

Work Safety Management for Optimization Production Process

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Abstract

The safety at work of employees is not always viewed with due importance. However, with the help of technology, such as E-social, the government system that organizes companies to communicate in a unified way as information for their employees, it executes with whom employers comply with strict safety standards. The main objective of this article is to demonstrate that occupational safety management improves accident rates in the company through actions on enforcement methods that are the basic causes of accidents. What's more, quality, management, costs and other values are better through behavioral changes. Within the Thematic service, we seek or develop conscientious and motivated employees, as a safe environment must be in place to support safe working employees. Therefore, after the implant or safety management system, you can reduce a satisfactory reduction of work accidents and get good results in the production process.

Keywords: Safety Management, Work Accident, Accident Index, Productive Process.

1. Introduction

Currently, the subject of occupational safety is a theme that is widespread in all segments, even though still at different stages in each area. Regardless of the size of the organization, this issue is highlighted in the routine of any company, as social responsibility and concern for the well-being of employees and their families are much discussed today.

Brazil is no example when it comes to worker safety. Statistics from the ILO (International Labor Organization), prove this unpleasant condition that puts us among the countries that recorded accidents at

work in the world, a position it could be even worse if all accidents were reported, meaning many accidents do not are recorded and many omitted for their seriousness, thus circumventing the true result of these statistics. ILO data report the occurrence of over 1.2 million deaths from work-related injuries worldwide. Given the above, it is necessary to prioritize actions and adopt stricter policies for the prevention of risk factors in the workplace.

2. Reference Theoretical

2.1. Workplace Safety

Occupational safety is a science that aims to promote the protection of workers in their workplace, aiming at reducing work accidents and occupational diseases. In Brazil, safety at work is defined by rules and laws and described as Specialized Safety Engineering and Medicine (SESMT), regulated by an ordinance of the Ministry of Labor and Employment (MTE), Regulatory Standard 4 (NR-4), in addition to the international conventions of the International Labor Organization (ILO), ratified by Brazil.

According to this Regulatory Standard of the Ministry of Labor and Employment, must have necessarily with Occupational Safety professionals all private and public companies, public agencies of the direct and indirect, and the legislative and judicial powers, possessing employees governed by the Consolidation Labor Laws (CLT) and which fit into Annex II of NR 4, which measures the SESMT. In addition to being mandatory, Occupational Safety organizes activities, prevents accidents and shows employees the concern of the company with their health and well-being. This increases employee productivity, helps motivate and thus brings many benefits to companies. .

For organizations to be competitive, it is necessary to implement preventive measures that result in a pleasant and safe work environment for their employees.

Safety at work is a major issue, which is not applicable only to workers but also to business and society in general, as an injured worker, in addition to personal suffering, causes costs to the health system and starts to receive their rights social security, which are paid by all workers and companies (LIDA, 2005, p. 421).

2.2. Work Accident and Occupational Disease

As provided in art. 19 of Law 8,213 / 91 work accident is what occurs through the exercise of work in the service of the company or the exercise of the work of the insured referred to in item VII of art. 11 of said Law, causing bodily injury or functional disturbance that causes the death or loss or reduction, permanent or temporary, of work ability. Occupational diseases are those triggered by the work activity performed by the Insured. Occupational diseases are considered as occupational accidents and are divided into occupational and occupational diseases.

In general, it can be said that accidents within an industry are mainly characterized by losses. These are not only of physical integrity, but also of materials, equipment and company image, depending on the events (SAMPAIO, 2002).

Occupational Diseases: are those arising from situations common to members of a particular professional category of workers. They are listed in Annex II of Decree 3,048 / 99 or recognized by the Social Security;
Work Diseases: are those acquired or triggered due to special conditions under which work is performed.

It is directly related to the conditions of the environment, that is, the professional activity developed is not the cause of any disease or functional disturbance, but the conditions of the environment that surrounds the insured.

2.3. Work Safety and Productivity

In the past, the issue of “Safety at Work” was not much discussed or implemented in production areas, as the priority was based solely on profit and productivity. Nowadays the vision is another one, in which, besides promoting a safe work environment, is a legal obligation of the companies, it is through the investment in the people that the economic objectives are reached. Thus, safety conditions in the workplace are extremely important and directly affect both employee quality of life and productivity, and one of the main causes of loss of results in many companies is the absence of employees due to health problems. , either due to occupational disease or occupational accident. This can mean anything from a posture problem to an unsafe act or condition. In such cases, the professional may have to be absent in a crucial period or even become invalid for a long time. By investing in safety, the company also contributes to improving the quality of life of employees, which reduces the chances of them getting sick. With better health, they can keep up the pace of work over time, avoiding potential damage to their business and thus maintaining the required productivity.

Reducing the risk of accidents and health damage is also very important for your team's productivity, and being under some form of constant stress can at least take your employee's focus away from work. By removing this concern from employees, it will be easier to keep their focus on tasks. The immediate result here is the higher productivity of the group, delivering more customer value and improve your sales. In a short time, this can easily offset the initial investment in security. This way both business and employees can benefit.

The concept of productivity was introduced and developed in organizations to assist, evaluate and improve their performance. Initially, productivity was calculated by dividing the result of production and number of employees. Other ways of measuring productivity appeared over time when comparing production output with the use of other resources, eg energy, raw materials, inputs, among others (Singh et al., Apud KING, 2007).

3. Materials and Methods

For the development of the work were necessary bibliographic bases for the study in order to get a better understanding of the problems faced in the referred industry, in order to find and eliminate the root cause of the problems. Concepts focusing on work safety management for increased productivity and articles were considered relevant research to advance the work.

The research will be field research, where all the necessary information was collected to be able to carry out the current article that aims to create a health and safety management at work in order to make employers more aware to invest in the safety of their employees. This paper presents graphs that show the accident rate before and after the implementation of the work safety awareness work.

Observations were carried out on the spot, and documents were analyzed, especially those related to

procedures and work instructions related to Occupational Health and Safety in which we sought, to verify which OSH management practices are developed in the company, highlighting their best initiatives and the main difficulties.

The company is certified according to ISO 9001 (Quality Management System), and its OSH system is based almost exclusively on regulatory standards established by the Ministry of Labor. The considerable effort made by the security technician in the performance of his duties stands out, and one of his major complaints is the failure of some employees to comply with the established safety rules. This resistance, most of the time, starts in middle management, which ends up generating conflicts with other employees, who are not obliged to follow them either. The safety technician's work is developed individually with each manager, according to the level of acceptance of safety-related norms and procedures, always trying to develop a personalized work program to instill the safety culture in the most resistant. The company has 112 employees and risk level 3 due to its classification and according to NR 4, has the SESMT correctly sized for its structure and activities.

The organization does not have trained operators, they perform their activities without proper safety training for each area, corrective, preventive, predictive maintenance procedures are out of date, and a daily checklist for workers' health and safety is not in place. being performed.

The main difficulties faced by the Company in OSH management are presented below:

Resistance to change, Difficulty in elaborating safety procedures and instructions, Absence of occupational safety and health performance indicators, Low employee awareness rate, Lack of safety training for employees, employee turnover.

To solve the problems mentioned, it was necessary to create an action plan in order to implement the Safety procedures, and with the OSH system in place in the company, the number of employees removed due to work accidents and occupational diseases would reduce considerably. Expenditure on hiring replacement workers would also reduce.

It is noteworthy that when an operator leaves, it is necessary to replace him, where a new operator will be trained and able to perform the activities with the same knowledge and agility of the injured employee after some time, and during this route productivity will be affected. by the lack of agility of the new operator, learning of the process, and consequently the quality of the products will be affected.

4. Application of Study

4.1. Company Characterization

The research was conducted in an industry of the Manaus Industrial Pole, where its main follow-up is the metallurgy and assembly of gymnastics equipment, where it has the welding, blasting, painting and equipment assembly processes.

The company faces some types of problems related to low productivity. One of the main reasons is the high turnover of process operators and absence due to work accidents, directly affecting the production process. And this happens because the official operator of the post, needs to leave work due to work accident, and the main cause for the occurrence of these accidents is the lack of Occupational Health and Safety Management in the company. And in order to minimize the number of occupational accidents and sick

leave, there was a need to implement OSH Management.

4.2. Main Reasons for Accidents at Work

The productive sector of the company is composed of the production and metallurgy sector, being concentrated in these two sectors the largest number of employees with registered work accidents, where the main reason for these accidents is the unsafe condition imposed on workers. There are two basic components involved in workplace accidents: the human factor and the environmental factor. The human factor can act through individual predisposition for the occurrence of physical, psychic, family and professional problems, while the environmental factor is evidenced when the worker is exposed to certain external agents that, when they manifest, cause the morbid event.

The problem of accidents in the workplace becomes even more worrying when it is already known that it can be easily avoided by adopting preventive measures that are simple and cost-effective.

Below we list the sectors with occupational accident occurrence during the year 2018:

Table 1: Accidents at Work by Sector

WORK ACCIDENT BY SECTOR Period Jan / 2018 to Dec / 2018	
Sector	Accident Amount
Metallurgy	9
Production	6
Maintenance	4
Engineering	1
Materials	1

5. Results and Discussions

5.1 Plan of Actions and Improvements Applied to the Process

After the identification and follow-up of the failures, action plans were made to minimize occupational accidents, and consequently the increase of the production process.

Table 2: Action Plan Implementation Schedule

Occupational Health and Safety Management Implementation Schedule - OSH				
Item	How will it be done?	When?	By whom?	Status
Presentation of the company's OSH system to managers.	It will be individually presented to each manager the importance of deploying the OSH system, and how it will positively affect productivity.	Jan / 2018	Occupational Safety Technician	Accomplished
Elaboration of the OSH Procedure.	The Integrated Management System (SGI) sector, in partnership with SESMT, will elaborate the security procedure that presents	Jan / 2018	SGI / SESMT	Accomplished

	guidelines to be followed to maintain the safety of all, taking into consideration the Regulatory Standards (NR's).			
Presentation of the OSH procedure to all employees of the company.	There will be an integration with all employees, where the OSH procedure and its real importance will be exposed. Everyone should sign the list of presence in the integration making the procedure aware.	Jan / 2018	SESMT / SGI	Accomplished
Conducting Weekly Security Dialogue - DSS.	Every week a meeting will be held with the sectors to report on the safety facts of the previous week, such as: Accidents occurred, Incidents, unsafe conditions, etc.	Jan / 2018	SESMT	Accomplished
Holding of the Internal Work Accident Prevention Week - SIPAT.	During a week there will be activities, lectures, dynamics and phrase contest, all aimed at job safety. The aim will be to make employees aware of working safely to avoid accidents.	Feb / 2018	SESMT	Accomplished
Performing Gymnastics in all sectors of the company.	Work gymnastics will be performed in the company sectors. The idea is to use gymnastics to relax the body and mind of the workers. Occupational gymnastics is primarily responsible for reducing expenses for sick leave and work accidents. It also favors increased productivity and quality of service.	Feb / 2018	SESI	Accomplished
Conducting safety training.	Safety training will be provided to all employees according to the risk of their work area.	Feb / 2018	SESMT	Accomplished

Source: Author

5.2. Changes in Employee Routine for Implementation of Action Plan

For the action plan to be implemented, it was necessary to change the routine of employees, seen as the biggest barrier to be faced by removing them from their comfort zone, but we gradually achieve success in raising awareness of all.

In the previous form, the use of PPE was not mandatory and few use the equipment that guaranteed their safety. Now everyone is required to wear their protective equipment, and this awareness has been realized through integration with everyone, showing the importance of using it and the consequence of not using it in both physical and disciplinary areas.

No occupational gymnastics were performed with the employees, now every day occupational gymnastics are performed separately by sector, since each sector has its gymnastics plan prepared according to the SESI gymnastics teacher schedule, after the participants performed the gymnastics sign the attendance list. At the end of each week, a gymnastics participation report is made by sectors and sent to the company's

managers and director.

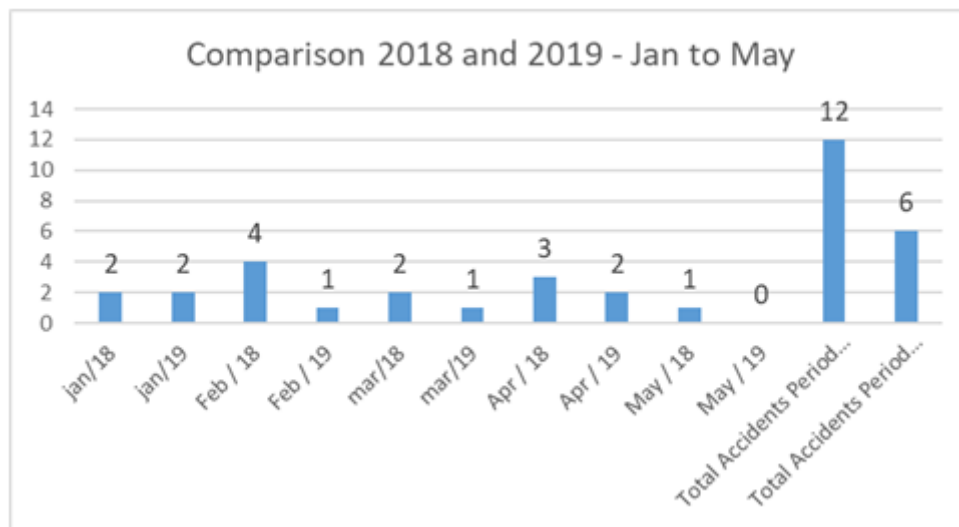
The security survey is being conducted daily, which consists of checking all sectors to identify unsafe conditions and acts that may put the safety of employees at risk. When the risk is identified, a safety inspection report is issued which is then sent to the area manager and company director. In the report, the area manager is requested to correct and eliminate the risk condition. After correcting the problem, the report is finalized. Every end of each month is presented at the indicators meeting the sectors in which there were the most occurrences, which makes managers supervise any condition that may cause their sector to receive any non-compliance.

The Weekly Security Dialogue (DSS) is being held weekly, which addresses issues related to security events during the week. This meeting gives everyone the opportunity to share their ideas and opinions to improve everyone's safety.

The 1st Internal Work Accident Prevention Week (SIPAT) was held, with the theme, Live Health and Safety and have Quality of Life. During the week we address extremely important issues that aim to raise awareness and sensitize everyone about the importance of working safely to achieve a better quality of life. The acceptance was satisfactory and with 95% participation of the company's employees. After SIPAT, employees came to the SESMT sector to thank them for the event never before and hoping for more events of the same size.

5.3. Discussion of Results

After the implementation of the improvements, work accident statistics were verified over a period of 5 (five) months.

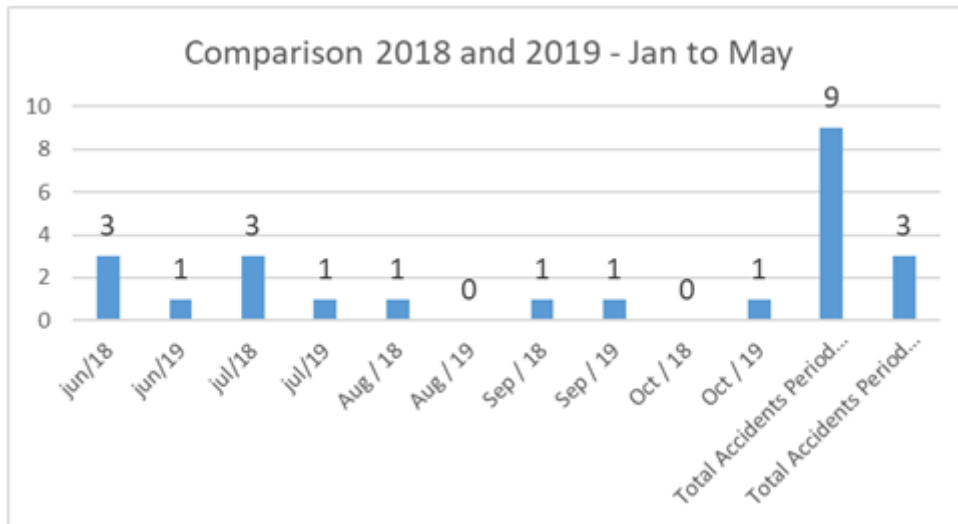


Graph 1: Graph of Accidents at Work from January to May 2019 compared to the same period 2018

Source: Author

As shown in the chart demonstration, the reduction of accidents after the implementation of OSH management was satisfactory, resulting in a 50% reduction in the reduction of occupational accidents.

In order to conclude the effectiveness in the implementation of the improvements, another statistical survey was conducted to compare with the same period of the previous year.



Graph 2: Graph of Accidents at Work from June to October 2019 compared to the same period 2018

Source: Author

From this it can be inferred that with the implementation of the occupational health and safety management system, the accident rate has reduced satisfactorily.

Table 3: Sum of annual Work Accidents

Accidents at Work in 2018 (Period from January to October)	Accidents at Work in the year 2019 (Period from January to October)
Total 21 accidents	9 accidents total

Source: Author

6. Final Considerations

As presented in the study, the methods used prove their efficiency and effectiveness in system deployment. Accident rates at work decreased significantly compared to the same period of the previous year, as shown in the graphs.

In line with its intended purpose, the work achieved its goal by demonstrating that when there is a management in occupational safety, accidents consequently reduce, providing a safe and harmonious working environment, so that operators can work quietly aware that their safety is protected. and the production plan will continue as planned, reaching the end of the month with its goal reached, zero accident and production plan completed.

7. Theoretical Reference

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