

## THE MANAGEMENT OF OCCUPATIONAL HEALTH AND SAFETY IN ROMANIA

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**Abstract:** The management of occupational health and safety constitutes the missing link as concerns the elaboration and implementation of integrated management systems i.e. quality, safety, environment in accordance with the new trends at international and European level.

The implementation of management systems completes the existing organisational system in place within the undertakings while also facilitating a systematic enforcement of the OHS legislation. Consequently it contributes to the integration of this field within the general management of the undertaking concerned.

The paper herein exhibits the basic elements of the national legislation in the field, the implementation steps of the OHS management systems, examples as regards system procedures drawing up, and the audit of system as well.

**Key words:** occupational health, integrated management systems, the national legislation in the field, security assessment systems, assessment method for the risk

A key-problem of access to the optimization of man's integration within the professional requirements system, to the preservation and efficient usage of his creative potential, work protection nowadays is an interdisciplinary domain that integrates conjugated concerns of technical and art sciences; alike interested in finding the most appropriate means designing job functionality. The final aim of this business is preserving life and integrating man in the work process preventing accidents and professional diseases.

The evolution of man's work protection – related concerns has gone through three separate stages:

- machinery-oriented
- man-oriented
- man-machinery system oriented.

Last stage covers the modern approaches seen through the reliability theory for the security of the technical systems, for the ergonomics of the security assessment systems of man-machinery systems. Component part of the social security, to which it convens size and value in the socio-economic system balance, work protection has at all times strong humanitarian side. Any society that recognizes "man as value and ultimate aim" will admit that protecting his life is a priori justified and entitles anyone to an effort however great.

On the other hand, financial resources are limited and, however strong social side of this business, setting-up priorities in allocating those resources should be economically based under the circumstances of market economy. Shifting weight from

the social, humanitarian component of work protection to the economical one, under the market economy circumstances, requires great changes in how to approach the work security and health issues.

Essentially, these changes consist in shifting focus from quality analysis to finding some criteria, methods or indicators that would enable measuring the risk, the system work security status (workplace, workshop, unit). Such quantifications will allow, firstly, for an X-ray of the existing situation that generates acceptable risks and not priorities in taking prevention steps or allocating the adequate resources respectively. Secondly, assessing the risk work security levels within a system will enable the comparison of this aspect in various systems with applications in the optimum usage of the economic leverages.

Thirdly, assessing the risk work security levels will stimulate the companies to improve their work conditions, take steps to pass from high-risk levels down to low, acceptable levels, respectively. Finally, applying and generalizing such methods would enable the setting-up of some social security levels differentiated by company risk/work security level, covering work security criteria in the salary system, respectively, together with the work productivity and complexity criteria.

In this country there has not so far been any assessment method for the risk level within a system. Present estimations of this issue, are based on post-accident/disease analysis, frequency and seriousness clues of these events. Internationally, the idea of security diagnosis in the enterprises is relatively old, but no operational and generalizable tools have been reached out, except for few cases.

The various elaborated procedures and methods either have a limited applicability as derived from accident specific patterns, or are simplistic, as they are not systematically approaching the whole range of risk factors that may generate accidents or professional diseases. After having systematized the basic principles of work security/risk assessment, the work hereby presents a critical review of the current status of assessment criteria and methods as described in the specialist literature.

Depending on their underlying theoretical pattern, the existing methods fall into four categories:

- controls and check-ups
- Heinrich model – based methods
- methods based on system reliability theory
- methods based on system ergonomics.

For each category a critical analysis of the representative methods is done insisting on the purpose for which they have been conceived, of the tools, their current usage, deficiencies and application limits. The comparative analysis of the advantages and limitation of each method or different method categories is presented synthetically and in the form of revision table at the end of this part of the work.

Next part covers my personal input into the development of a theoretical model of the work accidents and professional diseases genesis, offering the possibility of systematic review of all the risk factors within a system based on that of the risk/security level assessment too, within the respective system. Starting from the analysis of the elements implied in any work process- executive task, production means, work environment the main categories of risk factors specific to each element are established, finally resulting in a checklist of those factors.

To ease the identification of the risk factors concrete forms of manifestation in accidents and professional diseases within a system, a classification of those forms is attempted depending on the following criteria:

- Dependency on the elements of the work system;
- Responsibility of the human factor;
- Place and role in the dynamics of the work accident;
- Way of manifestation;
- Way in which it produces wounds.

To the same purpose, the action of the risk factors on the human body is analyzed and specifications on the relationship between risk factors and causes are produced. Within the same chapter the theoretical model of the work accident dynamics and the peculiarities of the professional diseases genesis are presented.

The main part of the paper consists in the elaboration of an assessment method for the risk/ work security level within a system, based on the pre-requisites provided by the previously developed theoretical model and on the outcome of the current status review. The proposed method is part of the semi-quantitative analytical methods and it essentially consists in the identification of all the risk factors in the reviewed system (workplace) with the help of some pre-established checklists and measuring up the risk size for each risk factor based on the combination between the seriousness and the frequency of the maximum predictable consequence. The overall risk level per work place is determined as a weighted average figure of the partial risk levels so that the compensations would be minimum. The security level results indirectly, being in indirect proportion with the risk level.

The application of the method is finalized with two consolidating documents for each workplace: risk assessment log, steps-to-be-taken log. In the first log the following are recorded: the identified risk factors, their measuring parameters, the maximum predictable consequence, classes of seriousness and frequency, the risk level for each risk factor and the overall risk factor on workplace.

Second log covers the technical and organizing measures required for fighting against the action of each risk factor in the assessed workplace; they make up a hierarchy depending on the risk levels beginning with the highest ones (7,6,5,4.). By applying those steps, the workplace shifts from a highly risky level to lower levels. As the method allows for the workplaces to be included in risk levels, security levels, respectively, it can also be used for other purposes.

In this paper a detailed presentation of the method is achieved (purpose, principle, users, stages, application, work procedure and application conditions), as well as of the tools (checklist for the identification of the risk factors, consequences checklist, scale for measuring the seriousness and frequency, grid of risk levels etc). The last part of the paper is the selective presentation, as an example, of some of the method applications in the industries of electrical power distribution, building machinery, hydroenergetics, petrol produce delivery and depositing, PECO stations, transportation and nuclear-energetical industry.

Workplace-related risks assessment is a legal obligation of the employers arising from the framework directive 391/89/ EEC and included in articles 11, 31 respectively, of General regulations of work protection.

The method presented in this paper has been approved by the Ministry of Work and Social Solidarity and its implementation enables:

- Identifying all the risk factors at workplaces; it is a necessary operation with a view to authorizing the companies from the work protection perspective and to elaborating their own work security instructions;
- Providing an X-ray of the existing situation in each workplace, from which acceptable risks arise and those that come along below the risk acceptability curve;
- Establishing the risk size (risk levels) at each workplace and arranging them in a hierarchy;
- Establishing priorities with regard to the prevention steps at each workplace, optimum usage, respectively, of the resources allocated for this purpose;
- Establishing a hierarchy of the workplaces from the perspective of their dangerousness and nociv;
- Comparing various workplaces in point of accident and professional diseases risks with an application in the optimum usage of the economic leverages;
- Managing risks on computer, if databases with the assessment results are to be set up.

With all the deficiencies generated by the incomplete comparability of data, European Union statistics have revealed the fact that along one year in the past decade, approximately 5 out of 12 million people employed in the 15 member states had had a work accident that generated temporary work incapacity for more than 3 days. Annually, about 6,000 work accidents wind up with the worker's death in these countries. Each accident means physical and psychological suffering, income losses a.s.o. for those involved: victims, family, friends and also a waste of working time for the company where that happens and for the society. Worldwide, the investigations conducted by the International Bureau of Work indicate a direct cost of 1% of the gross national product for accidents and professional diseases while total losses due to these events represent 2-4% of the gross national production the developed countries.

Everyone wishes security with the lowest costs. An extremely useful tool for reaching this desideratum is to introduce the economic calculus in producing the basics of work protection decisions at micro and macro-social level.

As public opinion has required to a greater extent that work accidents and professional diseases be hindered, more questions have been asked about the impact of the new attitude on the contractors and society itself:

- Does security generate any returns for companies?
- Do security regulations influence the company competitiveness in a negative way?
- How can costs be worked out and how can they be measured up?
- Can costs be used in building up the basics of a political decision for the prevention of accidents and professional diseases?
- How can resources be allocated and preserved?
- Are security regulations too expensive for society? Do they generate returns, too?

Although, internationally, there are several concerns for clarifying the already mentioned issues, no consensus has been reached. In this country the costs of accidents and professional diseases have not been applied either at micro or macro-economic level so far.

Therefore, no economic - related issue has been clarified with regard to work protection business and there is no tool to enable its efficiency to be assessed. Within

this context, in Roumanie its propose forward a genuine theoretical system of approaching the economic side of work accident – related phenomenon to which 2 valuation methods are added both in the context of modern perception of the relationship between work safetiness and economy and also in that of various economic calculation models applied to the field hereunder.

Observing the logics of the approach, the roumanien sistem for implementation of the occupational health and safety management is structured in two steps. First step is a world wide X-ray of the current status in starting-off and applying the economic calculus in the field of work security and health. First the historical pre-requisites were looked into in so far as the association between the notions of economic calculus and work security is concerned, the way in which the latter's approach has been done through economics and its motivation.

For the second step, based on the theoretical basics, two assessment methods have been produced for the work accidents economical dimension: modular and analytical. Both are detailed presenting the principles, tools, algorithm and their usefulness as well as demonstrations. The modular method can be used on various purposes depending on which various modules are produced enabling the calculation of the professional accidents generated loss at the victim level, company levels where the event took place, at the insurance companies, in the state sector, in an economic branch or globally (the whole accident – related loss cumulated at macro – socio-economic cost level). It purposely addresses specialists in work security and health without any economic qualifications being necessary. In order to make its application easier, "AMCOS" software has been designed.

The analytical method is indicated for the business profitability analysis as it enables setting up and quantifying the influences exercised by a work accident on the company performance indicators and it imposes in depth knowledge of economical-financial review.

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