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OCCUPATIONAL RISK MANAGEMENT IN THE TRANSPORT COMPANY

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Abstract: The purpose of risk analysis is to provide a concrete basis for risk decisions that can be made as part of the risk management process in comparing the risk outcomes with risk acceptability criteria. The main objective of the occupational risk assessment presented in the paper is to provide employees with effective protection of the health and life of employees against hazards occurring in the work environment, as best as possible under specific conditions.
Keywords: occupational health and safety, management, worker, logistics

1. INTRODUCTION

Occupational risk assessment consists in carefully checking what may harm or cause harm to employees in the workplace. It allows you to verify that sufficient risk mitigation measures have been taken and, if not, commission them. As a result of these activities, the probability of accidents and occupational diseases in the company will decrease.

Risk management is an ongoing process. Its purpose is to improve risk recognition and management, that is, to detect health hazards and to take appropriate corrective and preventive actions (PIP, 2021).

Assessment and documentation of the occupational risk is the employer's obligation specified in the Labour Code (Article 226), according to which the employer:

- assesses and documents the occupational risk related to the performed work and applies the necessary preventive measures to reduce the risk;
- informs employees about the occupational risks associated with the work performed and principles of protection against threats.

The occupational risk assessment should be carried out taking into account all aspects of work in order to present the hazards in the work environment that may cause injury or deterioration of the employee's health. In the assessment presented, it should be noted whether the risks at the workplace can be eliminated or if it is not possible, it is necessary to indicate such activities that guarantee the maintenance of occupational risks at an acceptable level. Correctly performed assessment is to

prevent harmful effects resulting from the presence of hazards in the work environment (Jonkisz et al., 2016).

Occupational risk assessment is not only a formality required by law, but above all an obligation that makes sense. Its proper conduct will reduce the occurrence of accidents and occupational diseases in every company. We should remember that the lack or improper conduct of occupational risk assessment may result in accidents at work and occupational diseases. Their effects affect both the victims and their families, as well as employers, who suffer various consequences (mainly financial).

Occupational risk is the probability of an event threatening the health of the caused employee this event. Consequently, they may vary the severity of an injury, illness or deterioration of health worker's. According to the law (ordinance of the Minister of Labour and Social Policy of September 26, 1997 on general matters occupational health and safety regulations) occupational risk has been defined as the probability of occurrence adverse work-related events causing losses, in particular the occurrence of unfavourable health effects to employees as a result of occupational hazards occurring in the work environment or the manner of performing work. The definitions of occupational risk, irrespective of how they are formulated, simultaneously involve two elements: - the probability of an injury, illness or psychophysical deterioration as a result of the work environment threats and their consequences. This risk is borne by the employee in connection with the work performed by him (Krause, 2016; Jonkisz et al., 2016).

The occupational risk assessment should be carried out taking into account all aspects of work in order to present the hazards in the work environment that may cause injury or deterioration of the employee's health. In the assessment presented, it should be noted whether the hazards occurring at the workplace can be eliminated or if it is not possible, it is necessary to indicate such activities that guarantee the maintenance of the water risk at an acceptable level. Correctly performed assessment is to prevent harmful effects resulting from the presence of hazards in the work environment.

The organization of activities related to the occupational risk assessment in an enterprise has a decisive impact on the effectiveness of the occupational risk assessment, which is primarily expressed in increased awareness of the occurring hazards and the need to apply the provided protection measures, and consequently leads to an improvement in occupational health and safety (Młyńczak, 1997).

The main goal of the paper is to identify and analyse results of the occupational risk assessment related to work placement of the logistic specialist in the transport company.

For organizing risk assessment at the workplace hazards in the environment must be identified work. Use a simple line to identify hazards a method using previously developed checklists, developed for individual workplaces on which harmful, dangerous and burdensome factors are listed. On the basis of the collected information on hazards, an analysis is carried out to answer the questions: what harmful, dangerous and nuisance factors are in order to organize the risk assessment at the workplace, identify hazards in the work environment. A simple method using previously developed checklists should be used to identify hazards, developed for individual workplaces with harmful, dangerous and burdensome factors listed. Based

on the collected information about threats, an analysis is carried out to answer the following questions: what harmful, dangerous and nuisance factors are the source of the threat? And who is exposed to these factors? (Krause, 2016).
The paper presents results of the risk analysis that is part of the risk assessment and management processes and consists of scoping, hazard identification and risk assessment. Generally, the threats can be classified into the following categories of threats: natural, technical and social. When analysing the risk associated with the production activity of the enterprise, one should take into account the threats that occur in connection with each other: man - technical object – environment (Knop et al., 2017).
The goal of the paper is also to indicate solutions to improve the health and safety conditions on the chosen work placement in the transport companies group from SME sector.

2. RESEARCH METHODOLOGY

Risk analysis is a tool to identify different types of risk and approaches to solving related problems. The results of the risk analysis are helpful the employer when assessing the tolerable level of risk and choosing between measures to reduce or avoid potential risks. In common understanding, the occupational risk of any human activity is associated with the possibility of incurring a loss. It is a consequence of the occurrence of threats. The key benefits of a risk analysis to the decision maker include:

- systematic identification of potential threats and types of damage,
- quantitative risk determination,
- determination of possible modifications that reduce the risk or increase the reliability,
- identification of important factors influencing the risk,
- help with prioritization for increasing the level of health and safety.

The occupational risk assessment can be carried out in the following five steps (CIOP, 2021):
Step 1: Identify the threats.
Step 2: Determine who may be injured or sick.
Step 3: Estimate the occupational risk arising from the hazards and assess whether the applied protective measures are appropriate and whether any further measures should be taken to further reduce this risk.
Step 4: Document the results.
Step 5: Periodically review the occupational risk assessment and revise it if necessary.
The analysis of the risk assessment was prepared on the basis of documentation of occupational risk assessment in the chosen SME sector transport companies in Silesian region for administrative and office positions work placement in the field of logistics.
The performed risk assessment is aimed at enabling (Jonkisz et al., 2016):

- identify work-related hazards that may be the cause of accidents at work, occupational disease or other health ailments among employees and determining

whether the occupational risk related to these hazards can be considered acceptable or not and how to minimize them,
- checking whether the currently used protective measures against the risks in the workplace are appropriate,
- setting priorities to eliminate or reduce occupational risk, if necessary,
- make an appropriate selection of workstation equipment, materials and work organization,
- stating that the applied measures of collective and individual protection, as well as changes in technology, methods and organization of work, undertaken in order to reduce the occupational risk, serve to improve the safety and health protection of employees.

Threats can be grouped in terms of (Młyńczak, 2009):
- natural hazards (the factors involved are not dependent on the human factor, this is energy located in the natural environment),
- technical risks (these are industrial devices, machines, structures, transport systems, products common use, pesticides, etc.),
- organizational threats (improper organization of work,

improper supervision, routine, rush, distraction),
- personal hazards (uncontrolled movements and the effects of force

muscles and body weight).

3. RESEARCH FINDINGS AND DISCUSSION

First element of risk assessment is documentation of the work placement characteristics including list of tasks realised in the field of logistics.

An office worker is a person who provides organizational and administrative services to the office and performs office work consisting in drawing up and conducting office correspondence. It collects, records and processes information necessary to perform the tasks of an organizational unit. The logistics workstation is located in a separate room.

An employee employed as a logistics specialist performs his work in a room lit by natural and artificial light. Gravity ventilation is provided in the room. The employee works most of the time at the computer, additionally, depending on the needs, operates other office devices. When working in the office, the employee has sufficient space to place all manually operated elements within easy reach. In the work room there are stable cabinets and shelves with documents. The office is equipped with: computer, printer and telephone, all within easy reach of the employee. In addition, this employee uses a photocopier and document shredder during his work. Work in this position takes place in a one-shift system.

Logistics work tools are primarily office and other devices: desktop computer, screen monitor, laptop, multifunction device (printer, scanner, copier), telephone, projector. General requirements for the work of logistics are presented in Table 1.

Table 1
General requirements for the logistics work placement

Training in the field of health and safety	General training	Before being allowed to work
	On-the-job training	Before admission to work and the employee transferred to a position where there is exposure to factors harmful to health, burdensome or dangerous
	Periodic training	Every 6 years
Preventive medical examinations	Introductory	Before being admitted to work and "preliminary medical examinations, subject to the reservation, are subject to employment with another employer for a given position within 30 days after the termination or expiry of the previous employment relationship, if they have a valid medical certificate stating that there are no contraindications to work in the working conditions described in the referral. for medical examinations and the employer determines that these conditions correspond to the conditions prevailing in a given workplace, with the exception of people hired to perform particularly hazardous work. Art. 229. KP §11 point 2.
	Periodic	According to the recommendations of the occupational medicine physician and psychologist

One of the elements of the job description is also the description of the room in which the work is carried out. Description of the office must meet regulation of the Labour Code and related law regulations. Elements of equipment in the office must be prepared according to specificity of the work placement and workers physician conditions in the field of the following elements: capacity of the office, room height, floor, natural and artificial lighting, ventilation, the width of the aisles between devices. The results of the occupational risk assessment are presented in Table 2.

Table 2
The occupational risk assessment for work placement of the logistics

No	Work hazard	The source of the work hazard	Potential Effects	Used preventive measures	The level of risk after taking preventive measures		
					The severity of the aftermath	Probability	Risk
1.	Contact with sharp tools and utensils	Using sharp tools, objects used in office work - the possibility of jamming or stinging as a result of not maintaining sufficient caution and concentration on the activity being performed.	Cuts, pricks, wounds of arms and hands	Be careful, reduce your haste. Use only efficient tools for work. After finishing work, protect the sharp tool against accidental contact.	M	M	BM
2.	Crush	The cabinet with documents tipping over.	Crushing, fractures, internal injuries.	Proper assembly and arrangement of cabinets and shelves according to the manufacturer's guidelines	Ś	M	M
3.	Hit by moving vehicles (human contact with vehicle)	Moving around the parking lot on the way to the company car.	Contusions, fractures, internal injuries, head and limb injuries	Move only along designated communication routes.	D	M	Ś

4.	Road accident (vehicle-vehicle contact)	On-site visits at the customer's site, on-site visits on external installations - driving a vehicle for business purposes.	Head and limb injuries, cuts, bruises, fractures, death.	Only issue driving orders to employees entitled to drive. Compliance with road traffic regulations. Fastening seat belts. Make phone calls while driving using a hands-free kit only.	D	M	Ś
5.	Fall on the same level (stumble or slip)	Wet, slippery floor area of administrative and office premises due to liquid spillage. Wet surface of the floor as a result of cleaning works. Contamination of the floor in the form of snow or mud occurring as a result of entering the rooms directly from the outside area. Items left at the aisles and access to work stations. Differences in floor levels, steps, thresholds, cable trays. Loose cables on the floor surface.	Limb fractures, body contusions, torn muscles and tendons, concussions, internal injuries	Maintaining cleanliness and order at workstations and passages. Reporting water or other fluid leaks to area responsible. Marking wet surfaces with a warning sign. Marking the thresholds and differences in ground levels with safety colors..	Ś	M	M

6.	Fall to a lower level	Incorrect reaching of items from the shelves of bookcases and wardrobes when using a chair. Walking up the stairs located in administrative and office buildings.	Limb fractures, body contusions, torn muscles and tendons, concussions, internal injuries	Holding the handrail when walking up the stairs. Providing platforms or ladders to allow items to be reached safely.	Ś	M	M
7.	Hitting a stationary object	Limited spaces at office workstations, as well as at the aisles and accesses to them. Protruding elements of work station equipment, e.g. desks, tables, wardrobes, shelves, open drawers.	Bruises, cuts, abrasions, fractures.	Proper organization of work stations. Provide the required width of passageways and access to work stations. Ensure the patency of transport roads and pedestrian communication routes. Maintain order at work stations, do not leave open drawers and cabinets.	M	Ś	M
8.	Hit by falling object	Unsecured items stored in office cabinets - the possibility of an item falling or knocked down by itself.	Crushing, fractures, internal injuries.	Do not store items with a risk of falling loose on the surface of the cabinets.	Ś	M	M
9.	Overload of the musculoskeletal system	Forced working position	Back pain, back pain, shoulder pain, neck pain, joint pain, pain in the legs, wrists, forearms.	Organizing the workplace in accordance with the principles of ergonomics, frequent breaks and alternating work at the computer with other activities.	Ś	M	M

10.	Contact with hot surface	Prepare, brew or carry hot beverages. Laminating documents (handling the laminator) - possible contact with the hot surface of the laminated material.	Thermal burn of the upper limbs and exposed parts of the body, burn of the face.	Follow the laminator's instruction manual. Be careful and reduce your haste when brewing hot beverages.	D	M	Ś
11.	Fire	Smoking in forbidden places or using open fire by unauthorized persons. Damage to the electrical system or its overload.	Burns to skin and respiratory tract, smoke poisoning, death.	Determining and complying with the smoking ban in the building. Compliance with the building's fire safety instructions and guidelines for the assessment of explosion risk in designated zones. Protection of the electrical system against overload and short circuit. Provision of a fire alarm system and handheld firefighting equipment.	D	M	Ś

12.	Electric shock	Possibility of electric shock through indirect contact as a result of damage to the insulation of active conductive elements and the application of voltage to the housing of the electrical device. Accidental contact with active conductive elements of electrical devices as a result of damage or disassembly of the housing or failure to secure the electrical installation equipment with plugs, masking panels, etc.	Skin burns and internal burns, sudden cardiac arrest, death.	Providing protection against electric shock and periodic inspections of its effectiveness. In the event of damage to an electrical device or components of the electrical installation, notification must be made immediately to the person responsible. Damaged electrical equipment, which poses a risk of electric shock, should be immediately disconnected from the power supply and marked with an inscription informing about the failure of the device and the prohibition of switching it on again. Provide good technical condition of devices and fittings of the building's electrical installations.	D	M	Ś

13.	Inadequate lighting	Working with a screen monitor over 4 hours a day - computer skills. Reading, filling out documents, writing that requires eyesight concentration. Inadequate or insufficient lighting of the workplace.	Poor vision, visual impairment	The use of liquid crystal monitors characterized by a reduced emission of optical and electromagnetic radiation. Organization of a computer station in a way that reduces the reflection of light and the phenomenon of glare. Providing lighting of the station in accordance with the standards. Compliance with breaks at work.	Ś	Ś	Ś
14.	Contact with a chemical	Ozone, nitrogen oxides emitted by office equipment, e.g. copiers, laser printers - the possibility of poisoning. Paper dust, dust, cleaning agents, cigarette smoke or air pollution from a faulty ventilation system.	Irritation of the upper respiratory tract, allergies, headaches, poisoning.	Provision of ventilation of work rooms. Determining and complying with the smoking ban in the building's premises.	M	M	BM

15.	Biological hazards (the influence of bacteria, viruses, fungi, molds)	Contact with colleagues - the possibility of infection by droplets, inhalation or touch. Mold and fungus spores that may be present in the air as a result of inefficient or inefficient ventilation of work rooms and increased air humidity.	Colds and flu. Allergic reactions, respiratory system ailments.	Provision of ventilation of work rooms. Providing access to hygienic and sanitary facilities and cleaning products. Frequent hand washing. Provision of ventilation of work rooms. Provision of periodic inspections of the chimney and ventilation systems, as well as regular service of air-conditioning devices constituting office equipment.	M	Ś	M
16.	Noise	Work of office equipment.	Nervous system diseases, distraction, increased blood pressure, irritability, headaches.	The use of operational office equipment. Inspection of the technical condition of office equipment.	M	M	BM

17.	The load on the motor organs.	Non-ergonomic workstation with a computer - incorrect setting of the monitor, chair that cannot be adjusted, unadjusted desk height.	Musculoskeletal disorders, muscle and joint pain, injuries.	Taking into account the principles of ergonomics in the organization of workplaces. Providing the possibility of adjusting the computer workstation to the individual predispositions of the employee by setting the appropriate height of the monitor screen, placing the mouse and keyboard, and adjusting the height of the chair.	Ś	Ś	Ś
18.	General burden on the body	Time pressure and the requirements of superiors. Overtime work.	Body fatigue, prone to accidents and making mistakes.	Compliance with breaks at work. Compliance with the norms of working time, daily and weekly breaks, and the use of holiday leaves.	M	Ś	M

19.	Electromagnetic radiation	Working at the computer	Headaches, rashes, redness, watery eyes.	Appropriate setting of the monitor, adjustment of the intensity in accordance with the applicable standards. Increase the relative humidity, apply screen filters if necessary, and take breaks from work at the computer.	M	M	BM
20.	Stress, conflict situations, mental strain	Responsibility for the work performed, the entrusted property, and above all for the actions and decisions taken. Conflicts in relations with superiors and colleagues, possible aggression. Mobbing.	Emotional disorders, exhaustion of the body, the possibility of beatings and injuries.	Organization of integration meetings and adherence to the principles of social coexistence. Counteracting mobbing.	M	Ś	M

Symbols used in the occupational risk assessment (Table 2) have been explained in Table 3.

Table 3
The occupational risk assessment for work placement of the logistics

THE RISK	**THE SEVERITY OF THE FOLLOWING**		
PROBABILITY	**M** – small	**Ś** – medium	**D** – large
M – small	**BM** – very small	**M** – small	**Ś** – medium
Ś – medium	**M** – small	**Ś** – medium	**D** – large
D – small	**Ś** – medium	**D** – large	**BD** – very large

Results of the occupational risk assessment for work placement of the logistics show medium potential risk within Used preventive measures in the analyzed SME transport companies. High severity of the aftermath was noted within: contact with vehicles on the paring, road accident (vehicle-vehicle contact), fire hazard situations and electric shock. In the above-mentioned situations, it was recommended to move only along designated communication routes and to issue an order to leave for business purposes only to employees authorized to drive. It is also important to comply with road traffic regulations on the premises of enterprises.

4. CONCLUSION

The result of hazard identification may be, in particular, the full identification of hazards at the workplace or an indication of those hazards and / or areas for which persons designated to assess the occupational risk may conduct it on their own, based on the collected information and those hazards and / or areas for which the risk is vocational assessment can be assessed after obtaining additional information or with the help of additional experts.

Documenting the occupational risk assessment does not mean it effective performance. It is necessary to ensure that the results of the occupational risk assessment are used in planning risk mitigation actions and these actions will be implemented. Providing information on the results of the risk assessment to employees, as well as ensuring monitoring of the effectiveness of the applied measures to protect against threats and review, and if necessary - verification of the assessment.

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