TECHNICAL REPORT ON THE STUDENTS' INDUSTRIAL WORK EXPERIWENCE SCHEME (SIWES)

HELD AT

OYESHOLA AUTOMOBILE ALIGNIMENT WORKSHOP

Beside operation burst office ogbomoso, Baptist high school Area.

BY

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DEDICATION

I dedicate this to God for seeing me through; also to my lovely parent **Mr & Mrs Olafimihan** for their support both morally and financially, May God reward you abundantly with long life and good health.

ACKNOWLEDGEMENT

Special appreciation goes to my parent **Mr & Mrs OLAFIMIHAN** for their love and care. I applaud them for making me fall in love with education.

My gratitude is incomplete without acknowledging my maternal family for their support and contribution to my onward progress in life.

I also commend my supervisor, Mr. Jimoh Oyesola for his intellectual contribution and support during my S.I.W.E.S.

A big thank you to my colleagues from different intuitions that formed the group members during my training.

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CHAPTER ONE

1.0 INTRODUCTION TO SIWES

In 1974, the federal government of Nigeria introduced the National policy on industrial training called the student industrial work experience scheme (SIWES).

This program is under the umbrella of the ministry of education through the Industrial Training Fund (ITF), was design to help student acquire the necessary practical education experience in their fields of study and other related professions.

The program was established basically to impact elaborate practical understanding to student with respect to their various discipline. It is also intended that the student through a process of relation to academic knowledge and practical industrial application would understand the underlying principle and become better focused and acquire the practical application toward excellence in his/her discipline.

The student are expected to develop occupational competence that would facilitate their fitting into the world of work after graduation.

1.1 AIM AND OBJECTIVE OF SIWES

The student industrial work experience scheme (SIWES) has it major aims and objective of establishment. The following are the aim and objective of the program.

i. To provide student an opportunity to apply their theorical knowledge in really work situation, thereby bridging the gap between theory and practical.

ii. To expose student to working method and techniques in handing equipment and machineries that is not available in their various institutions.

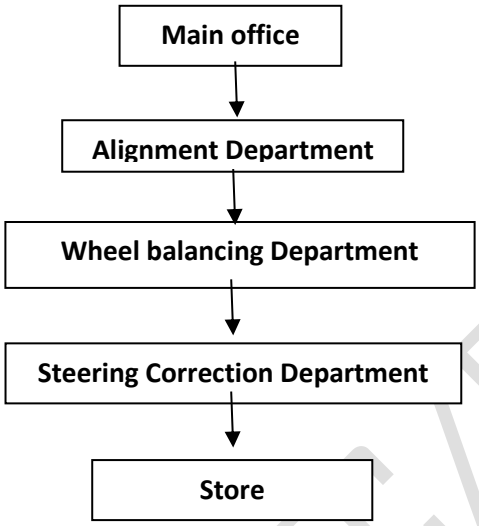
iii. To make the transition from the institution to the world of work easier and thus enhance student contact for later job placement

iv. To prepare student in skill development by participating in field works, particularly in writing report in their fields of works.

1.2 HISTORICAL BACKGROUND OF THE ORGANIZATION ATTACHMENT

Oyeshola Automobile Alignment workshop is now located beside operation burst office ogbomoso, Baptist high school Area.. The workshop has been in existence for a long time and has one of the best automobile workshop in Ogbomosho.

1.3 ORGANIZATION CHAT OF THE ORGANIZATION



1.4 MAJOR ACTIVITIES OF THE ORGANIZATION

Oyeshola Automobile Alignment workshop engage in maintenance, Alignment, wheek balancing and steering correction servicing of a motor vehicles.

1.5 WORKSHOP SAFETY

Safety is the preventive measure timely taken to guide against any form of hazard injury or accident in our daily activities in the workshop. Workshop safety is particularly focusing on ways of preventing danger particularly accident, injury a times death to personnel or other things around the operator while doing work. The following are the basic work shop safeties that must be comply with these include:

I. Do not use the hand to stop the working machine

II. Do not play with any tools

III. Know where the emergency stop buttons are positioned in the workshop in case of accident.

IV. Always listen carefully to the supervisor and follow the instructions.

CHAPTER TWO

2.0 IDENTIFICATION OF TOOLS AND THEIR USES

The following are the basic workshop hand tools and equipment used in mechanical workshop:

1. **Long nose pliers**, also known as needle-nose pliers, are used for gripping, bending, and cutting small objects and wires. They are useful for reaching into tight spaces and working on electronics, jewelry, and mechanical repairs.

Uses

- **Grip small objects**: Long nose pliers are ideal for gripping small objects with precision.
- **Reach awkward places**: The long shape of long nose pliers allows them to reach into small areas where fingers or other tools can't reach.
- **Bend loops**: Long nose pliers can be used to bend loops in wires.
- **Attach wires**: Long nose pliers can be used to attach wires.
- **Cut wires**: Some long nose pliers have integrated cutters for cutting soft wires and other materials.

2. **A flat spanner** is a hand tool used to tighten or loosen nuts and bolts. It's a type of spanner, which is a tool that provides grip and mechanical advantage to turn objects.

How it works

- Flat spanners have two flat ends and are made of strong, durable material.
- They're used to turn rotary fasteners like nuts and bolts.
- The spanner applies torque to turn the object.

3. **A screwdriver's** function is to turn screws in order to tighten or loosen them. Screws are often used to fasten objects together.

How it works

- The head of a screwdriver fits into the shaped cavity and protrusion of a screw.
- Torque is applied in a clockwise or counter clockwise direction to turn the screw.

Types of screwdrivers

- **Flat head screwdriver**: Used to drive or remove screws with a flat head
- **Phillips head screwdriver**: Used to drive or remove screws with a Phillips head
- **Hex head screwdriver**: Used to drive or remove screws with a hex head
- **Torx head screwdriver**: Used to drive or remove screws with a Torx head
- **Offset screwdriver**: Used when a straight-shank screwdriver can't reach the screw

4. **A cross wheel spanner**, also known as a cross wrench or tire iron, is used to loosen and tighten nuts and bolts on vehicle wheels. It's a key tool for automotive maintenance, such as changing tires and performing routine inspections.

How it works

- The cross design of the spanner provides extra turning leverage to make it easier to loosen or tighten the nuts
- The spanner's sockets come in different sizes to fit different lug nuts

Types of cross wheel spanners

- **Fixed length**: A single-piece tool that comes in different sizes
- **Telescopic**: Has an adjustable handle length to provide extra leverage
- **Multi-head**: Has multiple heads at either end or in a cross formation

5. **A jack's** function is to lift heavy objects using mechanical or hydraulic power. Jacks are used in many industries, including construction, engineering, and vehicle repair.

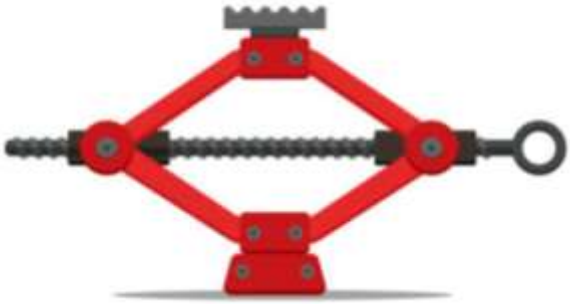
How jacks work

- **Mechanical jacks**: Use a screw thread to lift heavy loads.
- **Hydraulic jacks**: Use hydraulic power to lift heavy loads. Hydraulic jacks use a pump to move oil into cylinders, which creates pressure that lifts the load.

Types of jacks

- **Car jacks**: Used to lift vehicles for maintenance.
- **Floor jacks**: Also known as garage jacks, these are used to lift vehicles.

- **Toe jacks**: Compact jacks that can be used in tight spaces.



2.1 Engine Assembly

Assembly of engines requires cleanliness and attention to detail. Lab studies shown that it takes no more than two tablespoons dirt to spoil an engine. That is for grit ingested through the air filter, imagine how much less dirt. It takes to wear our a power plant when the dirt is built right in to the engine. Engine assembly must be done under clean condition. Besides cleaning the parts of the engine. The workshop area must be clean and the engineers must be clean dirty benches, tools, rags and hands all leaves grit in an engines. Whenever an engine under assembly is not being worked on it should be covered with plastic bag. This will keep out general.

LUBRICANTS, GASKET AND SEALER

Information provided about lubricant, gasket and sealers is often overworked. These items provided the various parts and components with the protection and sealing power they needed

LUBRICANTS

When assembling an engine lubricant must be applied to those component because when an engine first started it will suffer extreme damage if oil is not applied when assembling to an engine prevent Rust and corrosion from forming while the engine is in storage

GASKETS AND SEALERS

Gaskets and sealers fill the minute voids between parts keeping our dirt or sealig in liquid and gases

GASKETS

A gaskets is mainly used to sealed non-moving component together there are cylinder head gasket, crank case gasket and other. Gasket are made of Asbestos or metal, or thin sheets of soft metal, are generally used on today's head gasket while hole are cut out of each gasket to allow for the bolts, values, cylinder, and water passages in the head and block.

CRANKSHAFT

The crankshaft in conjunction with the connecting rod, convert the reciprocating motion of the piston to the rotary motion needed to drive the engine. It is usually made from carbon steel which is alloyed with a small proportion of Nickel.

CHAPTER THREE

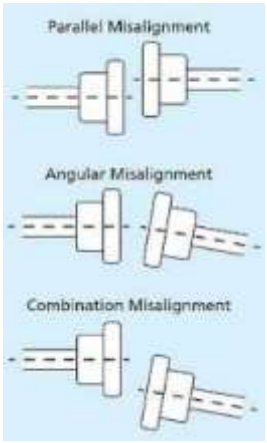
3.0 STUDENT SPECIFIC INVOLVEMENT

During my four month Student Industrial Work Experience Scheme **(SIWES)** at Oyeshola automobile mechanical engineering workshop, I was involved in maintenance and Alignment section of the:

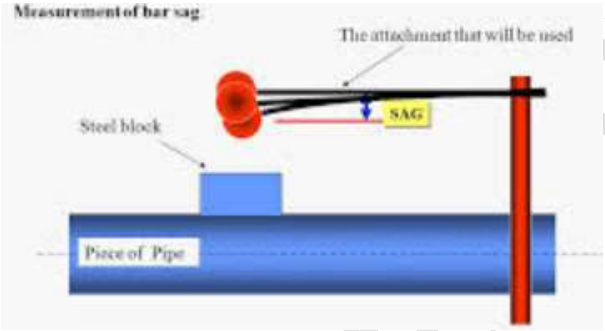
1. **The alignment gauge** is suitable for accurate checking of the castor and camber angle. Measures the camber and caster angle on the wheel hub or brake disc. Also, this magnetic camber alignment gauge could be used as a normal gradient.

2. **A rigid coupling** is a type of shaft coupling that provides a fixed, rigid connection between two shafts, allowing for power transmission without any relative movement or misalignment.

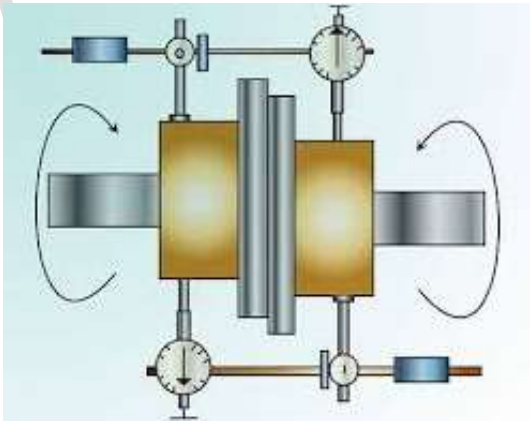
3. **Parallel misalignment** occurs when two shafts are parallel to each other but not in the same plane, meaning they are offset from each other. This can happen horizontally or vertically.



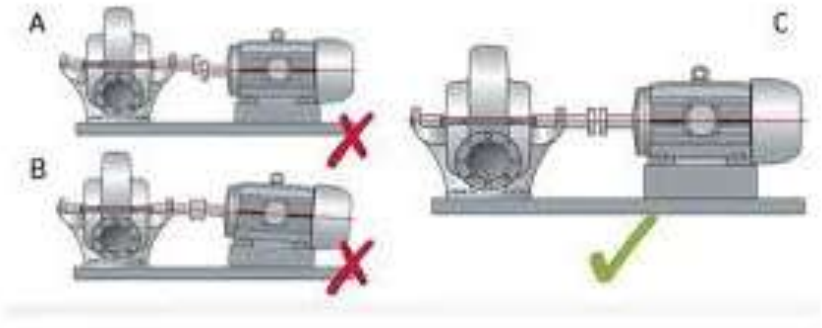
4. **Bar sag** also known as "rod sag," refers to the bending or deflection of the hardware used to support dial indicators or other parts spanning a coupling during shaft alignment, caused by gravity. It's crucial to measure and account for bar sag to ensure accurate alignment readings.



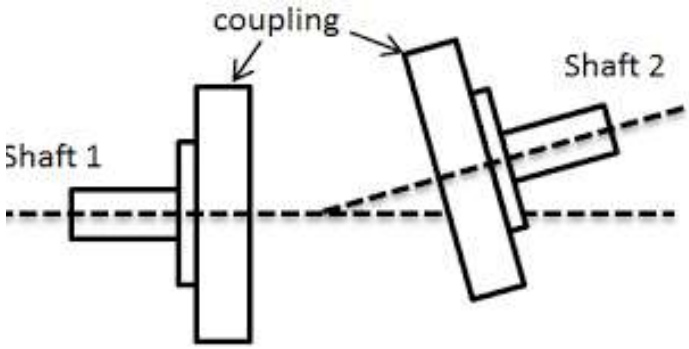
5. **The reverse alignment method**, also known as the reverse dial indicator method, is a technique used to align shafts by measuring the movement of one shaft relative to the other, typically while machinery is stationary, to achieve proper alignment and minimize misalignment issues.



6. **Correcting misalignment** means to bring something back into the correct position or alignment, whether it's a mechanical component, a body part, or something else. The specific methods for correction depend on the type of misalignment and the context.



7. **Angular misalignment** occurs when the axes of two connected shafts intersect at an angle, rather than being parallel, leading to potential problems like increased vibration and premature wear of components.



8. **A flexible coupling** is a mechanical element that connects two shafts, allowing for some degree of misalignment and accommodating movement, vibrations, and shock absorption while transmitting power and movement.

CHAPTER FOUR

4.0 EXPERIENCE GAINED

The experience gained at Oyeshola automobile mechanical engineering workshop, include learning about tools, safety, procedures, and how to repair vehicles. I also gain Soft skills developing communication skills, Developing active listening skills, developing problem-solving skills, Developing attention to detail, and Developing customer service skills.

TOOLS AND SAFETY

- **I** learning how to use basic tools and equipment like spanner, screw driver, battery analyser etc,
- I learning about safety protocols for working with vehicles

Understanding Organizational Goals and Strategy:

Clearer understanding of the organization's vision and priorities:

Alignment workshops often involve discussions about the company's strategic direction, helping participants understand how their work contributes to the bigger picture.

Improved knowledge of key performance indicators (KPIs) and objectives:

Participants learn about the metrics used to measure success and how their individual and team efforts impact overall performance.

Enhanced understanding of interdepartmental relationships:

Workshops can facilitate discussions about how different teams and departments work together, fostering a sense of collaboration and shared responsibility.

Collaboration and Communication:

Improved communication skills:

Participating in workshops requires active listening, clear articulation of ideas, and constructive feedback, all of which enhance communication skills.

Enhanced teamwork and collaboration:

Workshops often involve group activities and discussions, promoting teamwork and collaboration among participants from different departments or teams.

Increased ability to resolve conflicts constructively:

Alignment workshops can provide opportunities to address potential conflicts or disagreements in a productive manner, fostering a more collaborative environment.

Problem-Solving and Critical Thinking:

Development of problem-solving skills:

Participants learn to identify problems, analyze situations, and develop solutions collaboratively.

Enhanced critical thinking:

Workshops often involve analyzing data, evaluating different perspectives, and making informed decisions, promoting critical thinking skills.

Increased ability to anticipate challenges and risks:

By understanding the organization's goals and priorities, participants can better anticipate potential challenges and risks, allowing them to proactively address them.

Overall Benefits:

Increased engagement and motivation:

I understanding the organization's goals and how their work contributes to them can lead to increased engagement and motivation.

I also learn on how to perform basic operations e.g

- I learning how to remove and install parts
- I learning how to repair different systems and components of a vehicle.

CHAPTER FIVE

5.0 CONCLUSION

I found it interesting and I fully participated in it which in turn yields a successful result indeed it prepares me for future challenge in my chosen field. This SIWES program has turn out to be more interesting education due to the nature of the program itself.

5.1 RECOMMENDATION

The experience I gained during my SIWES program cannot be over emphasized I was practically oriented I humbly recommend that the SIWES program should be made compulsory for student of engineering, fields in order to gain more experience in their course of study.