in the test run condition with the ladder logic network. Although some calibrations and requirements may have, the modeling PLC based on elevator control system is done. By developing the proposed system, the result of elevator control system can be applied in the real world.

**5.3. Recommendation**

In this thesis, IVC1-1614MAT PLC controller is mainly used to control machine process of elevator system. However, the other type of controllers can be used to design for this kind of machine control system. The operator workstation is not succeeded. Therefore, the one, who want to do a research relating with this type of system, should use more advance monitoring system like SCADA (Supervisory Control and Data Acquisition) system to implement their research and for that time, this thesis will be the great benefit for their research.