

## Safety risks management in the road transport

*Key words: road transport, risk, hazard, assessment, safety, health protection, risk management, driver, working time, work specification*

### Abstract

*Transport is a key factor in the development of nowadays society, which in itself is not an end but a means of economic development and a prerequisite to achieving social and regional cohesion. Rapid development of road transport is increasing the risks arising from the specific area of activity. Comprehensive improve safety at the beginning of the 21st century one of the most important tasks of any advanced country, and hence every responsible company. Statutory risk management and safety and health at work allows an employer or independent undertakings create an optimal relationship between economy and safety while respecting the employer's responsibility for safety.*

### ZARZĄDZANIE RYZYKIEM BEZPIECZEŃSTWA W TRANSPORCIE DROGOWYM

#### Streszczenie

*Transport jest kluczowym czynnikiem w rozwoju współczesnego społeczeństwa, co samo w sobie nie jest celem, ale środkiem do rozwoju gospodarczego oraz warunkiem wstępnym do osiągnięcia spójności społecznej i regionalnej. Szybki rozwój transportu drogowego zwiększa ryzyko wynikających z określonego obszaru działalności. Kompleksowa poprawa bezpieczeństwa na początku 21. wieku jednym z najważniejszych zadań każdej zaawansowanej kraju, a tym samym każdej firmy odpowiedzialnej. Ustawowe zarządzania ryzykiem oraz bezpieczeństwem i higieną pracy pozwala pracodawcy lub niezależnym przedsiębiorstwom stworzyć optymalny związek między gospodarki i bezpieczeństwa, przy jednoczesnym poszanowaniu odpowiedzialności pracodawcy za bezpieczeństwo.*

#### 1. WSTĘP

Road transport is the principal mean of transport in the European Union for both passengers and goods. Today, the European Union has almost one vehicle for every two residents, and road freight traffic represents more than two thirds of the total tonnage. European Union action focuses essentially on controlling the multiple costs of road transport. Transport development must comply with safety requirements as well as environmental protection. In addition, a number of aspects of transport are the subject of European regulation, whether this is competition between transport operators, access to the profession, working conditions or the technical standards of vehicles.

In spite of the progress achieved, the latest results of the fourth European survey of working conditions show that many workers in Europe continue to perceive that their jobs pose a threat to their health or safety.

Moreover, occupational hazards are not being reduced in a uniform way:

- some categories of workers are still overexposed to occupational risks (young workers, workers whose jobs are insecure, older workers and migrant workers);
- certain types of companies are more vulnerable (SMEs, in particular, have fewer resources to put complex systems of worker protection in place, while some of them tend to be more affected by the negative impact of health and safety problems);
- certain sectors are still particularly dangerous (construction/civil engineering, agriculture, fishing, transport, health care and social services).

#### 2. WORK SPECIFICATION OF TRANSPORT

##### 2.1 Influence of transport development on workers

Transport workers are not a homogenous group, they represent, within one sector, many different occupations with specific sets of working conditions and risks, and very varying demands. For example, in air transport, the workforce includes ground handling staff, technicians, pilots, air controllers, flight attendants, customer desks and check-in workers, while in rail transport tasks include catering, driving, maintenance, shunting, loading, and ticketing, and road transport may be very different depending on whether it is long- or short-distance, passenger or goods transport, courier or freight transport services. Recent changes in the transport sectors have contributed to a change in risks and exposures. But there

<sup>1</sup>Ing. Viera Šukalová, EUR ING, PhD., University of Žilina in Žilina, F PEDAS, Department of Economy, Univerzitná 1, 010 26 Žilina, Slovakia, Phone +421415133214, E-mail: sukalova@fpedas.uniza.sk

are some common issues. The following section of this thematic report addresses the main hazards and risks that transport workers may face. These risks are often better described for certain groups.

The main physical hazards and risks include: exposure to vibrations and prolonged sitting (design of seat, cabin and other equipment); manual handling; exposure to noise – when loading and unloading, when driving trucks (motors, tyres, ventilator, etc.); inhalation of vapours and fumes, handling dangerous substances (exhaust fumes, chemicals on-board, fuel, road dust exposure while loading, unloading and at rest stops, washing and preparing vehicle); climatic conditions (heat, cold, draughts, rain, etc); limited scope for adopting ergonomic work conditions and healthy lifestyles. Fatigue is the most commonly reported health problem in land transport. The road transport sector is highly competitive. Workloads are increasing and drivers face escalating pressures, for example pressures from clients to deliver faster and more cheaply, with issues such as ‘just-in-time management’, increasing traffic, remote monitoring, and many drivers working irregular and long hours.

The transport workforce is ageing at a greater rate than the general working population and shortages of labour supply may occur. The specific combination of risks and combination of factors such as ergonomic risks, work organisational stressors, noise, dangerous substances, vibration, unusual working times, working away from home and from a work base, lack of facilities, complex work situation, the need for constant adaptation, and the many structural changes that have occurred in the sector are a particular challenge for monitoring and prevention

### 2.2 Professional drivers

Professional driving is a highly hazardous activity, involving far higher risks than those encountered in virtually any other occupation or most other activities of daily life. Despite the fact that their rate of death in road crashes is lower than for other groups of road users, professional drivers impose substantial risks on other groups of road users.

Managing occupational safety and health risks to drivers in the road transport sector can be challenging because drivers work alone, away from their base, and have to contend with traffic danger in addition to many other risks that are difficult for them to control. But risk management measures can be successful if they take account of how the sector operates in practice, as well as the characteristics of drivers themselves and the way they work.

Working in the road transport sector requires high levels of professional skill and competence. For example, drivers of long-distance road haulage vehicles must not only be capable drivers but they must also be able to load and unload, repair technical problems, have certain language skills, carry out basic administration, and act as ‘ambassadors’ for their company in other countries. They have to deliver their goods in time, regardless of weather and road conditions. They may transport dangerous substances or fragile goods that require extra care and responsibility. In the road transport sector, as with any other, it is important to pay attention to working conditions in order to ensure a skilled and motivated workforce. [1,6]

### 2.3 Risk assessment

Employers are required to assess risks and take practical measures to protect the safety and health of their workers, keep accident records, provide information and training, consult employees and cooperate and coordinate measures with contractors. A hierarchy of prevention is set including:

- Avoid risks at source
- Combat risks at source
- Adapt work to the worker
- Replace the dangerous with the non dangerous, and
- Give collective measures priority over individual measures

Companies should ensure the safety and health of workers in every aspect related to their work. Therefore, employers should take the necessary measures for the safety and health protection of workers, including the prevention of occupational risks and the provision of information and training, and provide the necessary organization and means.

Risk assessment involves:

- Identifying hazards – what might go wrong?
- Judging who might be harmed and how seriously, including employees, contractors, the public
- Deciding how likely it is to happen
- Deciding how these risks can be eliminated or reduced – can facilities, work methods, equipment or training be improved?
- Setting priorities for action based on size of risk, numbers affected etc.
- Implementing control measures
- Reviewing, to check that control measures are working
- Including employee consultation in the process and providing information on risk assessment results.

## **It must be done five steps to risk assessment:**

### **Step 1: Look for the hazards**

If you are doing the assessment yourself, walk around the workplace and look afresh at what could reasonably be expected to cause harm. It is better to concentrate only on significant hazards, which could result in serious harm or affect several people. Also employees or their representatives can tell what they think. They may have noticed things, which are not immediately obvious. Manufacturer's instructions or datasheets can also help you spot hazards and put risks in their true perspective.

### **Step 2 : Decide who might be harmed and how**

We cannot forget people who may not be in the workplace all the time, e.g. cleaners, visitors, contractors, maintenance personnel, etc. Members of the public, or people sharing the workplace with can be hurt also in some cases.

### **Step 3: Evaluate the risks arising from the hazards and decide whether existing precautions are adequate or more should be done**

Even after all precautions have been taken, usually some risk remains. What you have to decide for each significant hazard is whether this remaining risk is high, medium or low. First, ask yourself whether you have done all the things that the law says you have got to do. Your real aim is to make all risks small by adding to your precautions if necessary. Improving health and safety need not cost a lot. For instance, placing a mirror on a dangerous blind corner to help prevent vehicle accidents, or putting some non/slip material on slippery steps are inexpensive precautions considering the risk. Only use the personal protective equipment when there is nothing else that you can reasonably do.

### **Step 4 : Written document**

The risk assessment should show that

- a proper check was made
- you asked who might be affected
- you dealt with all the obvious significant hazards
- the precautions are reasonable and the remaining risk is low.

The written document has to be kept for future reference, it helps to show that you have done what the law requires.

### **Step 5: Add to the assessment to take account of new hazards**

Sooner or later you will bring in new machines, substances and procedures which could lead to new hazards. If there is any significant change, you should add to the assessment to take account of new hazards in any case, it is good practice to review your assessment from time to time. Don't amend your assessment for every trivial change, or still more, for each new job, but if a new job introduces significant new hazards of its own, you will want to consider them in their own right and do whatever you need to keep the risks down. [2]

## **2.4 The most frequent hazards in the occupation driver**

### **Exposure to vibrations**

The changes in working life that may lead to increased exposures to vibration. Increasing workload, fewer breaks and longer shifts, as well as increasing productivity, higher efficiency and short-term production, combined with greater mechanisation exposes workers to greater doses of vibration. The report identified branches where the number of people that are exposed is rising, e.g. in airport transport and city traffic. Poorly qualified workers and heavy traffic can be seen as changes in the world of work which cause additional vibration exposure and the effect of globalisation is contributing to this tendency in Europe. Surveys suggest that transport workers are more exposed to vibrations (i.e. vibration of cabin) than the average working population. Full body vibration, for example caused by the driver's cabin, may also affect the vision, coordination and the overall functional ability of the drivers and contribute to increased accident risk.

### **Painful positions**

Transport workers are no more exposed to painful working positions than the average working population when all painful working positions are included — hand and neck being twisted, neck and back being bent, kneeling, or with arms lifted above the head. However, transport workers (in general) spend much of their workday sitting. Specifically when loading and unloading, transport workers are exposed to heavy lifting tasks. In many service occupations in transport, for example catering and cleaning, lifting and handling of loads is also common. It often depends largely on the arrangements with clients if lifting aids or ergonomic equipment are available or not. Therefore it is necessary that transport workers are also trained in correct lifting and carrying techniques to prevent low back disorders.

### **Exposure to noise**

Different noise sources are present in transport means. Some of the loudest noise levels are measured at workplaces in or near planes and on ships, as well as in road traffic. When loading and unloading, boarding and performing maintenance, transport workers may be exposed to loud noise. The older the vehicle, the louder noise production may be. Furthermore, since it is necessary to telecommunicate by radio, the use of noise reduction measures (e.g. the use of noise absorbing

materials) or development of other techniques is important. It should be highlighted very high levels of noise produced by vehicles and transportation means and the possible impact on cognitive abilities of workers and potential to increase accident risks.

### **Exposure to heat and cold**

Especially during loading and unloading activities, transport workers may be exposed to extreme climate conditions. Some transport occupations imply work outdoors (on ships, dockyards, airports, in maintenance and parking areas of large vehicles). Workers in many transport occupations have limited influence on the climatic conditions of their working environment, as it is influenced strongly by ambient conditions and, even indoors, by constant coming and going of passengers and workers.

### **Exposure to dangerous substances, vapours or fumes**

Handling dangerous substances is more common within the transport sector than usually perceived. Obviously, in goods traffic dangerous substances are handled frequently when loading and unloading. Packaged dangerous substances are not usually a risk, but in case of an accident or leakage they may cause considerable risk, and have been at the origin of serious accidents and fires in all subsectors of transport. There are many other situations where transport workers may be exposed, while using chemical products intentionally, or as a side exposure, for example from exhaust fumes and solvents. Many of the service and maintenance tasks undertaken by transport workers, in catering, cleaning and servicing also involve the use of dangerous substances.

### **Work pressure**

Work pressure in the transport sector is often a result of 'just-in-time' management. A further element that impacts on workload is the introduction of a number of computer applications such as planning systems and mobile means of communication. Several surveys reveal that transport workers, especially the drivers, are more involved in monotonous tasks and that they have less influence on their work than the average working population. Work pressure in land transport is often a result of 'just-in-time' management. The just-in-time principle means that goods are delivered at the moment the company needs them in the production process. Because the stocks are being decreased to a minimum, a higher frequency of delivery of small amounts is necessary. The introduction of chain logistics is an important trend: as different transport systems work together there is an increasing need for the management of transport streams and a flexible organisation. Companies across all sectors are nowadays more concentrated on their core business, which leads to an increase in supply industries and, consequently, more transport streams as the increase in outsourcing increases the geographic spread of economic activities. Furthermore, the life cycle of products is shorter: they are replaced faster, which results in an increase in both consumption and transport.

A further element that is changing the content and workload of drivers is the introduction of a number of computer applications such as planning systems and mobile means of communication. These systems are used to organise work more efficiently and to increase quality and additional services: cost calculations may be more accurate and detailed, planning more efficient, less errors are expected and faster interventions when problems occur are possible.

### **Tiredness**

Tiredness is according to a European survey of working conditions Eurofound and national surveys of common health problems in land transport. Road transport sector is extremely competitive. Workload increases and drivers are facing an increasing pressure, for example, from clients to deliver goods faster and cheaper solutions to the problems of management and delivery just in time, also face increased traffic, remote monitoring and many drivers have irregular and long working hours. Workers in road transport seem to be slightly better informed about occupational risks than the average worker. [4,5 7]

### **Legislative rules**

Very important are legal rules for working time in the road transport. The Act on working time and rest in transport regulates working hours and rest periods of employees in the transport time of driving, safety breaks and rest periods for drivers of motor vehicles and related rights and responsibilities and accountability for violations of those obligations.

The rules of working time in transport are regulated by:

Act. Nr. 124/1996 on safety and health protection at work

Act. Nr. 462/2007 on organisation of working time in the transport

Labour Code

Although the act is longer in force in Slovak republic, experience as shown persistent weakness in its compliance, which underlines the importance of controls, power law which regulates and also defines the state administration bodies to carry out this check. Labour inspectorates and the National Labour Inspectorate use to control at the workplace of the transport company:

- Respect of weekly rest periods and driving times, rest periods between,
- Compliance with the two-weekly limitation of driving times,
- To provide compensation for the reduction of daily or weekly rest periods,
- Proper use of record sheets and recording equipment.[3,4]

### 3. CONCLUSION

For both economic and human reasons, health and safety at work deserve to be given a prominent place on the Community's policy agenda. Occupational health and safety plays a vital role in increasing the competitiveness and productivity of enterprises and contributing to the sustainability of social protection systems because it results in reduced costs for occupational accidents, incidents and diseases and enhances worker motivation. Occupational accidents and diseases represent an enormous financial burden for public and private social protection systems and require an integrated, coordinated and strategic response, as well as cooperation between the main parties involved in the European Union with regard to the development of Community and national policies.

*Article was created as output of the project solution: Model Activity – Based Costing (ABC) in logistics system of company, VEGA 1/0995/11.*

### 4. BIBLIOGRAFIA

- [1] COM(2007) 62 final - Improving quality and productivity at work:Community strategy 2007-2012 on health and safety at work
- [2] Šukalova, V.: Manažment bezpečnosti práce, Žilina, Žilinská univerzita 2011, 166 s., ISBN 978-80-554-04
- [3] Act. Nr. 124/1996 on safety and health protection at work
- [4] Act. Nr. 462/2007 on organisation of working time in the transport
- [5] <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0062:FIN:EN:PDF>
- [6] [http://osha.europa.eu/en/sector/road\\_transport/hazards-and-risks-to-road-transport-drivers](http://osha.europa.eu/en/sector/road_transport/hazards-and-risks-to-road-transport-drivers)
- [7] [http://osha.europa.eu/en/publications/reports/transport-sector\\_TERO10001ENC#exposure\\_to\\_risks](http://osha.europa.eu/en/publications/reports/transport-sector_TERO10001ENC#exposure_to_risks)