UNIVERSITI TEKNOLOGI MARA

DEVELOPMENT OF A PROTOTYPE SEMI AUTONOMOUS MOBILE DRIVE FOR GRASS CUTTING MACHINE

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ABSTRACT

This paper summarises and reviews the technological development in making a Semi-Autonomous Mobile Drive for Grass Cutting Machine. Lawn mowers has become one of the essential things in the modern age as it helps people mow their garden, field, and farm. Old and manual designs of the tool may cause the health of the people especially the elderly, to deteriorate. Therefore, the objectives of this project include designing and fabricating the existing grass cutter into a Semi-Autonomous Lawn Mower so that less energy and time will be consumed. This semi-autonomous grass cutting machine is controlled by a remote, making the operation easier and more reliable as it eases the process. The methodology of this project is comprising of sketching the concept, making the schematic diagram, doing the engineering calculation as well as project and financial cost planning. Lastly, the significance and purpose of this project is to provide a user-friendly support for the existing lawn mower so that it operates efficiently by remote controller in the agricultural field and reduce time consumption to cut the crops in the field as well as to cut the grass.

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CHAPTER ONE
INTRODUCTION

1.1 Background of Study

The first grass cutting machine that ever used is the scythe and through the years, there are several developments of tools to cut and maintain the grass. The intention of making this project successfully happened is to help human on finishing a particular task like cutting the grass with less energy and time consumptions. Other than that, it is essential to have a semi-automated grass cutting machine to ease the cutting process. This project is focus on building its structure body which is semi-autonomous mobile drive that can carry the grass cutter mechanism along with it. It is also can be controlled by using a remote control where it is programmed perfectly with the semi-automated mobile drive.

1.2 Problem Statement

Most of grass cutting machine we have seen today have a myriad of negative impacts on society, the environment, as well as parts of the industry. Almost all grass-cutting machine use a lot of manpower and time due to their outdated design. They tend to run slowly and require heavy physical labour. Additionally, the old grass cutting machines are not environment and user-friendly as they emit loud noises, heavy smoke causing air pollution, and may potentially harm the operator. Thus, the development of semi-autonomous grass cutting machines will reduce all this issue.

1.3 Objectives

The main objectives of this project are:

a) To design a semi-autonomous mobile drive for grass cutting machine.
b) To fabricate the design of semi-autonomous mobile drive for grass cutting machine.