LINE MARKER

NAMA	NO. PENDAFTARAN
SITI AISHAH BINTI ELIAS	08DMP18F1163
NUR RASYIDAH BINTI JASLI	08DMP18F1154
NURFATIHA AFIQAH BINTI MOHAMAD SIDEK	08DMP18F1158

JABATAN KEJURUTERAAN MEKANIKAL

DIS 2019

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

LINE MARKER

NAMA	NO. PENDAFTARAN
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Laporan ini dikemukakan kepada Jabatan Kejuruteraan Mekanikal sebagai memenuhi sebahagian syarat penganugerahan Diploma Kejuruteraan Mekanikal

JABATAN KEJURUTERAAN MEKANIKAL

DIS 2019

AKUAN KEASLIAN DAN HAK MILIK

TAJUK : LINE MARKER

SESI : DIS 2019

1. Kami, **1. SITI AISHAH BINTI ELIAS (08DMP18F1163)**
2. NUR RASYIDAH BINTI JASLI (08DMP18F1154)
3. NURFATHA AFIQAH BINTI MOHAMAD SIDEK (08DMP18F1158)

Adalah pelajar tahun akhir **Diploma Kejuruteraan Mekanikal(Pembungkusan), Jabatan Kejuruteraan Mekanikal, Politeknik Sultan Salahuddin Abdul Aziz Shah**, yang beralamat di **Persiaran Usahawan, 40150, Shah Alam, Selangor**. (selepas ini dirujuk sebagai 'Politeknik tersebut').

2. Kami mengakui bahawa "Projek tersebut di atas' dan harta intelek yang ada di dalamnya adalah hasil karya/reka cipta asli kami tanpa mengambil atau meniru mana-mana harga intelek daripada pihak-pihak lain.

3. Kami bersetuju melepaskan pemilikan harta intelek 'projek tersebut' kepada 'Politeknik tersebut' bagi memenuhi keperluan untuk peanugerahan **Diploma Kejuruteraan Mekanikal** kepada kami.

Diperbuat dan dengan sebenar-benarnya diakui

Oleh yang tersebut;

a) SITI AISHAH BINTI ELIAS	)	……
(No. Kad Pengenalan: 000513-08-0246)	)	SITI AISHAH
b) NUR RASYIDAH BINTI MOHD JASLI	)	…….
(No. Kad Pengenalan:001221-02-0684)	)	NUR RASYIDAH
c) NURFATIHA AFIQAH BINTI MOHAMAD SIDEK	)	…….
(No. Kad Pengenalan: 000822-10-1012)	)	NURFATIHA AFIQAH
Di hadapan saya, MOHD HARIZ BIN SAMAN (No. Kad Pengenalan:)	)	……
sebagai penyelia projek pada tarikh: 4/11/2020	)	MOHD HARIZ BIN SAMAIN

ACKNOWLEDGEMENT

Alhamdulillah , In the name of Allah the most gracious and the most precious, first and foremost , I would like extend our deepest praise to Allah SWT who given us the patient , strength ,determination, obstacle that helping us to think wisely in making a decision and courage to completed this project .Plus , many thanks and highest gratitude to Mr. Mohd Hariz Bin Samain , our supervisor , which helps , lead and guides us with our project “Line marker”.

ABSTRACT

Penghasilan garisan padag adalah sesuatu yang penting untuk memebuat Kawasan permainan bola sepak, ragbi, leper cakera dan lontar peluru. Pengukuran garisan dan lengkungan padang harus tepat, sekiranya ukuran padang yang tidak mematuhi peruntukan saiz ini dianggap tidak layak sebagai tempat perlawanan bola sepak. Seperti yang diatur di bawah Persatuan Bola Sepak Malaysia dan Dunia (FAM dan FIFA), panjang dan lebar padang bola sepak mestilah sesuai dengan ketentuan. Penanda Garisan ini berteknologi penyemburan dan mudah alih untuk memudahkan membuat garisan padang. Produk penanada garisan ini menggunakan lagi untuk membuat garisan lengkukngan. Masalah penggunaan penanda garisan penggelek, sukar untuk membuat garisan lengkukngan dan garisan lurus disebabkan perumukaan padang yang tidak sekata. Selain itu, masalah konvensional yang berat. Objektif kajian untuk menanda garisan dengan cepat dan menjimatkan lebih banyak masa. Seterusnya, garisan padang lebih tepat dan kemas. Projek ini mencadangkan, penggunaan tayar yang dapat menghasilkan lengkukngan dengan mengikuti ukura tertentu tanpa menggunakan konvensional yang lama dan menyebabakan kesukaran kepada pengguna ketika menanda garisan dan lengkukngan. Dengan adanya mesin penanda garisan berteknologi penyemburan ini dapat mengatasi masalah yang dihadapi

ABSTRAK

The production of field lines is an important factor in making the area of football, rugby, discus and shot put areas. Measurement of line and curve of the field should be accurate, if the field does not comply with the provisions of this size is considered ineligible as a football match. As regulated under the Football Association of Malaysia and the World (FAM and FIFA), the length and width of the football field must be in accordance with the provisions. These line markers are spraying and portable technology to make it easy to make field lines. This line marker product uses liquid pumps and sprays as markers. This line marker also makes it easier to create curved lines. The problem of using roller line markers, it is difficult to make curved lines and straight lines due to uneven pitch surface. In addition, serious conventional problems. The objective of the study is to mark the line quickly and save more time. Next, the field line is more precise and neat. This project suggests, the use of tires that can produce curves by following a certain measurement without using a rope as a line mark. Most used in Malaysia still use the old conventional and cause difficulties to consumers when marking lines and curves. With the presence of this spray technology marker machine can overcome the problems encountered.

CONTENT

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

1.1 **INTRODUCTION**

This final semester project is one of the main things that need to be implemented by semester 5 students meet the requirements of the DJJ 5141 course requirements to use a mechanical engineering diploma. For each of these final projects, each individual in the group has to go through a number of procedures that have been determined by the Malaysia Polytechnic Education Department. At the stage level, each individual is given the freedom to determine the project produced. Member of the advisory working group of the project supervisor appointed by the Department to prepare proposals according to the title of the project to be presented. The proposal to be produced must be every piece of information about the project chosen by the group members.

The final presentation of the project will be carried out by the evaluation panel during the presentation of the project before the final end together with the internal jury panel and the external jury panel. In the required presentation later, the external jury panel is free to voice their opinions in all aspects deemed appropriate and necessary. The course of the project will be recorded in the Chart based on the original design of each work process will be able to carry out in an orderly and detailed manner. The final project report must be implemented at the same time and must be completed before the presentation of the final project which will be made by the panel based on the scoring that has been set.

1.2 **BACKGROUND RESEARCH**

This project is called ‘Spray Marker’ which is used as a line marker in the field. This project is capable of implementing filed line marks as an example of a football field. This spray marker can save time compared to the manual line marker. Spray line markers by generating pressure automatically. The required spray pressure will be generated by pushing the car with a newly developed impeller pump (rear wheel). The shaft is equipped with a closed ball bearing and shaft seal ring. The spray unit is positioned in front of your view, flexible to adjust height and lateral and easily operated with a hand lever on the guide rod. Line widths can be adjusted from 50 to 150mm.

1.3 PROBLEM STATEMENT

Nowadays, existing line markers require a lot of manpower when making field lines. Frequent problem questions are difficult to make a straight line as is often the use of rollers as markers. Another problem that often occurs is that it is difficult to get accurate and clear lines that appear as professional lines. Also, commonly used line markers take more time to get clear lines. Common lines are uneven, with the availability of renewable line marker products that are easy to ensure line accuracy and suitable for all surfaces and shapes of pitches or courts can be obtained quickly and easily. The use of these line markers is easy to operate and easy to use.

1.4 RESEARCH METHOLOGY

To implement this project, the method that needs to be used is to first put the paint in the bin first. Next, it is necessary to set or adjust the tire with the appropriate angle when making a curve. In addition, the most important thing is to ensure that the machine is always in a fully prepared condition before starting the line drawing work.

1.5 SUGGESTIONS AND SOLUTIONS

After reviewing and researching the problems encountered, suggestions and solutions are made by team members and project supervisors. This line marker uses the spray method to get a clear line. In addition, this project uses line adjusters for the purpose of line cleaning formed. Using a 16 litre paint barrel can accommodate a large amount of paint capacity.

1.6 BENEFITS

This line marker can provide many benefits to employees because this project is produced based on the problems encountered. These line markers can make it easier to make field liners.

1.7 CHAPTER'S SUMMARY

This chapter has described and explained the things that are the basis and direction for this project. In this chapter 1 the background of the project / study, problem statement, research objectives, research methodology, suggestions and solutions and project benefits. The usual line is not clear because the custom used in Malaysia is the roller type line marker. In addition, there are difficulties for users when marking lines due to uneven field surfaces. With this line marker product, the line will be more precise and clear.

CHAPTER 2
LITERATURE REVIEW

2.1 INTRODUCTION

In this chapter, basic line marking machines for turf were available by the late 1800s, one of the first such machines a wheel-to wheel paint transfer device, was developed by F.H Ayres and “would be instantly recognizable by user of many of today’s machines, which work on the same principle”. Some of the earliest line marking machine were built on a small scale so they could be used by a child, as the “gardener’s boy” who was in charge of marking tennis courts on estates in late 19^{th} century might have been nine or ten years old. When baseball was first invented there were no marks on field; foul lines were marked by using a plough to dig along the line. The use of whitewashed or chalked line was developed by William wing, Cincinnati Red Stockings groundskeeper.

In now modern days, spray marker provides the flexibility of being able to instantly change the paint colour, easily and without any mess. Spray line markers provide an effective solution to obtaining clean, strong lines. The paint is sprayed through a nozzle, in the better systems there are two nozzles which apply the paint to both sides of the leaf, thus saving having to apply the paint in the reverse direction. The better machines will also have a built in agitator to ensure the paint stays in solution whilst being applied.

2.2 MARKING MACHINE

Prepared by Nur Rasyidah Binti Jasli

The use of modern plastic and design technology has brought about revolution in the development of pitch marking machines. They now come in range of shape, sizes and systems.

1. Dry line marker

For use on grass, redgra and clay. In some particularly on muddy surfaces, it is still the best method of producing line. Materials used for dry line marker come in various forms. These whitening powders are non-toxic and are based on ground natural calcium carbonate.

2. Transfer Wheel Marker

What has changed is the quality of materials used sin their construction. On some of the old steel machines screws would rust and often became loose allowing marking fluid to leak out, however modern concealed metal/plastic tanks have rectified this problem. These machines are for use on grass surfaces. Width of line is dependent upon the width of the marking wheel, and can vary from 1inch (25mm) to 4inch (100mm). A reasonable amount of grass cover is required to produce a good line. Easy to use.

3. Spray markers

Now becoming the most popular line markers of natural turf on the market, they are fast, reliable and easy to operate. Some even have a tank washing process built into the unit for ease of maintenance. Fast and efficient. Large tanks. Easily adjustable line widths. This technology has enabled the development of ride on markers that can complete a pitch in 10 minutes. A range if attachments available for multi-line marking and for spraying.

2.3 CHAPTER'S SUMMARY

As to conclude this chapter, literature review is important to showcase all the studies of materials and methods to enhance the knowledge on this project. Every thesis and others projects that are related to this is really helpful especially for us to understand it fully.

After a lot of materials and methods were discussed and researches were done, due to its characters and advantages, meanwhile the methods that we decided to carry on is spray line marker method. This is because of its low cost benefits and great for beginner's process.

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

A methodology is a plan-of-attack, especially when that plan-of-attack is used repeatedly. This might be obvious, but the word methodology is related to the word method. In fact, a methodology is a systemarious methodologies as they perform experiments. It might seem like the world is nothing but chaos and disorder. But actually, sometimes there is a method to this madness. And sometimes there's a methodology.

In this chapter, there will be a lot of information about the process and journey through out the making of our final project. There will be flow chart showing the process of us making the whole project. This flow chart will explain the processes we took. Next, is the Gantt Chart, which will show the actual and planning throughout all the 13 weeks of our final year project journey.

3.2 FLOW CHART

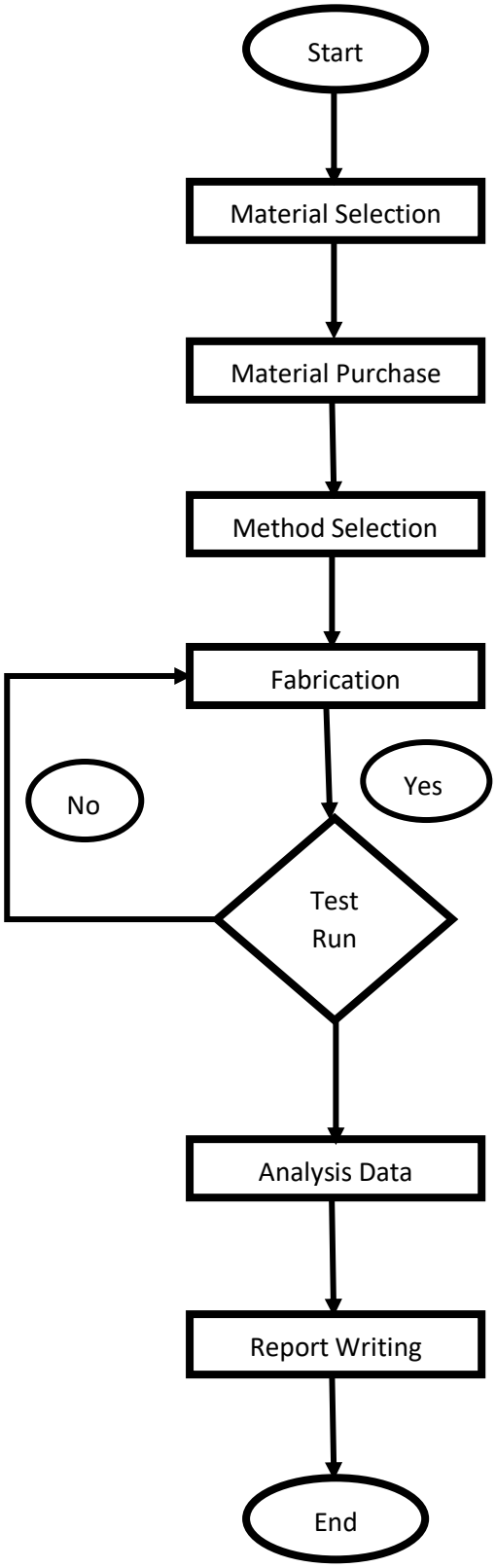

Figure 3.2.1 – Flow Chart

3.3 FLOW CHART EXPLAINATION

Prepared by Nur Rasyidah Binti Mohd Jasli

- **Material Selection**

  The process of material selection is one of the most important process in this final year project. The main factor of material selection is to discuss and finalized which materials that will be use in the project in order to avoid wasting of money and time. The material selection need to be done precisely so that the risks could be avoided.

1) Wheel 5 inch Etalase

Figure 3.3.1 – Wheel 5 inch Etalase

2) Mild steel

Figure 3.3.2 – Mild steel

3) Aluminium square hollow

Figure 3.3.3 – Aluminium square hollow

4) Tube steel

Figure 3.3.4 – Tube steel

5) Bolt nut

Figure 3.3.5 – Silicon

6) Handle rubber

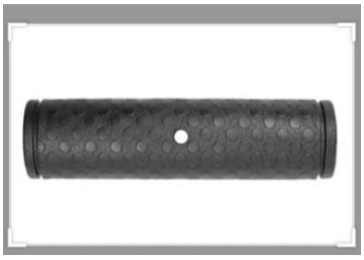

Figure 3.3.6 – Handle rubber

7) Tong 16 litre

Figure 3.3.7 – Tong 16 litre

8) Trolley wheel

Figure 3.3.8 – Trolley wheel

- **Material Purchase**

The process of materials purchasing is crucial to collect and obtains all the materials needed. In this process a lot of research on the places and suppliers that the materials are going to be purchase is done. This step is important so that the risk of material wasting or money-loss will not happen. However, to carry out material purchasing, a well-made purchasing plan needed to be made. First, the suppliers will be contacted to make sure the availability of the materials. Then, the calculation of the amount of materials needed and also the price of the materials. After that, surveys of price must be carried out to determine the better selling prices. Then finally, the purchases could be made.

- **Fabrication**

Figure 3.3.9 – The process of creating a line marker

- **Test Run**

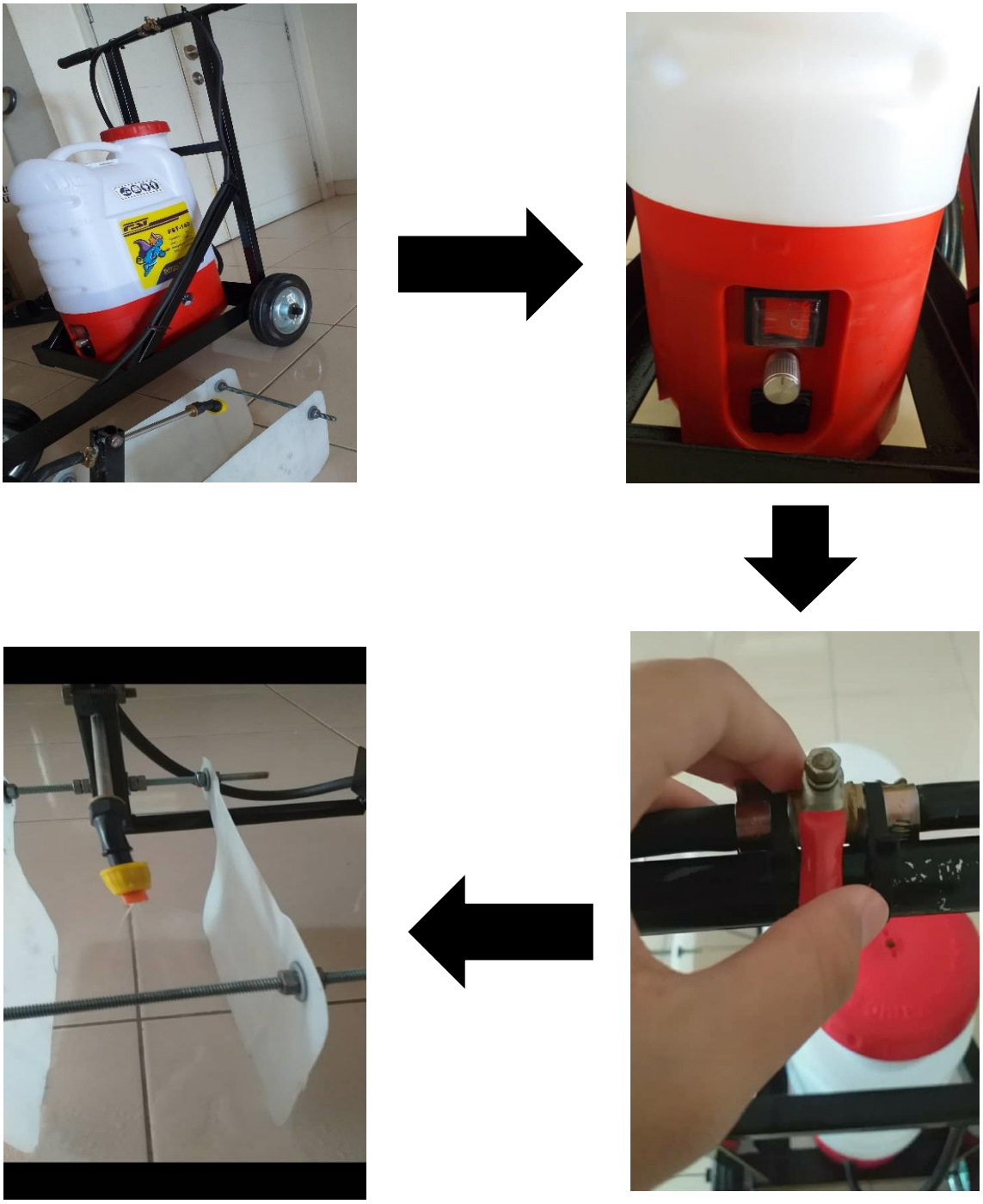

Figure 3.3.10 – Test run

1) Put the paint inside the tank
2) Turn the ON button
3) Push the water valve
4) And ready to use

- **Analysis Data**

The process of evaluating data using analytical and logical reasoning to examine each component of data provided. This form of analysis is just one of the many steps that must be completed when conducting a research experiment. Data from the test run is gathered, reviewed and the analysed to form findings, discussions and conclusion. In this project the data collection is collected from the tensile strength of the material we created.

- **Report Writing**

Report writing is one of the most crucial step in every project invented. It is important to make a report based on the project, test run and analysis so that future improvements nor expansion of knowledge could be done. Our report writing is based on the analysis and findings that we collected throughout this whole process of completing this project.

3.4 PRODUCT DESIGN

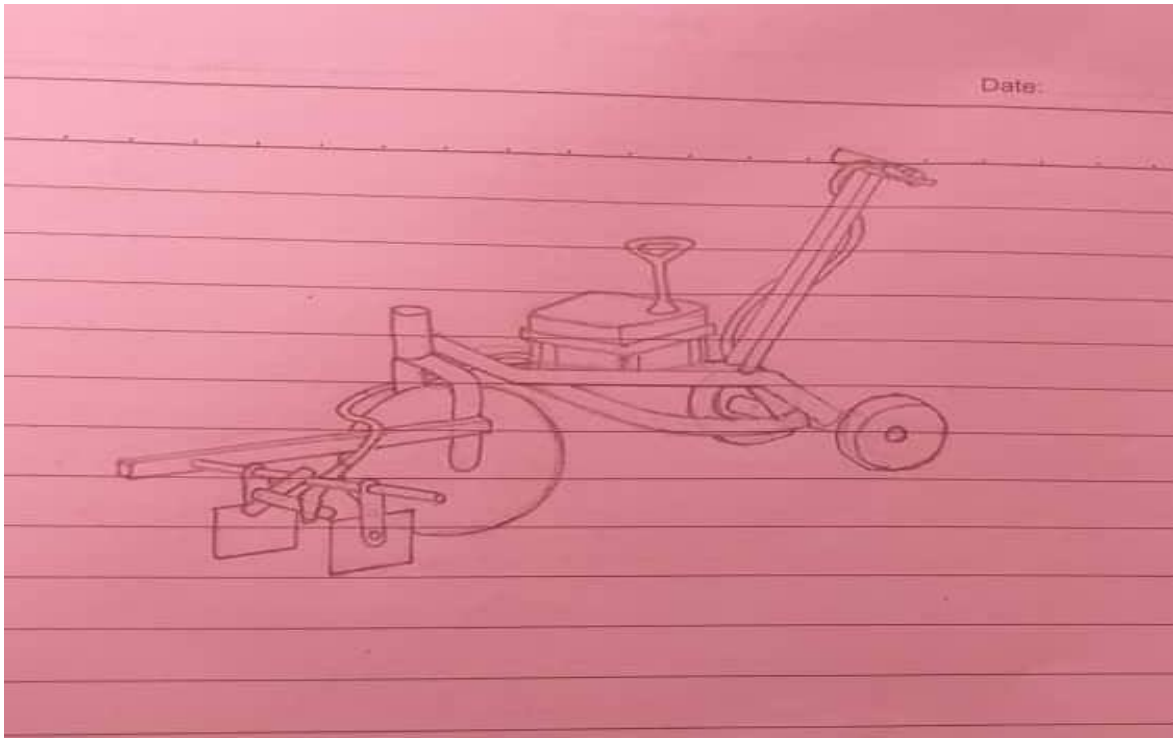

Figure 3.4.1 – Design

3.5 BUDGET CALCULATION

Prepared By Nur Rasyidah Binti Mohd Jasli

Material equipment	Amount	Price
Aluminium square hollow	2.5 m	Rm 25
Mild steel	2.5 m	Rm 25
wheel 5 inch Estalase	1 unit	Rm 36
Handel rubber	2 unit	Rm 36
Bolt nut	1 pack	Rm 22
Tube steel	2 m	Rm 21
Trolley wheel	3 unit	Rm 60
Tong 16 litre	1 unit	Rm 135
Water valve	1 unit	Rm 10
	Total	Rm 370

Table 3.5.1 Budget calculation

3.6 PROJECT ACTIVITY

PROJECT ACTIVITY	WEEKS											
	1	2	3	4	5	6	7	8	9	10	11	12
Briefing and Project Planning	✖	✖										
Project Design			✖									
Material Selection				✖								
Material Purchase					✖							
Method Selection						✖						
Fabrication							✖	✖	✖			
Test Run										✖		
Analysis Data										✖		
Report Writing											✖	
Video and Slide making												✖

Table 3.6.1 Project activity

CHAPTER 4

FINDINGS AND ANALYSIS

4.1 INTRODUCTION

This chapter combine data and analysis of the Line marker and its materials calculations. This data and analysis are very important for this project to achieve the objectives and scope of the project. This data indicates the successful results of the materials testing. After getting all of this data, we analyze every single possible to make it perfect.

4.2 ADVANTAGE AND DISADVANTAGE

Prepared By NurFatiha Afiqah Binti Mohamad Sidek

Every project has its own pros and cons, the pros will help the people and also the environment. However, the cons or the disadvantages must be improved or change for the future so that we could enhance the good and very efficient product that hardly to find disadvantage of the project.

Line marker using the spray method have many advantages to help save time and make it easier for users to operation line markers. In addition to the advantages, this project also has disadvantages that we must overcome so that in the future we will get better benefits.

4.3 FINDINGS

Prepared By Siti Aishah Binti Elias

After the spray marker project was completed, testing was done using 16 liters of paint on the spray marker to see the ability and total length of the line that can be produced on almost one football field, taking about 30 minutes. Record tie taken is faster than using other line markers.

4.4 ANALYSIS PROJECT

Prepared By Siti Aishah Binti Elias

Ever project that is implemented and done must have its own advantages and disadvantages. After completing the manufacturing process and testing on the project. It is found that this Spray Marker has its advantages and disadvantages. Among the advantages of spray marker are as shown in chapter one, which can make it easier to make field lines and reduce manpower. Spray markers can also save time. As noted during the test on spray markers, it was found that the production of field lines produced by spray markers is faster than using other line markers.

Among the disadvantages of spray markers is the use of batteries. Spray markers use the charging method and need to charge for a long time to produce field lines. Next, the spray marker has a large size, this causes the user difficulty to the user as it has to provide a large space to store it.

4.5 CHAPTER'S SUMMARY

In conclusion for this chapter, analysis and findings that have been made. Line markers using this spray method have many advantages but there are also disadvantages for pros. Therefore, challenges are taken as a space for improvement and more development for future generations as well as to enhance their knowledge of the projects we undertake. Tests are conducted to determine the full potential of the spray and it is proven that the spray is simpler and speeds up its use time. The relationship is shown when making a line.

CHAPTER 5

DISCUSSION , CONCLUSION AND UPGRADE PLAN

5.1 INTRODUCTION

This chapter describes the discussions, conclusions and joint plans for the project. From the project test results data, analysis was performed. Therefore, a discussion of all the test and analysis results will be explained in this chapter. Then, a conclusion will be made based on the discussion plan and improvements that have been made.

5.2 DISCUSSION

The purpose of this project is to facilitate users in speeding up the process of producing lines on the field. Based on the data we have collected, the line markers we usually find use a lot of energy. This is because the process becomes difficult. The process becomes difficult because only a modest quantity of paint can be filled into a line marker roller type container. As a result, it becomes difficult to produce lines quicklyand easily. However, with the use of spray method with the help of battery can facilitate the work of making lines.

Apart from that, the method of using line marker spray method that uses these battery must be better because it can overcome the problems faced it using line marker roller type. The result will look neater and more beautiful, this is because the paint sprayed out is not obstructed by any foreign objects such as dried leaves, twigs.

In addition, the function of the battery used is to reduce the use of manpower. However, battery usage is limited. Therefore, to overcome the problem we use a 12v battery. Although the 12v battery can not last very long, but the power or energy required to complete the process of making a line to completion is sufficient.

Then, the use of a stopper valve placed in the middle between the handles is intended to allow and prevent paint from flowing out of the barrel. In addition, the use of line size adjuster, placed on the left and right of the spray holder serves to control the desired line size. With the use of

line size adjusters can block so that the sprayed paint does not spread widely and is not neat. Therfore, we need a line size adjuster so that the lines formed are neat and orderly.

Finally, the finish of our product can be used with improvements to the with improvements to the wheels using the 5 inch Etalase wheel. This way, we can make semi-circular or full circle lines more easily. Therefore, based on all these discussions have been made for the future to increase, many improvements can be ade to improve the quality of the product and also make the time required to make the product decrease.

5.3 CONCLUSION

Besad on this project through the exit process, confident to say that the line marker using this spray method provides many benefits not only save energy, but also make it easier for users to use this line marker easily. By simply controlling the stopper valve to stop the paint from spraying out of the spray. Due to all the improvements that have taken place so that this project can give more benefits and advantages. Therefore, hopefully this project can grow further to all future generations.

5.4 PROPOSAL

With this project, we believe that it can facilitate and expedite the work of making the finish line. Therefore, we believe and hope to slightly reduce the load faced when making lines on the field. Although this project seems simple therapy it has a high impact on the management to make the pitch.

In this regard, we hope with the creation of this project can attract more interest and anyone who wants to create or improve tools to help facilitate the process of making lines in the field. This project can not only meet our needs but also ease the burden.

With this, it can not only facilitate the work but also save time to make lines on the field. In addition, maybe later there will be new ideas that can give innovation to this line marker project

to be even greater and can be used extensively not only in making normal field lines but also in all types of fields available.

In addition, we also hope that in the future the project in terms of batteries can last longer. In addition, the pressure is better so that the resulting line is more neat and beautiful.

5.5 CHAPTER'S SUMMARY

This chapter has described the security and problems encountered during the process of developing this project. In doing work, safety and health are very important, only we do not know its existence. In this case we need to always be vigilant and careful wherever we are always in a safe state.

Each project developed has its own importance and objectives, as does our project line marker. Although there were shortcomings at first, but we were able to overcome them. Based on the conclusion, many improvements we have made to our project with the aim of reducing the burden faced by users. Therefore, we hope this project can be widely accepted by consumers. With this, let us all help consumers in Malaysia, at the same time we help develop the Malaysia economy by producing great innovations.

REFFERENCES

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- https://www.researchgate.net/publication/341266490_Manual_applicator_road_marking_machine_A_review
- https://www.afnsports.com.my/product/144/spray-Line-Marker-Fm-500.html

APPENDIX

Appendix A – Project registration from

BORANG PENDAFTARAN PROJEK

AHLI KUMPULAN			
NAMA	**NO. PENDAFTARAN**	**KELAS**	**NO. TEL.**
1.			
2.			
3.			
4.			

MAKLUMAT PROJEK		
A. CADANGAN TAJUK		
B. KETERANGAN PROJEK	B(i)	PENYATAAN MASALAH: i. ii. iii.
	B(ii)	OBJEKTIF PROJEK: i. ii. iii.
	B(iii)	SKOP KAJIAN:
	B(iv)	LAMPIRAN LAKARAN PROJEK & CARTA ALIR PELAKSANAAN PROJEK (JIKA PERLU)

Appendix B – Project Gantt Chart

SESI:
JABATAN:
KURSUS / KOD:

MINGGU	STATUS	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15
AKTIVITI PROJEK																
	R															
	L															
	R															
	L															
	R															
	L															
	R															

Appendix C – Rubric Example

NO	CRITERIA	SCALING						SCORE
		5	4	3	2	1		
Upon completion of this course, students should be able to: **1. Develop creative solution to solve the problems in the project design or case study (C5, PLO3)** **2. Organize the selected design or case study based on the project planning (P5, PLO4).**								
1.	***Abstract Title***	Completed title; includes clear keywords found in the abstract text, provides accurate and clear insight into the content of the abstract.	Completed title; includes keywords found in the abstract text.	Nearly Complete title; includes keywords found in the abstract text.	Poorly developed title; includes some keywords poor insight into the content found in the abstract text.	Title appears unrelated to abstract text.		
2.	***Introduction/ Problem Statement***	*An introductory paragraph is interesting and engaging, vividly demonstrate the importance of the study, and makes the reader want to read the entire study.*	*Introduction explains why this study is important (purpose) and gives background of central issues and relevant theory in order to provide a rationale for this study.*	*All of the important elements of the introduction are included, but problems exist in clearly articulating the purpose, research, problem, Quality of writing may also need improvements.*	*Adequate range; no precise use of subtle meanings displayed; technical terms are seldom used*	*Introduction submitted does not meet emerging criteria*		
3	***Purpose and Methodology***	*A general purpose and all relevant methods are stated using the correct scientific terminology*	*A general purpose and nearly relevant methods are stated using the correct scientific terminology*	*Purpose or methods are partially nearly complete*	*Purpose or methods are partially incomplete or use layman's terms*	*Section is absent or not relevant to the title*		
4	***Summary of Conclusions***	*Conclusions are made based on the results, any accepted values are given for comparison, and percent error values are provided*	*Conclusion section is mostly complete, and relevant conclusions are omitted*	*Summary is absent, more than half complete, and relevant to the experiment*	*Summary is absent, about half complete, or not relevant to the experiment*	*Summary is absent, less than half complete, or not relevant to the experiment*		
							TOTAL	**/20**
	Comments							

Rubric Abstract

Appendix D – Project Log Book

POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

JABATAN KEJURUTERAAN MEKANIKAL

BUKU LOG PROJEK

PROJEK 1 (DJJ 5141)

PROGRAM: _____

NAMA PELAJAR: _____

SESI _____

Dokumen ini merupakan cadangan buku log yang boleh digunakan oleh program pengajian di politeknik bergantung kepada keperluan kurikulum program pengajian yang berkenaaan. Boleh disesuaikan mengikut kesesuaian yang diperlukan.

JABATAN KEJURUTERAAN MEKANIKAL

DJJ 5141 (PROJEK 1)

SESI: _____

BUKU LOG PROJEK

	MAKLUMAT PELAJAR		
NAMA			
NO. MATRIK			
NO. TELEFON		E-MAIL	
ALAMAT SEMASA			

	AHLI KUMPULAN	
BIL	NAMA	MATRIK
1. 2. 3. 4.		

	MAKLUMAT PROJEK

TAJUK PROJEK	
PENYELIA	

PANDUAN PENGGUNAAN BUKU LOG

Arahan dalam penggunaan buku log:

i. Buku log perlu diserahkan kepada penyelia untuk dinilai dan disahkan sekurangkurangnya seminggu sekali.

ii. Buku log perlu dibawa bersama setiap kali mengadakan perjumpaan dan perbincangan bersama penyelia untuk tujuan pengesahan.

iii. Buku log perlu diserahkan kepada penyelia bersama Laporan Projek Akhir untuk penilaian.

FORMAT BUKU LOG

Maklumat yang perlu dimasukkan di dalam buku log aktiviti pelaksanaan projek pelajar:

- Pelajar perlu mencatat aktiviti dan tugasan sepanjang minggu.
- Pelajar perlu memperincikan segala perancangan di ruangan Laporan Kemajuan Projek agar selari dengan perancangan yang telah dinyatakan di dalam carta Gantt.
- Pelajar perlu menyatakan pencapaian sebenar atau status projek terkini pada ruangan yang disediakan.
- Bahagian Cadangan Tugasan perlu diisi oleh pelajar dengan menyatakan cadangan yang berkaitan sebagai langkah penambahbaikan kepada projek.
- Penyelia perlu memberi komen atau maklum balas pada setiap tugasan yang telah dijalankan oleh pelajar.

Appendix E – Certificate of Authenticity and Ownership

AKUAN KEASLIAN DAN HAK MILIK

TAJUK : LINE MARKER

SESI : DIS 2019

1. Kami, **1. SITI AISHAH BINTI ELIAS (08DMP18F1163)**
2. NUR RASYIDAH BINTI JASLI (08DMP18F1154)
3. NURFATHA AFIQAH BINTI MOHAMAD SIDEK (08DMP18F1158)

Adalah pelajar tahun akhir **Diploma Kejuruteraan Mekanikal(Pembungkusan), Jabatan Kejuruteraan Mekanikal, Politeknik Sultan Salahuddin Abdul Aziz Shah**, yang beralamat di **Persiaran Usahawan, 40150, Shah Alam, Selangor**. (selepas ini dirujuk sebagai 'Politeknik tersebut').

2. Kami mengakui bahawa "Projek tersebut di atas' dan harta intelek yang ada di dalamnya adalah hasil karya/reka cipta asli kami tanpa mengambil atau meniru mana-mana harga intelek daripada pihak-pihak lain.

3. Kami bersetuju melepaskan pemilikan harta intelek 'projek tersebut' kepada 'Politeknik tersebut' bagi memenuhi keperluan untuk peanugerahan **Diploma Kejuruteraan Mekanikal** kepada kami.

Diperbuat dan dengan sebenar-benarnya diakui

Oleh yang tersebut;

a) SITI AISHAH BINTI ELIAS	)	…….
(No. Kad Pengenalan: 000513-08-0246)	)	SITI AISHAH
b) NUR RASYIDAH BINTI MOHD JASLI	)	…….
(No. Kad Pengenalan:001221-02-0684)	)	NUR RASYIDAH
c) NURFATIHA AFIQAH BINTI MOHAMAD SIDEK	)	…….
(No. Kad Pengenalan: 000822-10-1012)	)	NURFATIHA AFIQAH

Di hadapan saya, MOHD HARIZ BIN SAMAN) …….
(No. Kad Pengenalan:)
sebagai penyelia projek pada tarikh: 4/11/2020) MOHD HARIZ BIN SAMAIN