

HEALTH, SAFETY AND ENVIRONMENTAL MANAGEMENT AT WA MAGAZINE

ADAMS YUNUS¹, FREDERICK KUUYINE² & VITUS TABIE³

¹Examinations Officer, Mechanical Engineering Department, Wa Polytechnic, Upper West Region, Ghana

²Senior Instructor, Mechanical Engineering Department, Wa Polytechnic, Upper West Region, Ghana

³Lecturer, Mechanical Engineering Department, Wa Polytechnic, Upper West Region, Ghana

ABSTRACT

Healthy labor force plays an important role in the social and economic development of a country. It is therefore vital to put in the necessary mechanisms for successful executions of safety management policies. The environment and human behavior collectively cause injury, disease, death, and loss of property. A semi-structured questionnaire, interviews, and direct observations were used as the main data collection tools in this study. From the research, potentially hazardous conditions were ignored; unsafe working methods and lack of some personal protective equipment were prevalent. There is therefore, the need for training and utilization of comprehensive health and safety programs for artisans in Wa Magazine.

KEYWORDS: Safety Management, Safety Equipment, Health & Insurance Cover

INTRODUCTION

Health is defined as “the state of being free from illness or injury”. The World Health Organisation (WHO) extends this definition to explain that health is not just the absence of disease; it also covers the “complete physical, mental and social well-being” of an individual [Wikipedia, 2019]. The condition of being protected from danger, risk or injury can be termed as *safety*. When ‘health and safety at work’ is talked about, it means the things that have to be done to keep people healthy and safe when they are at the workplace.

The surroundings or conditions in which a person lives or operates can be described as the environment of the workplace. A *sound* workplace environment reduces operating costs and improves profitability. When practical ways for saving resources in the environment are implemented, the environment is devoid of potential hazards and pollution; the environment is then described as being sound.

Safety and health of workers is not only an individual’s concern but also an important public interest seen in common hope of improving working conditions. It is therefore important that every organization educate its entire workforce on health and safety related issues. It is a mandatory requirement for companies in specific sectors to enroll their employees for safety training.

“There are a lot of mechanical workshops in Ghana. Like many other artisanal workshops where products and services are delivered, they are confronted with many operational challenges and safety issues” [Shameema et al, 2018]. The Wa Magazine is a typical example of a mechanical workshop located in Wa, the capital of the Upper West Region of Ghana.

A number of different supervision methods are applied in the health and safety of workers as well as the environmental protection of industry, in different countries. The following paragraphs highlight such methods:

In Belgium, “there are internal prevention services and special sections responsible for the supervision of employees. Every Belgian employer is required to establish internal service to prevent accidents and protect work” [Tomaszewski et al, 2012]. The Belgian worker is therefore required to provide at least one counselor in the field of accident prevention.

Health and safety rules concerning occupational health in companies is regulated by the Work Environment Protection Law in Denmark. This law has been in force since 1977. The Work Environment Council ensures the health and safety of employers and workers at work. Also, it analyses the operations of Industry Councils related to occupational safety.

“In Great Britain, the system of labor protection is regulated by the Health and Safety Act, which has been in force since 1974” [Tomaszewski et al, 2012]. The Act has been upheld by the Health and Safety Commission which is a non-departmental public body. The tasks of the Commission include issuing guidelines and advisories, as well as conducting, publishing and promoting research. A very important aspect is to conduct *accident investigations*, including the workplace.

In Ghana, Section 24(1) of the 1992 Constitution states that “Every person has the right to work under satisfactory, safe and healthy conditions...” [The Constitution of the Republic of Ghana, 1992]. The places a duty on every employer to ensure that workers employed by them work under satisfactory, safe and healthy conditions. Subsection (2) of Section 118 of the Ghana Labour Act specifies that [Labour Act of Ghana, 2003]:

“Without limiting the scope of subsection (1), an employer shall:

- Provide and maintain at the workplace, plan, and system of work that is safe and without risk to health;
- Ensure the safety and absence of risks to health in connection with the use, handling, storage and transport of articles and substances;
- Provide the necessary information, instructions, training and supervision having regard to the age, literacy level and other circumstances of the worker to ensure, so far as is reasonably practicable, the health and safety at work of those other workers engaged on the particular work;
- Take steps to prevent contamination of the workplaces by, and protect the workers from, toxic gases, noxious substances, vapors, dust, fumes, mists and other substances and materials likely to cause risk to safety or health;
- Supply and maintain at no cost to the worker adequate safety appliances, suitable fire-fighting equipment, personal protective equipment, and instruct the workers in the use of the appliances and equipment;
- Provide separate, sufficient and suitable toilet and washing facilities and adequate facilities for storage, changing, drying and cleansing from contamination of clothing for male and female workers;
- Provide an adequate supply of clean drinking water at the workplace; and
- Prevent accidents and injury to health arising out of, connected with, or occurring in the course of work, by minimizing the causes of hazards inherent in the working environment.”

Every worker is compelled to use safety appliances, fire-fighting equipment and personal protective equipment

provided by the employer in compliance with the employer's instructions. From the viewpoint of environmental policy, *health, safety, and environmental management systems* are particularly interesting. It can be deduced from these discussions that health, safety, and environmental protection are the cornerstones for an industry's sustainable growth. High-risk activities carried out in Wa Magazine include the following:

- Equipment maintenance operation,
- Electrical operation,
- Hot work,
- Lifting operations,
- Working at heights,
- Hazardous materials handling,
- Simultaneous operations.

In this work, we will assess the health, safety and environmental management in Wa Magazine which has connections to workers' health and safety matters.

OBJECTIVES OF THE STUDY

The main objective of the study was to study and evaluate the health, safety and environmental management at Wa Magazine in the Upper West Region of Ghana.

METHODS

To determine the state of health, safety, and environmental management in Wa Magazine, a selected population of mechanics, electricians and welders were chosen. They fall in both master and apprentice categories. They were randomly chosen at the work site. About seven hundred and twenty (720) workers are estimated to be in Wa Magazine. Structured questionnaires were employed. A total of about four hundred and eighty-three (483) were administered to get the attitude of artisans in health, safety, and environmental management.

The questions were structured to cover the following areas: the availability of personal protective equipment, the use of this equipment, major injuries and their causes, frequency of injuries and the way the work environment is catered for. The effectiveness and usage of the safety systems available were also covered in the questions. The results were then analyzed and compared with standard operating practices.

RESULTS AND DISCUSSIONS

The analysis of the data collected from the respondents is presented in this section.

Safety Equipment Available

Mechanics. The result of 213 mechanics interviewed is shown in Table 1.

**Table 1: Safety Equipment Availability
Result as Answered by Mechanics**

Safety Equipment	%YES	%NO
Steel toe booths	54.5	45.5
Goggles	45.5	54.5
Hand gloves	45.5	54.5
Aprons	68.2	31.8
Helmets	22.7	77.3
Respiratory protection [e.g. nose mask]	36.4	63.6
Hearing protection	59.1	40.9
Scaffolds	27.3	72.7
Fire protection/Extinguishers	63.6	36.4
Electrical safety	54.5	45.5
First Aid Box	72.7	27.3

From Table 1 above, the following safety equipment is generally not put to use: goggles, hand gloves, helmets, respiratory protective devices, and scaffolds.

Electricians. The result of 115 electricians interviewed is shown in Table 2.

**Table 2: Safety Equipment Availability
Result as Answered by Electricians**

Safety Equipment	%YES	%NO
Steel toe booths	41.7	58.3
Goggles	41.7	58.3
Hand gloves	25.0	75.0
Aprons	41.7	58.3
Helmets	15	85
Respiratory protection [e.g. nose mask]	33.3	66.7
Hearing protection	16.7	83.3
Scaffolding	16.7	83.3
Fire protection/Extinguishers	58.3	41.7
Electrical safety	41.7	58.3
First Aid Box	58.3	41.7

From Table 2 above, with the exception of the first aid box, all other safety equipment are not given the needed attention.

Welders. The result of 155 welders interviewed is shown in Table 3.

Table 3: Safety Equipment Availability Result as Answered by Welders

Safety Equipment	%YES	%NO
Steel toe booths	37.5	62.5
Goggles	56.3	43.8
Hand gloves	25.0	75.0
Aprons	37.5	62.5
Helmets	6.3	93.8
Respiratory protection [e.g. nose mask]	37.5	62.5
Hearing protection	43.8	56.3
Scaffolding	43.8	56.3
Fire protection/Extinguishers	37.5	62.5
Electrical safety	31.3	68.8
First Aid Box	62.5	37.5

With reference to Table 3, it can be seen that all safety equipment is not given the needed attention with the exception of the first aid box and goggles.

Work Environment - Protection

The results obtained from the respondents indicate that there is no enough mechanism to protect the environment in which they work. There is no proper disposal of both solid and liquid waste. This observation was made after analyzing the response of almost all the respondents interviewed.

Job Types that can Cause Injury

The job types that cause injury in Wa Magazine are listed in Table 4.

Table 4: Job Types that can Cause Injury

Type of Artisan	Some Common Job Injuries Identified
Mechanics	<ol style="list-style-type: none"> 1. Hammering. 2. Screw driver usage. 3. Working under vehicles. 4. Loosening and tightening of bolts. 5. Removal of car engines. 6. Dismantling car engines. 7. Working on suspension systems. 8. Working on brake drums. 9. Checking alignments. 10. Jacking a car.
Welders	<ol style="list-style-type: none"> 1. Chiseling a plate. 2. Hacksaw usage. 3. Soldering. 4. Grinding. 5. Hammering.
Electricians	<ol style="list-style-type: none"> 1. Fixing electrical appliances. 2. Wiring. 3. Changing battery water/acid. 4. Removal of magnets. 5. Using wire cutter.

We are not surprised at the operations and activities of artisans in Wa Magazine that cause injuries. Some specific injury types associated with the jobs above include fractures, major and minor cuts, burns, electrical shocks, particles falling into eyes during filing, headaches, etc. The most prevalent amongst these injuries are burns, fracture, cuts and electrical shocks, which usually occur daily. From the analysis of the results in Table 1, we concluded that artisans do not have access to life-saving safety equipment and tools. It is therefore not surprising that artisans are faced with all the injuries recorded above.

Training on Health, Safety and Environmental Management

The response of the respondents regarding health and safety training is summarized in Table 5.

Table 5: Training on Health, Safety and Environmental Management Summary

Artisan	%YES	%NO
Mechanics	72.7	27.3
Electricians	66.7	33.3
Welders	68.8	31.3

From the result above, it can be seen that artisans are given training on safety and environmental management. What we find worrying is that they are not implementing the skills acquired during the training. This is partly due to the unavailability of safety equipment and tools for use by these artisans to curb some of the basic accidents already mentioned.

Insurance and Liability Cover

Insurance cover reduces or eliminates the cost of loss or effect of loss caused by different types of risks. It was discovered that there is no insurance and liability cover for the artisans. In the absence of insurance, artisans will have to take care of all damages and losses that may arise during their day to day activities.

CONCLUSIONS

This research assessed the knowledge of artisans of Wa Magazine on management regarding health, safety, and environment. The contributions of these artisans to the local economy cannot be overemphasized. They fix problems of our motor vehicles, cater to their families and train younger ones who would otherwise find themselves on the streets. This work used survey research design by applying a semi-structured questionnaire as the main data collection tool. From the results, it could be seen that artisans at Wa Magazine are not completely ignorant on health, safety, and environmental management. Artisans had some basic education on the subject and most importantly on the use of personal protective equipment (PPEs). Also, their knowledge of laws regarding these safety management issues was limited. Most of them do not have measures to cater to the environment. There were no drainage systems for large oil spills among others. There a challenge on the implementation of the little they know. Hence there is not much improvement in the health, safety and environmental management. Artisans in Wa Magazine need regular training that should include: Education on laws regarding health, safety, and environmental management, why safety equipment must be used, factors to consider in choosing particular safety equipment, management, and storage of this safety equipment, standard operating procedures (SOPs) and most significantly environmental protection. The training needs to be followed by policies and enforcement mechanisms. There was a complete disregard for insurance cover for their properties and personnel. On the contrary, most of the vehicles the mechanics were working on had valid insurance stickers on them.

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REFERENCES

1. World Health Organization. (2006). Constitution of the World Health Organization – Basic Documents, Forty-fifth edition. Retrieved January 2019, from Wikipedia: <https://en.wikipedia.org/wiki/Health>.
2. Shameema A. Issahaque and Zakaria Abdul-Rahaman (2018), "Quality Improvement of Informal Mechanical Workshops at Wa Magazine in the Upper West Region of Ghana ", International Journal of Management Information Technology and Engineering (BEST: IJMITE), Vol.:6, No.:07, pp. 25-30.
3. J. Tomaszewska and E. Ignaciuk (2012), " Occupational Safety and Health in Selected Countries of the European Union", Вестник ХНАДУ, вып Vol.:59, pp. 75-79.
4. Parliament of Ghana. (1992). The Constitution of the Republic of Ghana, 26.
5. Labour Act, Ghana. (2003, Act 651). 37.

